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Article Written by: Mark Trope

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The 91/30 Mosin Nagant has one of the most simple & reliable triggers ever designed. However, the trigger pull weight can leave something to be desired. Can it be improved?



The 91/30 Mosin Nagant

WARNING!

*This article addresses issues that deal with the fire control system of a MilSurp firearm. The information presented is a result of careful observation, experimentation and experience. There is **NO** guarantee or warranty of any kind on the information presented. Should you choose to try the techniques or products we present, proceed with caution. We have no control over your actions or the items you use, therefore, you assume any and all risk involved.*

The 91/30 Mosin Nagant is one of the most simple & reliable bolt actions ever designed. Everything designed & built by the Russians reflected this ideology. Simplicity & reliability were evident in their rifles, tanks & planes. Russian equipment appeared crudely manufactured, and the designs were never called elegant. However, they worked, and worked extremely well!

The Mosin Nagant trigger system is simplicity itself. It's basically two parts, the trigger and the combination sear/trigger spring. Add a pivot pin to the trigger and a screw to retain the combination sear/trigger spring and you have the simplest and most reliable fire control system ever devised.

The combination sear/trigger spring passes thru a slot in the trigger. As the trigger is pulled back it pushes against the spring and simultaneously lowers the sear. When the sear is lowered enough, it disengages from the cocking piece, and the striker can travel forward and fire a cartridge. The system is about foolproof, however, the trigger pull can be really heavy. I reasoned that **if** the combination sear/trigger spring piece was lowered, by separating it slightly from the receiver, then the pull would be reduced due to lessened spring tension, and the sear would have less distance to travel before releasing the cocking piece. Now, how to do this without modifying the gun in a permanent way, or making it unsafe?

Mosin & Nagant

Sergei Ivanovich Mosin (1849-1902) Mosin worked at the Tula Small Arms Factory, and later he was director of the Sestroryetsk Small Arms Factory. In 1889 Mosin submitted his design to the Russian Rifle Commission.

Leon Nagant (1833-1900), a Belgian rifle designer, also submitted a design to the Russian Rifle Commission in October 1889.

It seems initially the commission was leaning toward the Nagant design. However, nationalism won out, and the Mosin design was approved. But elements of the Nagant feeding and charging system were incorporated into the Mosin weapon.

(Source: The Mosin –Nagant Rifle, 3rd Edition, Terence W. Lapin, North Cape Publications Inc., 2003)

Here's what I came up with, by fitting thin shims between the combination sear/trigger spring and the receiver bottom, where it's held together by the screw, I was able to safely reduce pull by 2 pounds. Due to reduced spring tension, the pull is noticeably smoother too.

After observing the height of the sear, as it stands thru the bottom of the receiver, I started with a thin piece of sheet metal, .026 thick. I measured the combination sear/trigger spring retaining screw and found a "G" bit (.261) was the correct size to drill thru the sheet metal. I also felt some very thin shims would be needed for final adjustments.



Thin sheet steel, 0.026 cuts easily with tin snips.

