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Any movement while the bullet is traveling downbore can change its point of impact.

Understanding the GO SWITCH

By Richard Mann

What is creep, takeup and overtravel, and why do they matter in a trigger?

The trigger is the most important link on any hunting firearm. It is, after all, the thing we pull to make the gun go bang. Not every hunter knows how to properly use a trigger, though, nor do they understand how this important mechanism works.

Triggers vary a great deal in feel and function, but not in purpose. When pulled to the rear, they all ultimately release a sear that allows a hammer to fall or a firing pin to be released.

Explaining how to pull a trigger is difficult because it involves feel. Demonstrating trigger pull is a bit easier. Take a push-button pen and hold it between your thumb and middle fingers. Now, place the index or trigger finger on the button. The goal is to push the button completely without moving your hand. It's harder to do than you might

think, but demonstrates how a trigger should be pulled: deliberately, but with care.

It's important to understand trigger movement and the terms to describe it so you'll better know how to evaluate and use one. The common trigger terms are takeup, creep, pull weight and overtravel.

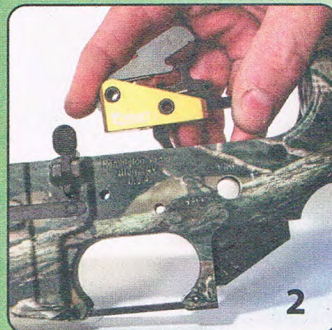
Takeup

Takeup describes the initial movement of a trigger before resistance is met. Both single-stage and two-stage triggers can have takeup, but with a two-stage trigger, you'll feel some resistance, as much as half the pull weight during takeup.

With a single-stage trigger, takeup is generally very light. This is undesirable for most shooters. A good single-stage trigger has no takeup.



1



2



3

1) Mil-spec triggers for AR-15s are notorious for their creep, inconsistency and rough feel. Serious shooters replace them with aftermarket triggers. 2) A new spring is sometimes all that's needed to improve the feel of a factory trigger. 3) Timney's drop-in trigger for the AR-15 provides a smooth and consistent, creep-free go switch.

Pull Weight

Pull weight describes the amount of pressure that must be applied to a trigger to release the sear.

Pull weight on hunting rifles can vary a great deal. Shooters often argue about which pull weight is best. Since we are talking about feel, though, opinions on trigger pull are subjective at best.

A good place to start is a trigger pull no more than half the weight of the rifle. Imagine how hard it would be to apply 8 pounds of pressure to a 7-pound rifle without moving it.

A good trigger is adjustable so you can tune the pull weight so it feels right to you. Some shooters like a very light pull weight, while others prefer more resistance.

Based on my experience, a 2- to 2½-pound trigger is as light as anyone needs on a hunting rifle, especially if gloves are likely to be worn. If the trigger has no takeup or creep and minimal overtravel, you will not be able to tell the difference between 2.5 to 4.5 pounds of pull weight unless the rifle is very light.

Creep

Most common in factory triggers, creep is the movement of a trigger after takeup but prior to sear release.

Creep is why many hunters opt for an aftermarket trigger or take their rifle to a gunsmith to have the factory trigger tuned.

You can have a trigger with very minimal creep and still shoot with precision as long as the creep is smooth and consistent.

During creep is where you'll feel roughness and inconsistency. This is due to the tolerances with mass-produced and inexpensive parts that make up many factory trigger mechanisms.

Overtravel

Probably the most misunderstood aspect of a trigger, overtravel is the movement of a trigger after the sear has been released. Few triggers have zero overtravel, but a good trigger will have very little or an almost imperceptible amount of it.

Why is overtravel so important? Bullets sometimes exit rifle bores faster than 3,000 feet per second. Any movement of the trigger while the bullet is traveling downbore can influence bullet flight.

The flight time of most bullets through a rifle barrel is 1.0 to 1.5 milliseconds. For most rifles, the lock time — the time from sear release until primer ignition — can be five times as long. Any movement of the rifle prior to the bullet exiting the barrel alter the point of impact.

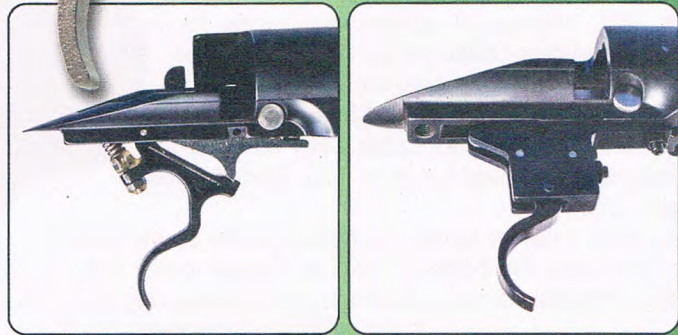
Due to the higher force imparted on the trigger when it stops, a heavy pull weight exaggerates the effects of overtravel.

Consistency

Consistency is the most important aspect of any trigger. When I was young, I had a Marlin Model 782 .22 Magnum.



Most aftermarket drop-in triggers have screws that allow the user to adjust pull weight. Make sure you follow the manufacturer's instructions when doing this.



The factory trigger on the Winchester Model 70 rifle (left) is simple, and most gunsmiths can adjust it for reliable and safe operation. A drop-in trigger (right) is an alternative fix.

I shot thousands of rounds through this rifle at targets and while hunting. The trigger was atrocious, with a pull weight as heavy as 10 pounds, but it was consistent. I shot that rifle enough to be accurate with it, despite the trigger.

Consistency is why aftermarket trigger companies are in business. It's also why manufacturers are putting better triggers on hunting rifles. I'd rate most new triggers as okay, and some as excellent, but you'll still see inconsistency from rifle to rifle.

Trigger Safety

Whether you have a factory trigger or an aftermarket model, don't tweak it in ways not recommended by the manufacturer. Improper trigger adjustment can create an unsafe situation such as the rifle firing when the bolt is closed or when disengaging the safety.

Some safeties block the trigger, some block the sear and others retard the firing pin and block the trigger. Arguments abound about which is best, but all can fail when the trigger's not properly adjusted.

At the end of the day, you need to a trigger you can trust to make the shot. My advice is, don't learn to deal with a bad trigger. ⊕