

# My Gun Won't Shoot

Software Version 3.1.0    March 17, 2011)    Document Rev: None

## **Question: Is there a process to help me learn why my gun won't shoot?**

Yes, if you will follow this document through you will be able to determine what is wrong.

## **General Information that you should know:**

A feature was implemented in the early days of the Version 3 product which gave the system the ability to determine if the infrared light on the wall could be unwanted light in the room.

Here's how it works. The digital camera, which is filtered to watch for infrared light, sees the infrared light in pixels. The gun laser produces a very sharply focused beam, between 6 and 10 pixels (as seen by the camera).

At the moment infrared light is seen, the software checks with the camera to determine how many pixels of infrared it has seen. If the camera sees more than 40 pixels, the assumption is made the infrared light is not coming from your gun laser, and must be unwanted infrared in the room. Therefore, it disregards the infrared light and doesn't send the "shotgun" sound to your speakers. As the shooter you experience a misfire; you have pulled the trigger, but a shot didn't take place. The problem, in this example, is a bad room.

## **First, understanding how to use the Camera Exposure Value:**

The camera exposure value is used to increase or decrease the sensitivity of the camera to infrared light. Set at "0" the camera is blind. Set at "128" it is as sensitive to infrared as it can be.

It is best if you run your DryFire system with the "Camera Exposure" set at "100" (this can only happen if your shooting room blocks out all outside light and the indoor lights in your room are fluorescent). But, don't get the idea that you can't set the value lower. The exposure control allows you to eliminate some of the unwanted (any infrared that isn't coming from the Muzzle Laser in your gun) infrared by lowering the exposure value. But, when you do this, keep in mind there is a point at which it may make it difficult for the camera to see the infrared beam coming from your Muzzle Laser. This means there is a balance to achieve. If in the process of trying to mask out the unwanted (bad light) you lower the camera exposure value too much, your camera will not be able to see the infrared beam coming from your gun laser. If you find it necessary to reduce the value below 50, you need to fix your room.

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## **Second, avoid Outdoor Light:**

The worst enemy of DryFire is natural light. You might ask why? Because with natural light present on your shooting wall the DryFire camera can't tell the difference between the spurious infrared light scattered about your shooting wall and the laser beam produced by the Muzzle Laser. Therefore, do everything you can to make your room perfect. Cover all the windows and doors to prevent any outdoor light from reaching your shooting wall.

## **Third, choose you Indoor Lighting carefully:**

The second enemy of DryFire is indoor lighting. All indoor lights produce some amount of infrared light. Fluorescent lights produce the least and therefore are the best. If you are using incandescent bulbs, you should consider replacing them with the new screw-in fluorescent bulbs.

## **Fourth, you could have a Defective Gun Assembly:**

With the Trigger Switch plugged into the Red Trigger Box and the Muzzle Laser plugged into the Red Trigger Box, depress the Trigger Switch and make sure the Red LED on the bottom of the Red Trigger Box flashes.

**If it doesn't flash**, remove the Trigger Switch, which will expose two small square contact pins in the bottom of the Red Trigger Box. Take a small screwdriver or piece of metal and short the two pins together. This action simulates the trigger switch you have removed. If the Red LED now flashes every time you short the two pins together you have proven your Trigger Switch is bad and needs replacing.

**If it doesn't flash**, replace the batteries and repeat the test. If the Red LED still doesn't flash, you have a defective Red Trigger Box and it will need to be replaced. Continue with the next step.

Replace the Red Trigger Box with the Acoustic Trigger Box. Before the Acoustic Trigger Box will work, you must plug the Blue Jumper in the place where the Trigger Switch plugged into the other Trigger Box. The Blue Jumper electrically connects the batteries to the microphone/amplifier inside the box (it is the ON/OFF switch). To check the operation of the Acoustic Trigger Box, simply tap the magnet (the magnet is bonded to one side of the Acoustic Trigger Box) with the handle of a screwdriver. The noise made by tapping will be picked up by the microphone/amplifier and in response, a pulse of energy will be sent to the Muzzle Laser and the Red LED on the bottom of the Acoustic Trigger Box will flash.

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**If it doesn't flash**, replace the batteries in the Acoustic Trigger Box and repeat the test. If the Red LED still doesn't flash, you have a defective Acoustic Trigger Box and it will need to be replaced.

**Assuming you have determined that one or both of the Trigger Boxes are working**, the following process will allow you to determine if the Muzzle Laser is generating an infrared laser beam every time the Red LED on the functional Trigger Box flashes.

Because infrared light is invisible to the human eye (or almost invisible) you must do the follow to see it. Find a wall that is painted with a light color. Make the room very dark. Take your gun to the wall. Hold the muzzle of your gun, with the muzzle laser installed, about 1 inch from the wall. Point the gun at a slight angle to the wall so you will be able to see the infrared laser beam strike the wall. In a very dark room you will be able to see a reddish flash on the wall every time you fire the laser. It will be very faint, so watch carefully. The diameter of the reddish laser flash (on the wall) will be about 1/8 of an inch in diameter.

**If it doesn't flash**, your muzzle laser is defective and will need to be replaced.

## **You may have a defective Camera:**

Although it is possible for the camera to be bad, in five years of maintaining DryFire systems, we have not had one bad camera. Therefore, even though it is possible, it is not likely.

## **Your room is at fault:**

At least 95% of the time a customer calls with a "Gun won't shoot" type malfunction it will end up being the room. One method of proving it is your room, is to wait until after dark; then start your DryFire system up, get everything ready to shoot an alignment shot (including getting the laser dot on the wall in front of you), turn out the lights, mount your gun and pull the trigger. If the system is now working you will hear the sound of a shotgun blast coming from your computer speakers. If your gun now shoots, you have proven it is the lighting conditions in your room. Either daylight coming in through a door or window or it is because of your room lighting (type of lights being used).

**And finally, if you haven't been able to determine the source of the problem, call DryFire USA 1-877-357-1485.**

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