

Collecting and Shooting the Military Surplus Rifle



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Tennessee Gun |



Article by Mike Wetteland

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The rifle I used for this project is a DWM 1916 Gewehr 98 that was reworked in 1935 to 98k specs by Oberndorf (*S/42G* marked rear sight base). It was later reworked by Bubba as the photo shows.



He cut down the stock and the barrel, re-installed the front sight and added a recoil pad. The rifle was purchased for \$90 from a dealer at a gun show. I also bought a take-off barrel for \$5 at the same show. I installed the new barrel and checked [headspace](#). My goal is to restore this gun to its original configuration, not create a forgery to be sold. I will not be marking the stock with any [waffenamts](#).

I used our new walnut stock with flat butt plate for this project. The stock is a very nice black walnut with some figure, not fancy by any means, but a good solid piece to work with.




The first thing you notice is that the new stock is substantially thicker than original early war German furniture. Although purists will have some complaints, I feel it's better to have extra material to work with. You can always remove more wood. The same goes for the handguard, it's over-sized to match the width of the stock.

In addition, FAC has designed these stocks so minimal inletting of the action is required. That does not mean all guns will drop in, but that you do not have to be a master stock maker to use this product. Fitting all the metal took me 8-9 hours with hand tools at a very slow, methodical pace. You may be faster or slower.

THE BIGGEST THING YOU NEED IS PATIENCE!

First, check to make sure your rifle is UNLOADED. Disassemble the rifle and clean it. You don't want any grease or oil to stain the wood, or collect sawdust.

Boyd's Supplied Product Description	
	<p>Boyd's Gunstock Industries 25376 403rd Ave Mitchell, SD 57301</p> <p>Phone: 605/996-5011 Fax: 605/996-9878</p> <p>http://www.boydboys.com/</p>

Useful Tools; Rotary tool w/bits (*new, sharp cutters help*), sand paper, rasp and coarse files, sanding blocks (*square and round*), hand drill with 5/32 bit, hammer, punches, rat-tail file, screwdriver, and masking tape. A belt sander is nice, but not required. Birchwood Casey sight black is very good for



fitting parts, it's like candle soot in a spray can.

Step - 1. Take the barreled action and gently try to put it in the stock. If it fits nicely you can start fitting the recoil lug. If not, dust the underside of the action with sight black and try again. This will show you where the high spots are, so you can trim them. Repeat as needed.

Step - 2. Note: remove a little at a time, you can always cut more, but replacing it is harder. DO NOT beat the action into the stock you may crack it! Also, Chinese mfg. receivers are fatter in some areas and will require more inletting.

Step - 3. I have found that the corners in front of the recoil lug area need to be squared off to allow the lug to seat fully. Also check the rear tang to see if it needs to be relieved so that you can pull out the action without splintering the wood. A small cylindrical rotary tool cutter works well for this.

Step - 4. If the barrel channel is tight (*the stock I used was fine*) you can use dowels with sandpaper the size of the barrel to relieve any wood in the barrel channel. Be careful not to round the top flats above the channel, as it will look sloppy. The stocks were not designed to free float; however, you can do what you like.



Step - 5. Once the barreled action fits OK, we move on to the recoil lug. You will need to modify a screwdriver to remove the old lug. By grinding two prongs on the tip to fit the holes on the nut, you can unscrew the round nut and push out the recoil lug.

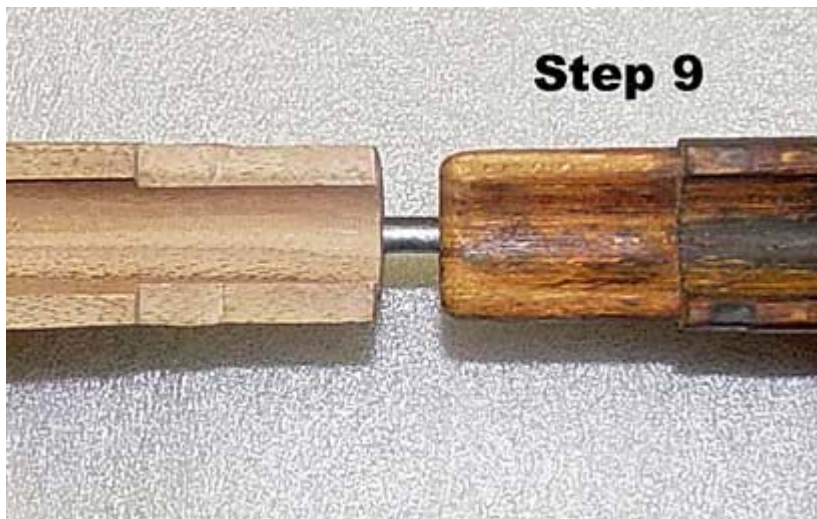


Step - 6. Clean off the lug so you don't get crud on the new stock. Use a small narrow file to open the hole for the lug. Start on the back edge, filing down just enough to level off the wood that contacts the backside of the lug. Next remove only enough wood to get the lug through the opening, and screw on the nut. NOTE; DO NOT over-tighten the nut, firm and snug is fine.

