

# Patterning Board Guidelines

By Richard Lynch

There are two main reasons for using a Patterning Board.

The most frequent use is to learn where your shotgun delivers its pellets relative to where you were "aiming". This is called the "Point of Impact" (POI).

Another reason is to check the performance of different chokes and ammo combinations in order to determine the optimum pattern size and density for your intended purpose.

## WHEN IS THE USE OF THE PATTERNING BOARD APPROPRIATE?

- When your gun fit and gun mount is consistent enough to put your eye in the same place every time you mount the gun.
- When you have made a change in gun or equipment (ammo, choke, comb, rib, bead, length, etc.).
- If you are not breaking targets that you were positive you were "right on".

## WHAT IT IS.

A shotgun patterning board is a flat surface, usually about 4 X 4 ft. square set up with the center of the board about 4 to 5 ft. high. The board is oriented to squarely face the shooting positions which are in a line directly away from the board, about 25 yards to as far as 50 yards away. (The distances are not set in stone; you want to pattern your gun at the distance at which you will be hitting the target.)

In many cases the patterning board is steel plate and it is coated with grease applied with a paint roller. Prior to shooting, the grease is spread with the roller. The impact of the individual pellets can be seen in the grease, then the roller is run over the board to make ready for the next series of shots.

A smudge is made in the center of the freshly rolled board in order to provide an "aim point".

There should be an object at ground level under the center of the patterning board that can be used as the beginning focus point for your vision (see step #5 below). An empty shell box works well for this.

A patterning board may be made of other materials, and cardboard or paper may be used to show the pellet impacts.

## ---CAUTION---

**Use lead shot only.** Steel shot will bounce back from a steel patterning board and you can be guaranteed that you will be peppered with your own shot. If you are lucky, the worst that will happen is that you will look like you have the chicken pox.

Everybody involved in these exercises must wear safety/shooting glasses.

## POINT OF IMPACT METHODOLOGY AND INFORMATION

Learning your shotgun's POI is valuable information. It will help in the following instances.

- You will learn if certain chokes change your gun's POI.
- You will learn how vest or clothing changes affect your gun's POI.
- You will learn how different ammo gives different results.
- You will learn the density of your pattern with different gun/ammo/choke combinations.
- You can make adjustments to your gun to bring the POI where you want it based on your learned "sight picture".
- You may be guided in discovering gun mount issues that are causing inconsistent results.
- It will help tell you what items/issues are not factors in your situation.

### HOW TO DO IT.

#### In general;

No action should be taken and no changes made on the basis of just one shot. Information from at least three confidently directed shots should be used before any conclusions are reached.

Shoot from the distance at which you expect to hit your target. For American Trap from the 16-yard line, most targets are shot between 30 and 40 yards. International Trap (bunker) first shots are 30 – 35 yards and the second shot is about 35 – 45 yards. For Skeet, consider 25 yards to be your distance for POI testing.

The idea is to make an accurate shot at a point in the center of the board using your normal shot routine. The gun should be mounted as usual, sight should be taken at the aim point in the center of the board, and the gun should be fired without unduly fine aiming.

#### In detail;

1. There should be an object such as an empty shell box on the ground under the center of the patterning board.
2. Position the shooter at least 25 yards away with his natural point of aim at the center of the board. (the exact distance determined by the distance at which the target will be engaged)
3. Load one shell, close the gun and take the safety off.
4. With eyes closed, have the shooter mount the gun to the shoulder so that it feels comfortable. Make sure this is done without opening the eyes.
5. Now that the head is comfortable on the stock, open the eyes and point the gun's barrel at the shell box. Make sure there is no adjustment of the head on the stock once the eyes are opened. The head must remain in the "eyes closed" position.
6. With the gun pointed at the shell box, shift the eyes to the mark in the center of the patterning board. Do this without moving the head in relation to the stock, shift eyes only.
7. Now, with eyes locked on the center of the board, slowly raise the barrel toward the top of the board. Eyes must be kept on the center mark while the gun is moving. As the barrel touches the center mark, pause at that point and fire the shot.
8. Repeat Steps 3 – 7 two more times so there are three patterns on top of each other on the board.

