PATTERN DISTANCE

Dear Technoid,

It has often made me wonder why we all seem to discuss choke relative to pattern percentage at 40 yards. Since pattern expansion is not linear over distance, doesn't it make more sense to consider choke choices based upon a desired pattern percentage at the current target range?

I always enjoy your views, especially when they quite correctly agree with mine. Keep up the good work.

tom
(often in doubt, but never in error)

Dear Tom,

Obviously, great minds think alike. Pattern on the target is clearly the only thing that counts. The problem is that everyone's target is at a different distance, so forty yards was selected to provide a basis for common comparison. Forty yards was selected because it was considered the maximum practical killing distance for a shotgun back in the late 1800s when choke was invented.

Ken Eyster does a great deal of custom barrel work and each of his chokes is regulated as to a particular distance. This makes sense, but it also makes it harder to compare the performance of Ken's chokes to the competition. Not so dumb a marketing move.

Choke standards are anything but standard. It is generally agreed that chokes are to be tested at 40 yards in a 30" circle, but after that nothing is for sure. There is no SAAMI standard on choke. Warren Johnson (inventor of the Choke Chooser and a very good pattern program called SPRED) and I have spend a bit of time trying to find commonality in choke designation lists. There is no single standard that we could come up with.

I personally like to use the following as this is more or less in the middle of the accepted limits. The constrictions named will generally (often, but not always) produce the stated percentages at 40 yards with a relatively standard shell.

Name	Constriction	% at 40 yards	Best target distance
Cylinder bore	.000"	40%	15 yards
Skeet 1	.005"	45%	20 yards
Improved cylinder	.010"	50%	25 yards
Skeet 2 (light mod)	.015"	55%	30 yards
Modified	.020"	60%	35 yards
Full	.035"	70%	40 yards

Ideally, at the "best target distance", each choke should produce the same pattern (about 70%). A lot of people are surprised to see that each full choke designation change is only good for five yards, but that is the way it is.

The reason that very few ammo makers are willing to subscribe to a list like the one above is because you can easily throw it all off by shell selection. I will absolutely guarantee you that I can get a barrel with .020" (modified choke) to throw IC or full patterns just by substituting different 3 dram 1 1/8 oz #8 shells. This is why the ammo makers are reluctant to publish a list like the above.

The gun makers are in a tougher position. They have to market their chokes somehow and they are not about to admit that their modified choke will produce all sorts of patterns depending on the shell used. This confuses the average guy (including me). After all, a barrel that is stamped "modified" that throws an improved cylinder pattern isn't a modified barrel, is it. It is an improved cylinder barrel.

So, some of the choke makers just bit the bullet and stamped the name of the pattern on a choke of a given dimension and hoped for the best- the same way that solid chokes had been done for years. Some makers tried to fudge it by using asterisks and bars (Browning) or numbers (Perazzi) to designate chokes, but most just stamped the name on the tube or barrel.

Obviously, the answer to all of this is to just plain stamp the constriction measurement in inches on each choke and hope that the buyer has taken the trouble to learn what that constriction will do with the shells that he uses. The gun makers do not think that the average shooter is smart enough to figure this out, so it is back to square one.

Confused yet? Me too, but chokes are a confusing issue because there are no real absolute standards. The standard pattern testing at 40 yards into a 30" circle seems to be one of the only things that everyone (except the metric countries) agree on. It isn't good. It isn't accurate, but at least we all use it. Go figure.

Regards,
Bruce Buck
Shotgun Report's Technoid