

Shot String

Dear Technoid:

I can't remember the particulars on Brister's work, but what do you think of an experiment where the shotgun is swung through an arc and the paper downrange is stationary. This way I wouldn't have to drive the tractor towing a piece of paper on a boat trailer while you shoot at me.

R.

Dear R.

Good theory, but it is a commonly held misconception that a swinging shotgun hard can spray pellets like a garden hose. True, a well swung shotgun often hits the targets, but that is because many shooters miss by stopping their swing. Paying particular attention to the swing is often a great improvement, but it is not due to a better pattern.

Think about it. I tried this experiment once by shooting from a bluff down into a lake, but I'll bet it has been tried on the sides of barns all over the country. Select your pattern surface (lake or barn) and swing the gun as hard as you physically can as you fire. You will note that the pattern is its usual normal ragged circle. There will be no discernable elongation.

Here is why: When the shot is traveling down the barrel, no amount of swinging can impart more lateral velocity to one pellet more than another. All pellets are being affected equally. No spraying can occur when every pellet is subject to the same force. Obviously, once the pellets have all left the barrel, no amount of gun swinging can have any affect.

The only time that any possible "garden hosing" spreading out of the shot can occur as the gun is swung is when some of the shot is left in the barrel and some is outside. Clearly this will spread the shot out. This does indeed happen with a rapidly swung gun, but the amount of spreading out is so small as to be almost impossible to measure.

It has to be. Look at the numbers. While inside the barrel the shot strings out very little, if at all because it is being pushed from the rear by the wad. An in barrel shot column length of two inches would be considered quite long. It is probably less than 1/2 that amount. The shot leaves the barrel in excess of 1200 feet per second (closer to 1300 fps, the 1200 standard measurement is taken at 3 feet after most shot has lost about 100 fps). Even if the gun is swung rapidly, the lateral muzzle speed of the swing could not approach 60 mph (88 fps or 1056 inches per second). A 2" shot column traveling at 15,600 inches per second (1300 fps) is part in and part out of the muzzle for only .000128 seconds. During this time the muzzle will move laterally at 1056 inches per second for .135". This tiny amount of muzzle movement during the shot string's vulnerable period is not enough to cause an oval shaped pattern on a stationary piece of paper.

So, a nice swing on your targets will help you break birds, but not because it spreads you pattern out.

Regards,
Bruce Buck
Shotgun Report's Technoid