



NRA Trigger Talk: Installing A Better Go-Switch

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November 2006 ©

PRINTED IN THE USA
\$3.99US \$5.99CAN



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Tradin' Triggers

It's no secret that factory triggers could be better, but most shooters don't know how easy it is to replace them.

We have an entire generation of shooters and hunters today who have probably never experienced a good trigger on a new factory rifle. With the glut of liability lawsuits in the past couple of decades, gunmakers for the most part have circled the wagons and given up on the concept of providing quality triggers on their guns. There are exceptions, but they are rare. It's far more common to open the box containing a new rifle and find the trigger takes, as my cousin Philip would say, "two men and a hairy dog to pull." I am not exactly sure how he arrived at the equation, but the point is clear enough.

I remember showing up for a deer hunt in Texas a few years ago as part of an introduction for a new rifle. My plane was late, of course, and it was nearly dark when I arrived. Our host issued me a rifle, and we headed to the range. I loaded the gun and settled into the sandbags, then pulled until my finger started to cramp. After checking the safety several times to make sure it was off, I finally called the company's PR guy over to the bench. "This gun is broken," I said. "It won't go off." His terse response: "It's fine, just pull harder."

I did and the gun went *bang*, but the bullet completely missed the target. Eventually I managed to get it sort of sighted in and even took a couple of deer with the gun, but I won't say my shooting was anything to be proud of. After the hunt the company took the gun back to the factory to have a gunsmith fix the trigger, then shipped it to me for further testing. It maxed out my trigger-pull scale, so I had to use a fishing scale to measure the let-off weight. The "fixed" trigger, the one the gunsmith had "improved," broke at 22 pounds, which was far better than when I was hunting with the gun. It's been a few years, and I understand the rifle is not selling as well as the company had hoped. Imagine that! While that gun represents the extreme of poor triggers, it's not uncommon today to find factory rifles with a 7- or 8-pound trigger pull. I have seen some improvement recently, but it's been a long time since I have tried a new factory rifle with a crisp, 3-pound trigger.

Most companies removed the ability to adjust their triggers years ago, and those adjustments that remain usually do not allow enough change to get a satisfactory trigger pull. Triggers may be advertised as adjustable, but they are often adjustable from 8 pounds down to 5 pounds—hardly

By Bryce M. Towsley



Installing a new trigger is often as easy as loosening a screw and pushing out a pin, then reversing the process. Affordable aftermarket triggers are readily available from gun supply distributors such as MidwayUSA and Brownells.

Achieving greatness in a factory-supplied rifle trigger is almost always going to require some gunsmithing. Trigger work is one of the most specialized and tricky areas you can get into. It's also one that can create a dangerous condition if you get it wrong. My advice is, if you don't know what you are doing, then don't even try.

Before you decide anything, it's important to understand the elements of a rifle trigger. There are four important points to a hunting rifle's single-stage trigger pull. First is the let-off weight. This is simply how hard you need to pull on the trigger to make the gun go *bang*. Big-game hunting rifles should have a trigger pull of about 3 pounds. Competition or varmint hunting rifles might require a much lighter trigger pull.

Next is the smoothness of the trigger pull. A rough trigger will feel like it pulls harder than it does, and a smooth trigger will feel lighter than its actual pull. One that hitches and catches as you pull it will never allow precise control. A good trigger should pull smoothly with little discernable movement, and then break cleanly. The phrase "breaking like glass" describes the crisp, clean release of a good trigger. Creep is the amount the trigger travels before it releases. The best rifle triggers have little or no discernable creep.

Finally is overtravel. This is the distance the trigger moves after the sear releases. It's important because that movement occurs during a critical time when the gun is firing and can disturb the bullet impact.

While modifying and tuning a trigger is a complicated project not recommended for most hobby gunsmiths, usually replacing the trigger is simple and easy. Companies like Timney, Boyds and others offer aftermarket triggers that are well-made, affordable, fully adjustable and

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acceptable to a discerning rifle shooter. Some triggers can be adjusted enough for a satisfactory result. For example, the Remington Model 700 rifle has an adjustable trigger, and it can almost always be tuned to a very acceptable break. However, that trigger has undergone a change recently, and the result is still unknown. The truth is even the most adjustable triggers on factory rifles these days are a bit of a joke.

