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INTRODUCTION

I must be in paradise. I had a good morning of grouse hunting under my belt and a hearty lunch stretching it. My dog was napping in the back of the truck and I now had a chance to try out my "new" war time [Mosin Nagant 91/30](#) at the local gravel pit. I set out a target by the backstop, paced off 50 yards and got down into a good prone position. My first shot kicked up a satisfying spray of gravel directly behind my target. I grabbed the bolt and immediately knew that there was trouble in my rosy paradise world.

The bolt handle rotated about ¼ of an inch and locked up. After dumping the remaining rounds in the magazine, it took all my strength to rotate the bolt 90 degrees to open. Extracting the brass took a trick I had learned from one of my drill sergeants. Place the rifle butt on the ground and STOMP the bolt open! Obviously, I had, or more correctly, my rifle, had a problem.

My first thought was about high pressure ammo, but examination of the brass showed several gouges along its length. So the issue seemed to be a rough chamber, a common enough issue with these "new" arsenal finished "rough" Russian rifles....



Figure 1
Marked in red are large gouges near the base of the brass case.



Figure 2
A close up view makes it easier to see where the burr is in the chamber. This is the area we will concentrate on. If the burr existed near the neck, the technique presented would not be used as it could very easily change shoulder/neck dimensions of the chamber.

So how many times have we seen stories along the same lines as the one above? Probably too many to count. Just peruse through surplusrifleforum.com and there are oh so many of these same stories as well as the standard response by others:

1. Clean chamber really well to make sure that it isn't gunk in there, if that don't work.....
2. Use a bronze bore brush and scrub out the chamber, if that don't work.....
3. Use some steel wool wrapped on the brush and give it a whirl with the hand drill, and if that don't work.....
4. Buy a new rifle, after all, these things are figuratively "cheap". Too cheap to take to a gunsmith to deal with the issue in some cases.

Okay, so being the cheap people that we are, after all, we collect and shoot these under \$100 rifles with a passion, there has to be a better step 4 to clear up the issue from the intro story above.

SOLVING THE PROBLEM

First off, make SURE that it really is not an ammo issue. Check for the usual high

pressure signs in the primer area, flattened hits, flattened primers, missing primers, etc. Then attempt to do steps 1-3 previously mentioned. Start out by making sure your weapon is cleared. Remove the stock for the best results and to protect the wood.

1. Use a bore brush (.45 caliber pistol) with a solvent. Mineral spirits works well in dissolving cosmoline-like preservatives and other grease. You can chuck the rod into a hand drill and spin it as well.
2. If that does not appear to help, try the next step of wrapping some steel wool around the brush and do the same with the chamber again. Add a few drops of oil to help stop the wool from sticking. Careful this time, keep the brush/wool out of the bore, keep it within the chamber only, and you may want to protect exterior metal surfaces from scratches.



Figure 3

The bronze .45 brush is a good starting point in cleaning out your Mosin chamber. The 20 gauge mop is good for cleaning out the oil and metal bits as you work on the chamber. The mop can be washed with hot and soapy water if you want to reuse it.



Figure 4

In my case, a 5/32" bit drilled out the primer of a spent shell. The key is check on the diameter of the old brush threads to get the correct drill bit size.

In both cases, when you are finished with the brushings, make sure that you clean the chamber and bore thoroughly before you try firing the rifle. DO NOT oil the chamber to help with this issue. If too much oil is present in the chamber, you may get a ruptured case when fired. The oil makes it so that the surface of the chamber will not momentarily adhere and contain the expanding cartridge case upon firing and the case could rupture. Only oil to protect the chamber for storage, and clean out the oil before firing.

As it turns out, each of the steps listed above did a *little* bit of help. The problem rifle still hung up upon firing and still needed the help of a gorilla to open the bolt. [By the way, I propose that the Gorilla become the mil surp collector/shooters mascot...after all, how many times have you heard one of us say, "you need the strength of a gorilla to....". Just a side thought.....].

Now we get to the new technique. As before, there are a sequence of steps, each a bit more drastic to take.

It is quite apparent that the issue in our problem Mosin, is a very large burr in the back part of the chamber. This is actually good. Well sort of. Good in the sense that we can tackle the issue easier than if the burr were deeper, say up near the neck area of the chamber. But then again, if the burr were up there, it may not be as much of an issue, as the brass is flexed more upon firing and could very well be extracted with little effort... however...wish as we may, that is not the case....

To do a bit of heavier material (i.e., burr) removal, some emery paper was employed. The first trial run used a fairly coarse, but that would not be recommended anymore. As it turns out, that paper cut TOO much from the affected area (more on that later). Instead, use fairly fine paper, 600 or 800 grit or finer.