### **Common misuse of the patterning board**

- Adjusting the head after you open your eyes (to get the right “look” down the barrel)
- Aiming like a rifle – shooting from a rest
- Taking too few shots (sometimes just one)

If you are satisfied that your three shots were reasonably directed at the aim point, the next step is to examine where all the pellets hit.

First, examine the pattern to see if it is centered right-left by drawing a vertical line through the center of the aiming point and note where the pellets struck. If the pattern is not centered, go through steps 3-7 for three more shots. Repeat this process, making adjustments to gun fit, gun mount, and eye placement until the pattern is reasonably centered right-left.

If the pellets are to the left of the center you must move the head/eye (and the stock) more to the right so that the impact moves to the right. The opposite is true if the pattern is to the right of the aim point.

When the right-left issue is solved, the next series of three shots should be evaluated in relation to a horizontal line through the center of the aim point. Taking all the pellets of three good shots into account, determine the percent of pellets above this line and the percent below the line. This will give you a good idea of your gun's Point of Impact.

Knowing your gun's POI can lead you to understanding what your sight picture has to be in order to be successful. This knowledge can also be used to modify your gun and/or equipment to make your gun have a POI that works with your established and ingrained sight picture.

## **PATTERN SIZE AND DENSITY METHODOLOGY AND INFORMATION**

Your shotgun pattern should be as large as possible and still have sufficient density to break all targets that are within the pattern.

As the shot charge from your gun travels downrange the pellets begin to spread out. Tighter (full) chokes are meant to keep the shot grouped together tighter and longer, and less choke (skeet, cylinder) allows the shot to spread out faster. Regardless of what choke you are using, as the shot gets further from the gun it spreads out. You want to know that at the distance you are likely to hit your target, you are giving yourself the greatest spread possible while still having your pellets close enough together to break any target within your pattern.

At some point, determined by distance and the tightness of the choke, the pellets in your pattern will be spread so far apart that the gaps between the pellets will be so large that a target could be inside the pattern and not be hit by any pellets.

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## **HOW TO USE OF THE PATTERN BOARD TO CHECK PATTERN SIZE AND DENSITY**

For determining pattern size and density the results are checked after each single shot, not after three shots as when testing for POI. However, no decision should be made based on only one shot. Several individual shots (at least three) with a particular ammo / choke combination need to be measured and analyzed before any conclusions are reached.

Shoot from the distance at which you expect to hit your target. For American Trap from the 16-yard line, most targets are shot between 30 and 40 yards. International Trap (bunker) first shots are 30 – 35 yards and the second shot is about 35 – 45 yards. For Skeet, consider 25 yards to be your distance.

Shoot once at the aim point in the center of the pattern board. Note and record the general diameter of the shot pattern. Then compare the density of the pattern to the size and shape of your target. Do this at least three times, rolling the grease between each shot.

Do the exercise with different chokes until you are satisfied that your pattern is dense enough that if you do your part in putting the pattern on the target, there will be no pellet gaps big enough to let the target escape. However, at the same time, you do not want the pattern so dense that you are handicapping yourself with a pattern diameter smaller than necessary.

### **IMPORTANT THINGS TO REMEMBER**

- Clay targets do not typically give the shooter the benefit of full diameter presentation. Most of the time we are trying to hit a target that is flying edge-on to us.
- Just one pellet is not enough to reliably break a target. Your pattern analysis should consider three pellets per target profile as being necessary for consistent target breaking.
- Properly maintained barrels and chokes are critical. Buildup of powder residue and streaks of plastic wad material must be constantly and consistently removed from barrels and chokes.
- Not all chokes are created equal. Identically labeled chokes from the same manufacturer may not give identical results.
- Different brands of ammo will give different results, even if the nominal specs. are the same.
- The general progression of chokes, from widest to tightest is: Cylinder – Skeet – Improved Cylinder – Modified – Improved Modified – Full.

18 March 2011