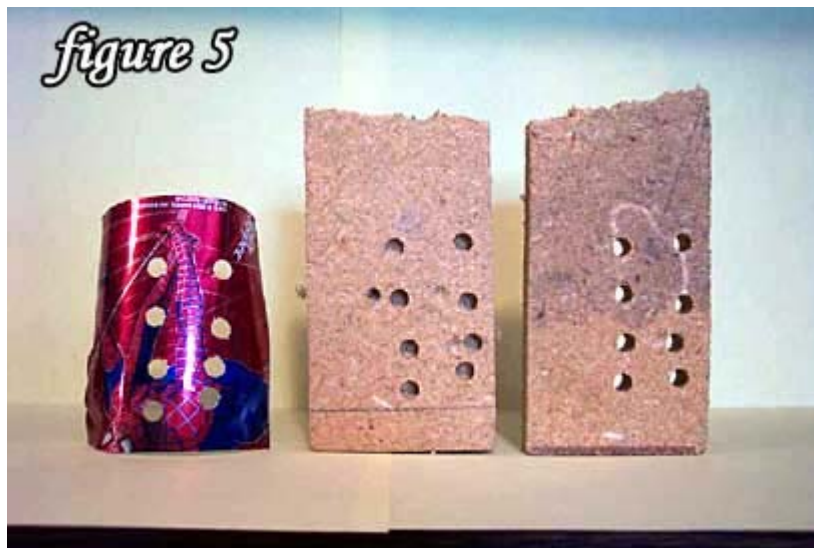


Sheet steel shim, 0.026 thick cut with tins snips, and edges dressed up with a fine-cut file.

For thin shim material I chose an aluminum soft drink can. The aluminum is only .004 thick. A sharp pair of scissors will cut a soft drink can. However, before cutting the can into small pieces, several holes will need to be drilled first. The secret to drilling clean holes in very thin material is to sandwich it between two pieces of scrap wood. That same technique works if you need to drill very clean holes through wood, without any splintering or breakout on the edges.



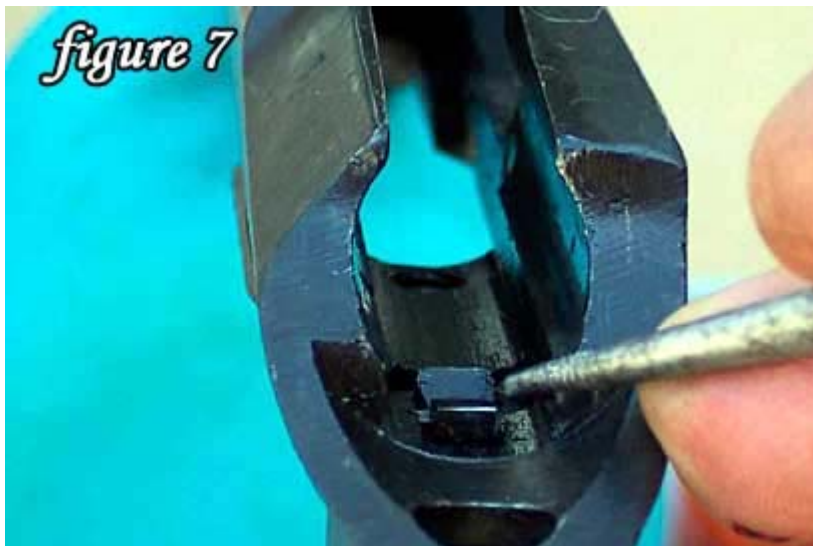
The aluminum soft drink can is only .004 thick.



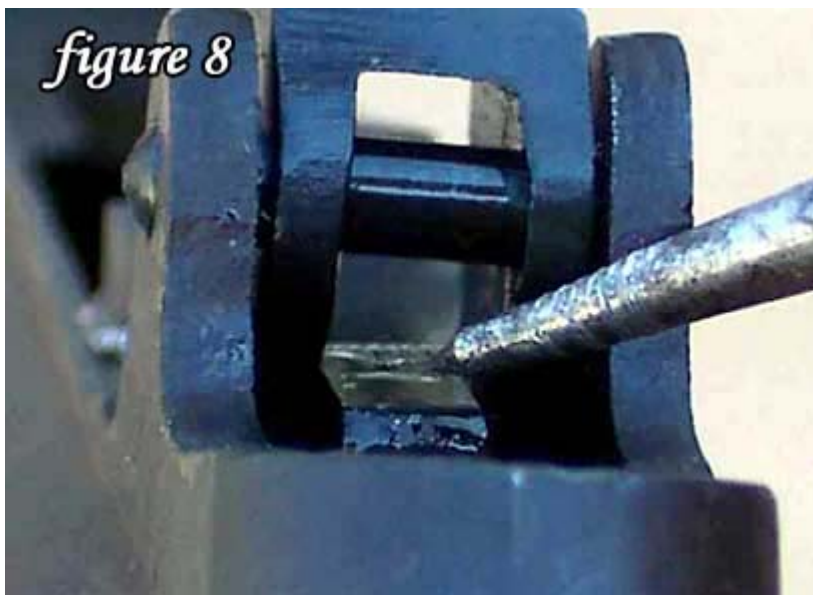
This piece of soft drink can was sandwiched between two pieces of scrap wood, and drilled. This technique results in extremely clean holes.



