

September 28, 1977

Mr. Earl R. Liebetrau
Precision Reloading Service
5465 Pine Road, Route 1
Black Earth, Wisconsin 53515

Dear Mr. Liebetrau:

I set your trigger assemblies aside for my personal inspection because a couple of them showed considerable usage. We do extensive testing, but your trigger assemblies had been used under field conditions which I thought could add to our knowledge and be beneficial in our attempts to continue to improve our products. I set the box of parts aside to be inspected and became involved on other problems. Jim Stekl talked to you at Camp Perry and called me on his return. I found the trigger assemblies and have analyzed them. I apologize for the delay as I have been negligent in this case. Your parts and 5 new fire controls are being forwarded which I hope will meet your needs.

I checked the trigger assemblies on a rifle. They functioned as your description stated. The grease and dirt was then cleaned off the parts and housing. The pivots were oiled lightly and the rest of the surfaces were left dry. The pull characteristics of the assemblies improved considerably. It has been our experience with lubricants in trigger housing assemblies that the lubricants cannot withstand the high load levels between the sear and connector, and only collect dirt if they are used. The Model 700 Rifles are shipped out of the factory with a dry molydisulfide lubricant in the trigger housing. We have found a lubricant which will hold up under the tremendous stress between the sear and connector, but if it is used only a small amount should be applied and only to the sear contact surfaces. We will enclose a container of this lube. If you choose to use it, apply a small amount to the contact surfaces with a toothpick through the inspection hole, with the bolt removed so there is a clearance between the sear and connector. If you do use the lube, wash the assembly clean and relube periodically. This lube also works very well on the sear surface which bears against the striker assembly and on the striker cam surface and threads at the rear of the bolt assembly.

On one trigger housing assembly, sealing compound had worked its way down between the housing and trigger. This material had combined with the oil and dirt, causing a drag on the trigger.

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On the trigger assembly from the varmint rifle it was found that if the pounds pull was adjusted below 3 pounds the trigger pull would become erratic; i.e., not consistent from pull to pull. This condition is caused by backing off the high rate trigger spring too far. When the trigger is pulled the return spring does not return the connector to exactly the same position, causing the trigger pull to vary. To adjust to a min. pull on the varmint rifles, cock the rifle, back the trigger return spring all the way out, and check the pull weight to release the trigger. Insert the screw back into the trigger housing and increase the tension on the spring until the trigger pull increases at least one half pound over the reading without return spring tension.

On the two 40X trigger assemblies they could not be adjusted as fine as a new trigger assembly. This change was caused by the gradual wear or rounding of the critical edge on the sear safety cam. The two trigger assemblies showed wear on the top where the bolt rubbed the top of the sear safety cam, which indicated that the sear had been cycled a considerable number of times. To maintain top functional performance you could replace the sear safety cam after extended usage.

Another note on the two target trigger assemblies. The sear safety cam is chrome plated to inhibit rusting and give a constant lubricity between wear surfaces. After long continued usage the abrasive action wears through the plate. Iron oxide can then form on the critical surfaces, making the trigger pull inconsistent.

You mentioned in your letter that we should offer an option of a Canjar or Timney trigger. We feel our trigger assemblies are just as good or better than these competitors. I think you would find similar results with the Canjar trigger assembly as you experienced with the Remington under similar conditions.

While it is not implied that our assembly is perfect, we are trying to improve its functional performance and appreciate your sending in the trigger assemblies.

We have replaced the sear safety cams, cleaned and readjusted your trigger assemblies. Also included are a few new sear safety cams.

Very truly yours,

John P. Linde, Manager
Manual Firearms Design
Illion Research Division

JPL:T