CHOKING AN UPLAND 20

Dear Technoid.

I have the opportunity to put some personnel touches on a nice light-weight, 6 lbs., Belgium 20ga. SxS. This will be a grouse and woodcock gun. It has fixed chokes that are tighter than needed for the job, at least mod / full.

The weight fits the rule of 96 x the shot charge weight to use 1 oz. loads but I am looking at using 7/8 to ≤ oz loads. The thinking being that it will be more of a backbored 28 ga. than a 12 ga. in a 20 ga. skin.

I have read and have recommendations from Cyl. / IC to Mod. /Mod. Would the all knowing Technoid help muddy the waters on what would be a good choice of chokes?

Sincerely

Stephen

Dear Stephen,

You want muddy water? Well, stand back! If anyone can turn a perfectly simply answer into a quagmire, I can.

First of all, you have to decide on your load. Then on the chokes. In that order. Also, you'll probably want to choke for grouse, not woodcock as those will probably be your further shots. I've never hunted woodcock only. I've sort of taken the woodcock as they popped up when hunting grouse. Perhaps you are luckier in your woodcock hunting. Both birds are easy kills, but very hard to hit.

Why the load before the choke? Because patterns are simply percentages of the payload. Out of a give gauge, a given choke pretty much throws the same diameter pattern regardless of the payload. You can make the argument that lighter loads are a little tighter due to less pellet deformation. It's true, but not by much. So, if a Modified choke puts 60% of its pellets into a 30" circle at 40 yards by definition, 60% of one ounce of #7-1/2s is 350*.6 = 210. 60% of 7/8 oz of #7-1/2s is 184. 60% of 3/4 oz #7-1/2s is 157. More pellets in the pattern mean a larger effective pattern and a better chance of a clean kill. Less is less until recoil becomes a factor.

In a 6# gun the rule of 96 says that you can shoot 1 oz. Of course, the rule of 96 was meant for comfort shooting multiple driven shots, not the occasional shot offered when hunting grouse or woodcock. If your gun can handle a one ounce load in permitted pressure, I'd definitely use that when I hunted. For target practice before the season, a lighter load would be fine for both the gun and for you, but hunt with the one ounce.

Now let's talk "Effective Pattern". There are a number of formulae that you can use for this. Lowry's program, "Ballistics for Windows" does a good job. First you have to know the vital

area in square inches of a quickly departing grouse. My guess is that it's about 9 square inches. I won't argue if you come up with a different number.

According to Lowry's numbers, if you start with 350 pellets (one ounce of #7-1/2s) and put 77% of them into a 30" circle, every 9 square inch circle within a 22" circle will average three pellet hits. 5% will get none, 38% will get 1 or 2, 39% will get 3 or 4, 18% will get 5 or more. Less pellets in your starting load mean a smaller effective killing circle. Now here's an interesting thing: any percentage from about 75% to 90% gives you about the same 24" killing circle. Greater or lesser percentages than 75% to 90% will make smaller effective killing circles.

So, peering through those muddy waters we now can see that 1) you want to throw all the pellets possible and practical (one ounce), and 2) at what ever distance you decide to shoot your birds, you will want to get 75% to 90% of the shot into a 30" circle.

The next question is how far away do you normally take your birds? For most upland situations, my numbers seem to be first barrel at 20 yards and second barrel at 30 yards. Your numbers may vary. 30 yards is an awfully long shot on bonasa umbellus. If it were only grouse and woodcock in heavy timber, you might feel more comfortable setting your gun up for 15 and 25 yards. I always like the second barrel to have ten yards more reach than the first. Again, you may prefer something else.

If you decide on 15 and 25 yards, that's close enough so that you might safely switch from #7-1/2s to #8s. Personally, I use #6 on ruffed grouse. I find that with #6s I just go over and pick them up. With other shot sizes the dog and I have more looking about to do. I've also had good luck with hand loaded #7s. A pal of mine uses only #9s and also does well on grouse and obviously on woodcock. Your pick. But for the sake of argument, I'll stick with #7-1/2 here.

The advantage of chokes for 20 and 30 is that your gun would also be quite useful for pheasant, chuckars and huns should you decide to pursue them. 15 and 25 is a bit short for those birds in the open. Again, it's your call. And remember, 90% is just as effective as 75% as far as the size of the killing pattern goes.

So, let's just say that you decide on setting your barrels up for 20 and 30 yards with 1 oz of #7-1/2 shot. What chokes will give you a 75% to 90% pattern in a 30" circle at 20 and 30 yards? Aye, there's the rub.

Back to Lowry's delightful program and we'll also mix in a bit of the Pattern Density Calculator at http://www.rfgc.org/reload/pattern_density_calc.htm

Since chokes are all (except .410) measured from 40 yards, we'll have to back into our numbers. At 20 yards we want 262 (75%) to 315 (90%) of our pellets in the 30" circle. If we look at Pattern Density Calculator, you'll see that you can get these numbers with Cylinder Bore and Skeet. So, the first barrel should be cylinder bore or skeet to maximize hits at 20 yards. Skeet at 20 yards? My goodness. Who woulda thunk it?

At thirty yards, running the numbers gives us optimal pellet counts with Modified to Improved Modified. So, we want Cylinder/Skeet in the first barrel for the best possible results at 20 yards on a 9 square inch target with one ounce of #7-1/2s and Mod/Imp Mod for the same at 30 yards. So far so good.

But what are those constrictions? What is skeet in the 20 gauge? Well, Cylinder is .000" and most people consider Skeet choke to be .005", regardless of gauge. Briley is in the .005" camp, so that's good enough for me. So your first barrel should be bored .000" to .005".

In the 20 guage, Modified is generally thought to be about .015", give or take a point or two either way depending on the shell. So you'd want .015" in your 30 yard barrel.

So, after all this, I think that you might want to look at choking your 20 gauge .005" in the first barrel and .015" in the second barrel.

If it makes you feel better, that's exactly how I choked my 20 gauge FN Superposed upland gun.

And now the usual caveat. Shell selection has as much effect on pattern as choke selection. Make sure to pattern test your gun with the actual shell you'll be using to make sure you get the appropriate percentages.

Best regards,

Bruce Buck
Shotgun Report's Technoid