A sharp pair of scissors cuts the aluminum easily.



The sear comes up thru the bottom of the receiver.



The combination sear/trigger spring resting in the slot of the trigger, as seen from the bottom of the 91/30 Mosin action.



The retaining screw for the combination sear/trigger spring, notice the .026 sheet steel shim and the .004 aluminum shim between the spring & the bottom of the action.

Checking trigger pull weight requires an accurate gauge. I have a set of trigger pull gauges from **Feather River Sports**, www.featherriversports.com, 3321 Olive Highway Oroville, CA 95966, Phone: 1-530-533-3049, Fax: 1-530-533-3428. They make two gauges, a 0-25 lb gauge, and an 8oz-10lb gauge. For reviews of both these gauges see the following articles: <http://www.surplusrifle.com/reviews/measuringthemax/index.asp> and <http://www.surplusrifle.com/reviews/measuringtheminimum/index.asp>





Feather River Sports 0-25 lb gauge.



Checking trigger pull weight.



For this project I used the 0-25 lb gauge. Before adding any shims, the 91/30 registered a trigger pull weight of just over 10lbs.



After adding shims, the 91/30 registered a trigger pull weight of just over 8lbs.

Initially I tried the .026 sheet steel shim by itself. The trigger was improved! Next I added one .004 aluminum shim. Additional improvement resulted. I tried adding a second .004 aluminum shim. The rifle wouldn't cock. I removed the second .004 aluminum shim and all was well again. Apparently my action, bolt, & sear combination would tolerate a separation of .030, and still function normally. **Remember though, each action bolt & sear combination is a rule unto itself as to what it will or won't tolerate. Your rifle isn't my rifle. Proceed with caution!!**

With just a couple pieces of scrap metal, I was able to reduce the pull weight, and increase the smoothness of the trigger on a 91/30 Mosin Nagant. I *strongly* recommend that should you try this technique, you insure the chamber is empty, OK, in case anyone missed what I just said, I'll say it again, nice & loud, **insure the chamber is empty**, cock the rifle and bump the butt (the rifles, not yours) good & hard about 15 times on a padded floor. If the sear releases, you have too many shims, reduce the amount of shim material

& try again. If it doesn't release, you are all set for some good shooting. ;-)

“Trigger Pull Weight”, a Misnomer?

Some highly respected & accomplished shooters will argue that the term “trigger pull weight” is, at best, an argumentative term. To a *certain extent*, they are correct. Two triggers, one very smooth and the other gritty & rough, that have the same “pull weight”, as measured on a trigger pull gauge, will feel different to a shooter. The smoother one will “feel” like it is lighter. The simple act of adding a trigger shoe will make a trigger “feel” lighter to a shooters finger, due to the pressure being spread over a greater area of the finger pad. However, the gauge won't be fooled!

I recently put a fully adjustable, replacement trigger in a popular, current production, sporter rifle. The trigger manufacturers instructions specify a pull range of 14oz – 2lbs. Less then 14oz may not be safe. More then 2 lbs and the bolt can't be removed. Turning the new trigger's pull weight adjustment Allen screw a half turn either way would *always* show the same increase or decrease on the **Feather River Sports** 8oz-10lb trigger pull gauge scale.

Specified pull weights & trigger gauges are the accepted standard in the industry. My trigger finger can tell me a lot, but it sho' ain't calibrated!

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