1. Drill out the primer pocket of a fired case (preferably from the affected rifle). Use a 5/32" drill bit to accomplish this.



Figure 5

I use an old nylon cleaning brush as the "nut". I left the top of the brush in place to act as an alignment in the chamber. In most cases you will want to trim it flush with the case mouth.

2. Use an old bore brush as a locking "nut" on the rod. You may have to cut off excess length. Tighten the case to the rod.



Figure 6

Use your good ol' Dremel tool to cut a slot into the brass case. The slot will hold your paper in place.

3. Using a cutting circle and a Dremel, cut a lengthwise slot into the side of the case, from just below the shoulder to the base.



Figure 7

In this photo you can see where the paper has been folded over into the slot to be held.

4. Take a piece of the wet/dry paper about 1 ½ inches in length. The idea is to put a thin strip into the slot you cut to hold the paper in place, and then wrap the paper around the case, counterclockwise. As the 7.62x54R round is tapered, you will have to cut an angle to the paper to make it fit properly. A bit of experimentation will come into play, as you would concentrate on where the burr is the worst. Cut the paper to length so you have as little overlap as possible and keep the paper in the area of the burr. A drop of super glue will hold the paper in place once you have it aligned.



Figure 8

The paper has been wrapped in such a way that it covers the area where the burr is in the chamber.

5. Using a T-handle from your drill and tap kit, you can attach the rod to give yourself a nice turning handle. If not, you can also attach a vise grips to the rod to help you turn it.



Figure 9

The T handle of your drill and tap set holds onto the cleaning rod section pretty good and you can easily control your burr removal.

6. Add a few drops of oil to the paper, and slowly insert the rod into the chamber. From this point forward, **DO NOT USE** too much force. Gentle is the key. Being that the case is at a taper, this method really only polish roughly the back ½ of the chamber. Turn the rod **CLOCKWISE** in the chamber, if you go counterclockwise, the rod will unthread from the case and/or the paper will come off.



Figure 10

Here the oiled paper on the case is being inserted into the chamber. We've wrapped the paper around the case concentrating on the area corresponding to where the burr is in the chamber.

7. Continue to slowly rotate the "bit" in the chamber. You COULD use a hand drill and make the job shorter, but you can easily over do the job (as we found out).
8. Once you think you have done some of the job, clean out any oil or metal bits from the chamber.
9. IDEALLY, you would do the aforementioned steps AT your range. That way, you can test for continued problems. In our examples case, it took 2 trips back to a range to get it to the point where the bolt no longer stuck.
10. Obviously, if the bolt still sticks, repeat the steps mentioned above, perhaps going with a slightly coarser paper for a few quick turns before going back to a finer grit to finish the job.

If your burr is within the reach of the paper, it should be taken care of after a bit of "paper" work. If not, you may have to apply some judicious elbow grease and work on it longer. Just do not over do it...like we did.

Recall that I mentioned "You COULD use a hand drill..." in step 7. Well, we did, and it worked....too well. The FEW seconds that the drill ran was enough to cut a very shallow, but obvious, line in the chamber (where the paper ended on the makeshift sanding holder). It did not interfere with the operation of the rifle, it just left something to be desired. So, to take care of this issue, or perhaps if you wanted to polish out your rifle's chamber a tiny bit (to get rid of machining marks), you can do one more level of polishing.

1. Again, as before drill out the primer of a used case and attach it to the cleaning rod as before (steps 1 & 2)
2. Chamfer the mouth of the brass to remove sharp edges, after all, you are trying to stay out of the neck/shoulder area chamber.
3. Using some red polishing rouge (available at hardware stores), apply it to the brass. Spinning the brass helps.



Figure 11

Some red rouge on a brass case will work to slowly polish the chamber. Note, you will have to apply the rouge better than I did in the photo. Also note to keep the rouge off of the neck and shoulder areas, as well as the very base of the shell.

4. Place a few drops of oil into the chamber. Insert the brass, it will be tight. You may have to apply a bit more oil to be able to spin the brass.
5. Start by using hand force, if possible, to polish the chamber using the rouge. Keep the

rouge out off the shoulder and neck. Doing it this way will polish the whole chamber (sans neck/shoulder).

6. Again, if you think you need more force, you may use a hand drill, but run it slow and be careful to keep the rod straight. It is unlikely that the rouge will remove too much material, but you never know.

So, the end results in our problem Mosin was that the problem was solved. The rifle chambers, fires and extracts as it should. Total cost of the project, if using a used cleaning rod, probably will run you under \$20 or so. It costs more in time/effort than anything else. Go easy, go slow and check your work often. It's easy to remove material, but really hard (impossible) to replace it.

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