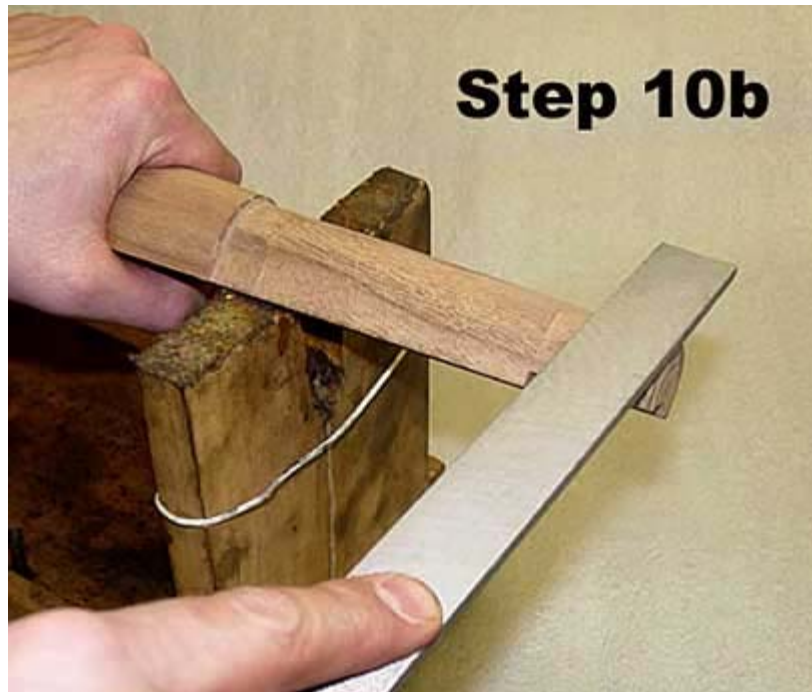
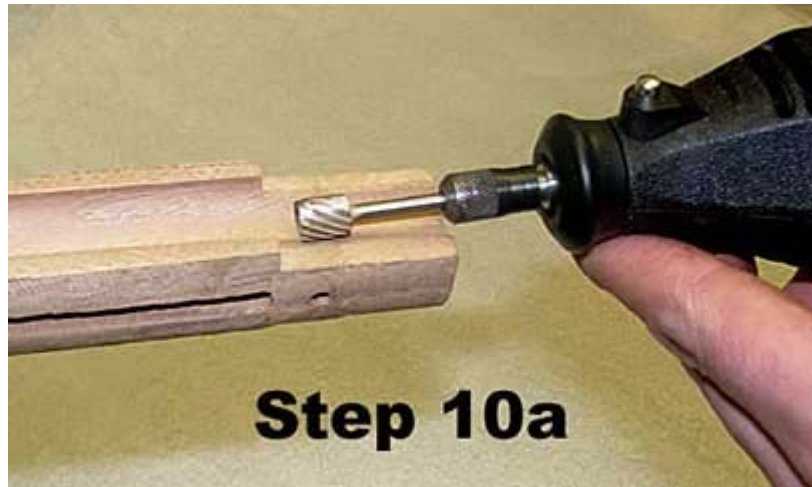
Step - 7. Now check the barreled action again to see if anything has changed. If you did not get the lug flush against the wood, you may not be able to get the action back in. Remove the lug and re-fit it.

Step - 8. Once you have the action fitted, install the trigger guard gently, noting where it is sticky. I have found that the front and rear tangs might need some relieving. Use a rotary tool or sandpaper on a wood dowel to maintain the inside radius. You want to be able to remove the trigger guard without chipping the edges. If you get the trigger guard stuck, remove it by lightly tapping from the top with a punch. Do the front then the back, making sure to keep it level.

Step - 9. Next we will fit the bayonet lug. This is the part that requires the most work so take your time. Use a coarse file, rotary tool, and sandpaper. NOTE, use the old stock with the bayonet lug removed as a guide.



Step - 10. Take a rotary tool with a sharp cutter and start in the barrel channel. Maintaining the same radius and depth, cut down the wood the thickness of the bayonet lug wall. With a coarse file trim the sides and bottom. Check frequently with the bayonet lug, and use the old stock as a guide.