Yet, the single most important factor in accurate shooting is the trigger. Without a good trigger you will never be able to extract the accuracy potential from your rifle. This is particularly true in field situations. Some years back I conducted a test for speed and accuracy under hunting conditions with two rifles of every action type. I assembled a team of six shooters of different abilities, and after the smoke cleared I discovered that a lot of the common knowledge about hunting rifles was wrong. One clear point—perhaps the only clear point—that emerged was the trigger is the key element in accurate shooting. The guns that scored the highest, across the board with every shooter, were the guns with the best triggers.

I worked at the shooting events during the 1996 Olympic Games in Atlanta. This gave me backstage access to all the competitors and their coaches, and I was able to pick the brains of a lot of the top shooters. One thing rang clear:



Unlike the majority of those that come from the factory, aftermarket triggers can be adjusted to suit the shooter's preference. Although almost any knowledgeable shooter can adjust pull weight and overtravel, it is best to leave sear engagement to a professional gunsmith.

They always knew precisely when the trigger was going to break. One man was shooting a new rifle with a longer barrel than he was used to. Nobody is rock-solid still when shooting offhand, and the technique is to control the wobble and break the trigger at precisely the right time to deliver the bullet to the X-ring. With this longer barrel the bullet was exiting just a little later than with his older rifle, and the competitor was having problems keeping his shots in the center. His trigger control was so precise that a few extra moments of barrel time for the bullet was affecting his scores. You can't achieve that kind of control with a lousy trigger.

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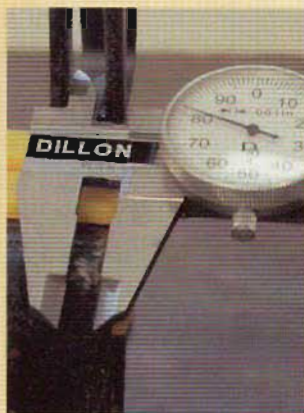
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usually very easy to install on most factory rifles. Others like Jewell are expensive, but you are going to get the highest-quality trigger available. They are all sold by gun parts suppliers such as MidwayUSA and Brownells. Often installing a replacement trigger is a simple matter of taking the action out of the stock, removing a screw or backing off on a setscrew and pulling a pin that holds the trigger group on the gun. Then reverse the process with the new trigger. Usually it's about a 10-minute affair. It varies from rifle to rifle: swapping triggers is ridiculously easy with some, while others like the Remington Model 700 are a bit trickier. I have never encountered a rifle where it was beyond the ability of any experienced gun tinkerer.

Sometimes you need to modify the stock a little bit to allow room for the new parts, as the trigger may not have the exact same external dimensions as the old trigger. That was the situation when I put a Timney trigger on my new Weatherby Vanguard in .257 Weatherby. I had to use a Dremel tool to remove a little bit of stock material in front of the trigger to allow for a slightly wider trigger housing. That caused the job to take about 20 minutes.

When installing a Timney trigger on a Charles Daly Mini-Mauser, it was necessary to make a choice between modifying the slot in the trigger guard or modifying the trigger itself, as the



In some cases, slight modifications to the dimensions of the trigger or trigger guard are required to provide clearance. A dial caliper is a handy tool for determining how much metal must be filed away from each component.



The bolt shroud on this Mauser action interfered with the Timney trigger's safety toggle, but carefully bending the metal arm with pliers solved the problem. Replacing a factory trigger is a different process for each rifle, but most hurdles involve fit and are not too difficult for the home gunsmith to overcome.



