

Shotgunner's Talk

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We all know what a shotgun shell looks like when it goes into our Shotguns and we know what it looks like when it comes out after it is fired. We also know what happens inside the gun and what happens to the shot as it exits the muzzle.....but have we seen actual pictures of shot as the wad is separated from the column? High speed photography is amazing.

The photograph, on the left, shows the shot leaving the muzzle, the leafs of the wad are still folded around the shot. Prior to making its exit, the column was pushed through the gun's forcing cone, through the barrel and the choke restriction. The forcing cone is the area just forward of where the shell is inserted and its function is to initially compress the wad, with the shot still inside, so that the column stays together as it is pushed through the barrel. The choke area is at the muzzle. It is either a changeable choke tube or a manufactured machined cut to determine whether the gun is full, modified, cylinder of somewhere in between.

The photograph, in the center, shows the column still near the muzzle but the leafs of the wad are starting to open. The wad opens because the column exits the muzzle at some 1200 feet per second and it is like a parachute in the air stream. Pressure from the muzzle, caused by the discharged shell, is released to create the report.

In the third photograph, the leafs are open completely, allowing the shot to fly free. The shot column is already starting to spread. The leading pellets will travel faster than the trailing pellets because the leading pellets are in front for the trailing pellets to bump into. The result is a shot "string" with the leading pellets staying together and the trailing pellets being slightly bounced to one side of the flight path, or the other. All of that results in a pattern at the target area; the diameter and shot density of that pattern depends primarily on the choke area at the muzzle.....of course there are other minor factors involved in creating the shot pattern.

We, that do our own reloading, are more concerned about those other factors. The type of powder, primers, wads and hulls used are important; the powder because the type and amount will determine the internal pressure inside the shell to start the whole process; the primers because we want proper firing of the shell; the wads will determine reaction to the air and speed at which it will separate from the shot column; and the shell because of the quality of its construction and its dimensions. (The latter is the least important. The type and amount of powder can adjust the difference.) What reloaders have to keep in mind is to strictly follow proven recipes for the different hulls, powders, primers and wads (wads being the least important). Those of us that use factory loads leave all of the loading to machines and we learn to trust the manufacturers of our favorite brand.