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Hoffman Tactical

Dear Mr. Hoffman,

This letter serves to explain the results of our examination and testing of your Super Safety, which you recently submitted to us.

The Super Safety is a device which replaces the safety selector on AR15 pattern firearms. It employs the rearward movement of the bolt carrier to force the trigger into the reset position, and prevents the trigger from being held to the rear by the shooter during the cycle of operation which occurs between the firing of two successive shots.

This reset allows the shooter to pull the trigger again for a follow up shot, if desired, without fully-automatic fire occurring.

The Super Safety is comprised of two parts, the *Cam* and the *Lever*. The cam replaces the internal section of a conventional safety selector and interacts with the trigger. The lever interacts with the bolt carrier of the firearm and is connected to the cam via a dovetail slot on the topside of the cam, so that the lever can transfer torque to the cam.

Besides the safety/selector switch, the AR15 fire control group consists of the hammer, trigger, disconnect, two pins, and three springs. These parts remain unchanged, with the exception of slight grinding and polishing of the top surface of the tail of the trigger, to ensure that the cam rides smoothly over its surface.

The cam has three positions. *Fired, Ready, and Reset.*

1. The Ready position: The firearm is in battery, and the trigger is in the unpulled position.

2. The Fired position: When the trigger is pulled, the top of the trigger-tail bears against the camming surface of the cam, forcing it to rotate forward into the fired position.
3. The Reset position: When the bolt carrier moves rearward, it forces the lever to the rear, which in turn rotates the cam rearward into the ready position, thereby forcing the top-rear of the trigger-tail down. This resultingly forces the trigger itself into the forward "reset", or unpulled position. At this point, the trigger cannot physically be pulled to the rear into the fired position due to the cam holding the top-rear of the trigger tail down.

Order of Operation

Operation begins with the hammer cocked and the firearm in battery.

1. The trigger is pulled by the operator. This allows the hammer to fall. The cam is forced into the fired position by the tail of the trigger.
2. The hammer strikes the firing pin. The firearm is discharged, firing a single shot. The bolt carrier resultingly moves rearward.
3. As the bolt carrier moves rearward, it forces the hammer down and to the rear. The hammer resultingly catches on the disconnecter sear.
4. As the bolt carrier continues rearward, it pushes the Super Safety lever rearward. This causes the cam to rotate rearward, forcing the trigger into the reset position.
5. The bolt carrier reaches the end of travel and then begins to move forward. The cam remains in the reset position, preventing the trigger from being pulled.
6. As the forward-moving bolt begins to lock into battery, the lower-rear portion of the bolt carrier moves the Super Safety's lever forward. This action rotates the cam to the ready position as the bolt carrier completes its forward movement. Only now can the trigger be pulled again to fire another shot, if the operator chooses to do so.

Test firing was done, using over 200 rounds of Federal brand ammunition at the Wyoming Antelope Club Range in Largo, Florida on August 30, 2022. I note that while the Super Safety does not employ the conventional rotating, manual safety lever, the cam can be pushed to the right (Fire position) or left (Safe position), and operates as a cross bolt safety button.

Firing was done on 2 different AR15-type rifles provided by Hoffman Tactical. One used a V3.1 Super Lower designed and privately manufactured by Hoffman Tactical, and the other used a conventional PA-15 Multi lower made by Palmetto State Armory, serial number SCD045370. Each rifle was equipped with a Super Safety. Both were conventional AR15-type lowers equipped with conventional and unmodified internal firing controls, and there were no modifications to either lower..

Throughout firing, the firearms were found to operate as conventional semi-automatic firearms, firing only one shot for every pull-function of the trigger. No full-automatic fire occurred.

During the rapid firing of a number of full 30 rd. magazines, which I fired as rapidly as I possibly could, there were no instances of "hammer-follow".

The term "machinegun" is defined at 26 U.S. Code 5845(b);

"The term "machinegun means any weapon which shoots, is designed to shoot, or can be readily restored to shoot, automatically more than one shot, without manual reloading, by a single function of the trigger. The term shall also include the frame or receiver of any such weapon, any part designed and intended solely and exclusively, or combination of parts designed and intended, for use in converting a weapon into a machinegun, and any combination of parts from which a machinegun can be assembled if such parts are in the possession or under the control of a person."

Multiple attempts were made to see whether the firearm would fire double shots by pulling the trigger less than completely to the rear, and by attempting to over-power the forced reset of the trigger. I found it impossible to defeat the forced reset, and the trigger was forced into the reset position after each shot fired, regardless of how hard the trigger was held to the rear while firing a shot. At no time did the firearm discharge more than one shot per two trigger functions while doing this. These are the same two function which occur in every semiautomatic AR15-type firearm which is not equipped with a Super Safety.

There are two possible failure modes which will result if the Super Safety is modified or damaged:

- Failure of the trigger to fully reset. This can occur if the lever breaks or if the cam wears. The firearm will continue to operate, with two functions of the trigger per shot fired. However, the Super Safety will not reset the trigger as was intended, and the operation will rely on the force of the trigger spring to reset the trigger.
- Dead hammer: This can occur if the shooter is able to fire successive follow up shots faster than the cyclic rate of the firearm, or if the cam wears. The hammer then falls before the bolt is fully into battery, leading to "hammer follow", which results in a failure to fire.

Note that these failure modes are not unique to the Super Safety and can result from other parts in the Fire Control Group failing, with or without the Super Safety present.

In summary, it is my professional opinion that the Super Safety did not perform in any way which would classify it a firearm as defined in either the Gun Control Act of 1968, nor the National Firearms Act of 1934.

Daniel O'Kelly