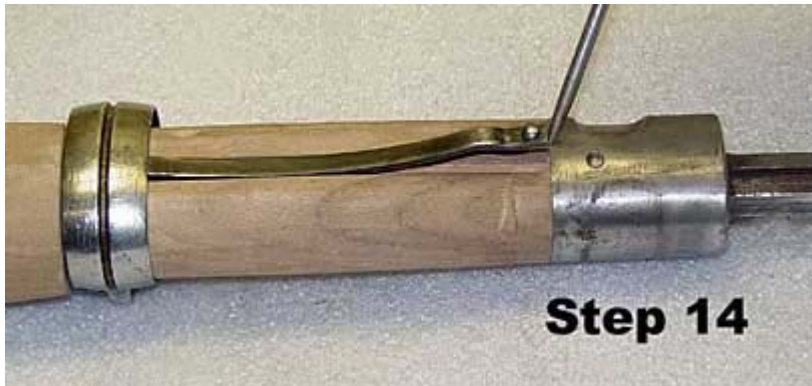


Step - 11. You may have to shorten the end of the stock to get the cross pin holes and the hole in stock to line up. If you do this, remember to round off the edges like the old stock, otherwise the lug won't seat fully.

Step - 12. Note, if you remove too much wood you can use wood putty or Acraglas as a filler inside the bayonet lug.

Step - 13. Now that you have the bayonet lug on, gently tap the pin through. If it is not centered, re-drill the hole carefully. If it is way off, you can fill it and re-drill, or glass the lug on permanently.

Step - 14. To fit the lower band you will need to do the band spring at the same time. The distance between the back of the bayonet lug and the shoulder that stops the lower



band is critical. This affects how tight the lower band holds the handguard.

Step - 15. First, use a file or sandpaper on a block to reduce the width of the stock behind the bayonet lug. Then slide the band over the bayonet lug to the rear. If the band is crushed or dented, you will have to straighten it, or fit the stock to this particular band. Sand the outside of the stock between the bayonet lug and the shoulder until the band will slide all the way to the shoulder.

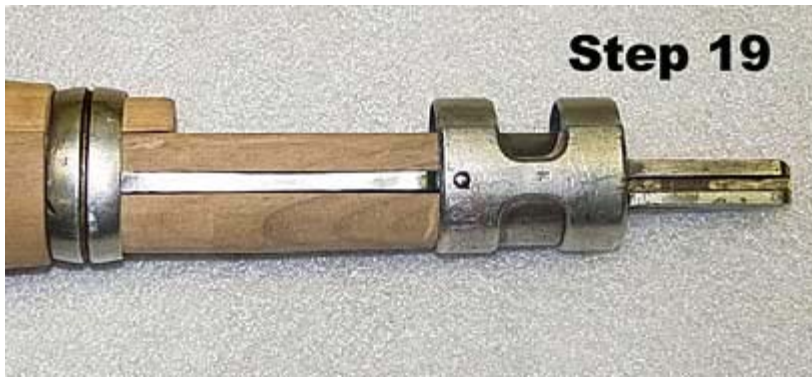
Step - 16. Next, take the band spring and place it in the channel to see if it's too tight, if it is use sandpaper on a thin block to open up the sides. Then check the clearance in the channel closest to the bayonet lug. The spring must be able to be pushed in when the upper band is installed, but not stick in the down position. You may have to use a small diameter rotary tool to relieve the wood.

Step - 17. Now put the lower band on and see if the spring will clear the back edge of the bayonet lug. You most likely will have to cut the wood shoulder back until the band spring just fits between the lower band and the bayonet lug. The bayonet lug keeps the spring from moving forward under recoil, and therefore keeps the lower band and handguard from shifting forward also.

Step - 18. To cut the shoulder back without reducing the outside diameter of the stock, put masking tape on the flat part of the file and cut with the side edge of the file. Do this slowly, to keep from over cutting. Check the distance by installing the lower band and spring frequently.



Step - 19. Once you have the bayonet lug, lower band, and band spring done, you can fit the handguard. Start by fitting



the back edge under the lip on the rear sight. Cut the shoulder the same way you did on the stock. Only trim a little at a time, you want it to be tight. Then move to the front, and reduce the front until the lower band can be slid over. Trim it back until the band spring can lock into the upper band again.

Step - 20. You will notice that our handguard is beefier than the original. You will have to reduce the top of the hand guard to clear the sights. This also allows you to sand the stock and handguard to match width wise.

