

## DONUT PATTERNS

Dear Technoid,

Is it possible to have a pattern come out with most of the pellets void in the center section using a standard factory ammo and a production shotgun like Browning? One guy at our trap range was saying he is not breaking the bird sometimes when he knows his aim was good. He says his gun is shooting the donut pattern. I think he simply missed the target, but this is the second time I heard similar story.

Stanley

Dear Stanley,

The "donut" pattern ("bagel" pattern in the New York City area), is one of the six oldest excuses for missing a target. It all started because fifty years ago it was common for shotgun shells to have an over shot disk held in place by a roll crimp in the paper hull. This performed the same function as the crimp closure of today. It was often thought that this disk disrupted the center of the shot column and caused a donut-shaped pattern.

This was baloney most of the time then as it is now. Shotgun patterns are random by definition, but they do mathematically adhere to the Gaussian model of the bell shaped curve. Journee proved this with individual rifle shots and the mathematical proof also obtains for shotgun pellets. Each shotgun pellet acts as a separate incidence, but taken as a group they act in a mathematically predictable way.

That mathematically predictable way is the bell-shaped, or Gaussian, curve. What that means in real language is that over time shotgun patterns ALWAYS average hotter or denser in the center than at the edges. On average, there is no such thing as a "perfectly even" or "donut" shaped pattern. On average, all shotgun patterns have more pellets in the center.

Individual patterns can, and certainly do, fall outside the norm, but not on a regular basis. Your friend's "donut" pattern was possible, but statistically unlikely and certainly improbably over a period of time, not just the one shot.

Today certain brands of spreader loads use the theory of the old over shot card and insert a little plastic "mushroom" on top of the shot, underneath the modern crimp. The purpose is to have the heavy shot column push into the light plastic mushroom and be disrupted, thus opening the pattern. It works to a certain extent, as do other spreader load concepts.

None of these spreaders produce consistent donut patterns, because mathematically they cannot. The patterns that they produce may be more open, or open faster, but they will still have more pellets in the center than at the edges. You may have to measure outside of the traditional 30" pattern circle to notice this, but the mathematical model will hold true.

Of course, rules are made to be broken, even immutable mathematical models. Perhaps your friend has come up with something really different. That said, if he is using a fairly standard trap load, you can certainly look in askance at his donut pattern excuse.

He might, of course, be using too little choke and simply having a pattern that is too thin. Factory chokes are often inaccurately labeled. He did extensively pattern his shells and choke, didn't he? Right. Sure.

The other reason for the misses is, ahem, well- aiming error, but it would not be polite to get into that.

Regards,  
Bruce Buck  
Shotgun Report's Technoid