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MODEL 700 TRIGGER ADJUSTMENT SPRING AND SCREW

An investigation was begun to redesign this trigger adjustment spring and screw. The object was to have a three pound load on the spring when the screw was just barely engaged in the trigger housing. At the same time the spring rate had to be low enough to be able to get the five pound maximum trigger pull with sufficient screw engagement. This redesign was to be accomplished without any major change in the trigger housing and if possible make it retrofitable.

The controlling parameters are:

- Trigger adjusting screw hole diameter.
- Trigger adjusting screw hole length. Distance from outside edge of spacer to connector surface.

Using the Remington Spring Design Program and a maximum solid torsional stress, for the wire diameter used, a spring was designed. The spring catalogue maximum torsional stress was used to prevent the spring from taking any set so the three pound force at minimum screw engagement would remain constant. The spring rate on the redesigned spring allowed approximately .060 movement to go from the three pound minimum force to the five pound maximum force.

Three trigger housing assemblies were put together using the new redesigned spring and screw. The spring had to be compressed approximately .150 for initial screw engagement. The screw had three threads. The trigger adjusting screw hole in the spacer was counter bored .030 deep and .150 diameter to clear the adjusting screw threads. With the screw just engaged the trigger pull was three pounds. When the screw was adjusted for maximum engagement and the trigger pulled to release the sear, a force of 4 1/2 pounds was required.

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Upon further evaluation of the system it is the writer's opinion that we should not continue with this design. The following reasons are given.

o Using the controlling parameters a spring could not be designed to have a spring rate that would allow for a great enough movement between the three pounds minimum trigger pull to the five pounds maximum trigger pull. (.060 maximum with a solid torsional stress to prevent the spring taking a set). This would allow just over two threads engagement to reach the maximum trigger pull. I do not consider two thread engagement adequate especially if you consider that setting the trigger pull on the mean would allow just over one thread engagement. (Using a 40 pitch screw).

o Part of a thread engagement (minimum screw engagement) to get the three pound minimum pull would allow what I would consider possibly an unstable condition. It would take very little movement for the screw to come loose.

o If the screw came loose it could not fall out as it would contact the stock. There is approximately .050 plus or minus a tolerance between the stock and the front of the trigger housing adjusting screw hole. This would allow the spring and screw to be trapped. In the assembly put up this was demonstrated. The trigger pull dropped to two pounds which defeats the purpose of the three pound minimum pull.

o To allow the screw and spring to come out completely the stock would have to be relieved in the web area for approximately another 1/8 of an inch. This would also mean the stock reinforcing screw would have to be raised toward the receiver. There is currently a cut through the top of the web that can probably be left out which would gain back the material that would have to be removed on the bottom of the web.