Step - 21. Now we move to the butt plate. There are two versions, flat and cupped. I will cover them together, as the concept is similar. Spray the butt plate with sight black to show where the wood touches the metal. Trim the wood under the plate until the outside edges have full contact with the wood. On the flat butt plate the edge that hooks over the top is the main area requiring fitting. Trim away the wood marked with the sight black until the plate is flush.



Step - 22. On the cupped style, spray the inside of the plate and put it over the end of the stock. This will show where to trim. Repeat until the edges of the butt plate are flush with the shoulder on the back of the stock.

Step - 23. After you have the butt plate flush against the stock, mark the screw holes with a black permanent marker or pencil. Drill the holes with a bit that is the diameter of the inner shank of the buttstock screws (5/32"). This will give enough clearance for the screw without splitting the wood. I also recommend counter sinking the screw holes to avoid chipping. Pay attention to the angle that you drill the holes, as this can look bad if not done properly. Then trim down the excess wood to your liking.

Step - 24. To install the takedown disc you will need to recover them from a junk stock. We sized the cuts to the early war spec of 1", as this is more commonly available. You can use discs from other types of Mausers such as the Turkish variants or Czech 98/22. To remove the discs, take a punch and drive out the sleeve with a few hammer blows. Or you can use a press, either way make sure to have clearance on the backside for the disc and sleeve to come out.

Step - 25. Once out, separate



the old sleeve from the discs and clean them up. If you want to re-use the old sleeve don't tear it up when removing it. I recommend making a new one with 3/8" fuel line from the auto parts store. It's cheap, and the ends are already flared. Just cut off about 3" of one end and file the inside of the discs to match. Then open the hole in the stock so it slides through with no problems.

Step - 26. If you don't like the depth the discs are recessed into the stock, you can put a washer behind them (*to raise them*), or inlet the hole deeper. If you prefer the larger diameter disc (late war), you can open up the hole to fit that type.

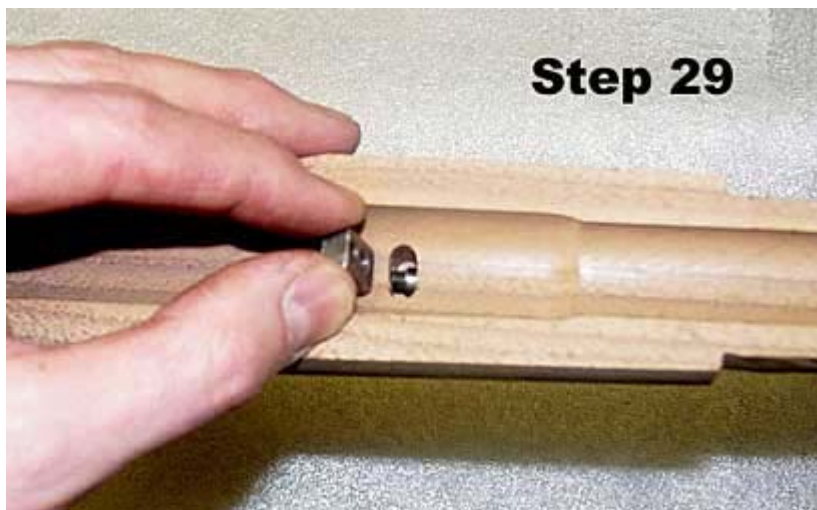
Step - 27. When you have the discs and the sleeve fitted to the stock, take a tapered shaft (*such as a broken punch*) and clamp it in the vise as an anvil. Then put the stock with everything installed, on the anvil and crimp the other side down with another tapered shaft. You may need someone to hold the stock while you hammer the crimp in the sleeve. When it's tight, rotary tool or file down the excess metal.





Step - 28. To fit the cleaning rod (12.5") you take the nut out of a junk stock and put it in the slot cut into the barrel channel. Then take the cleaning rod and slide it into the front of the stock, and try to screw them together. If you can't get them to line up, Take the nut out and look in the hole to see where the rod is in relationship to the slot.

Step - 29. If the rod is not in the center of the slot don't get bent out of shape, there is an easy fix. Take a rotary tool and open up the slot in the direction you need to get the rod and nut to screw together. Once they are together, fill the extra space with WOOD GLUE and let it harden before you unscrew the cleaning rod. This will allow you to remove and install the rod without having the nut move out of alignment. I would not recommend Acraglas for this, as you may permanently epoxy the rod in



Step - 30. The rest is nothing more than sanding and trimming the hand guards to match the stock, and slim down the outside dimensions to you personal taste.

Step - 31. After that, apply your choice of stain and sealer to all surfaces (*insides too*), and allow it to dry thoroughly. I use a cherry stain and a satin polyurethane finish, and then I

break the shine off with steel wool.

Step - 32. Here is the finished project.



Article by Mike Wetteland

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