Though the author had to remove some material from the stock of his Weatherby Vanguard to allow for a Timney trigger's slightly wider housing, the process still took only 20 minutes. Care, patience and a Dremel tool resulted in a clean job.

trigger was too thick to fit through the slot in the bottom metal. I have done it both ways, but the easiest is to simply thin the trigger with a belt grinder or file until it fits. Then polish the metal and cold blue it. With this Timney trigger, engaging the safety causes a pin to pop out of the other side of the trigger assembly and it was necessary to remove a bit of wood for clearance. I also had to bend the safety arm with a pair of pliers so it would clear the bolt shroud, and I took some material from the stock to allow the safety to operate without interference. The job took about an hour the first time and a bit less on a second rifle, but the end result was worth the effort.

Every gun is different, and it would be impossible to give exact instructions for replacing the trigger on every rifle model in a magazine article. Instead, my point here is to illustrate some of the problems encountered when installing a trigger and how to deal with them. They mostly concern fitting the new trigger into the stock and trigger guard and are not very technical, but do require patience and skill.

Several years ago I bought a rifle from a family friend. It was made by Pasadena Firearms Company Inc. This 1960s-era rifle is based on a Mauser action and chambered for 6 mm Remington.

In spite of a horrible trigger with a double-digit pull-weight and a lot of creep, the gun turned in some excellent groups. I thought it showed some potential, so I ordered a new Bold trigger. Changing the trigger was a simple job. If I didn't have to modify the

trigger portion to fit inside the shallow trigger guard, I would have completed it in about 15 minutes with only a few, simple tools. The bottom of the trigger hit the trigger guard and required me to grind off about a 1/4 inch from the bottom of the trigger and reshape the end. The fully adjustable Bold trigger was easily set to a crisp, clean, 3 pounds. The gun shows a definite preference for 100-grain bullets, and it will produce 1-inch groups at 100 yards. Handloads further reduced them, and in the end this "clunker" shot like a finely tuned varmint rifle.

Most adjustable triggers have three or less adjustments. One will be the tension on the trigger-return spring. This is the spring that pushes the trigger back into position after you pull and release it. Each time you pull the trigger you are pulling against this spring. The idea is to have the minimum amount of spring tension needed to return the trigger into position so you are not pulling against more pressure than is necessary. If you set the spring too light, the trigger will not reliably return to position for re-cocking. It might be fine in the shop, but out in the cold, wet, dirty, cruel world,

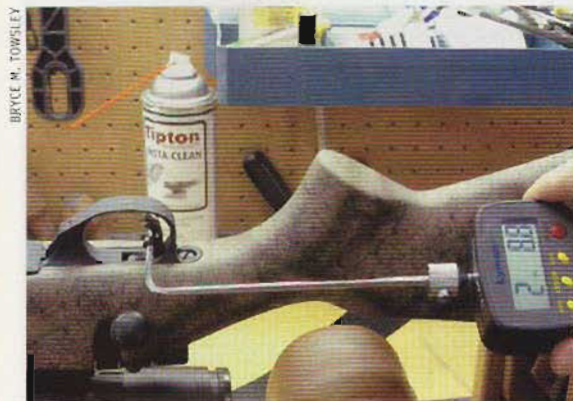
it could stop working just when you need it most. It's always best to leave at least a little cushion of insurance in the trigger-return spring tension. Adjust for the minimum

of spring tension needed to return the trigger to position, and then add another turn of the screw to be sure.

Some triggers have a sear engagement adjustment. This one is very dangerous to mess with, because if you get it wrong it can result in an unsafe rifle. It's best to leave it alone, or have a good gunsmith make any adjustments to it.

You can adjust overtravel on many triggers, but should leave this step for last. After all the other adjustments have been made, tighten the overtravel adjustment screw until the gun will not dry fire. Then back it off while holding pressure on the trigger until the gun dry fires. Now turn the screw an additional quarter to half turn and lock it down. Check several times to make sure the gun will fire. If it does not, add another half turn on the adjustment screw.

Changing and adjusting a trigger is almost always easy and fast, and it will result in a far better trigger pull. Even the first time, you will probably have less than an hour in the job, regardless of the rifle. S



A clean, crisp trigger will improve the accuracy of any rifle. For big-game hunting, a trigger pull of about 3 pounds is ideal.

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