VELOCITY VS BARREL LENGTH AND PORTING

Dear Technoid,

It seems more manufactures are porting their barrels. Even Mossberg with their 835 Ultra Mag is in the game. My question is - what price does one pay in terms of velocity for the feature. I have heard everything from no affect, to approximately 7% reduction in shot velocity.

Second question - same subject...

What affect does barrel length have on velocity? I have heard that most of today's powers burn within the first 16 inches of the barrel, therefore shorter barrels actually increase velocity since the shot wad leaves the barrel at it maximum velocity, and is not slowed down by the greater friction a longer barrel would impart on the projectile.

Len

Dear Len,

None of my chronograph tests with standard target loads have shown porting to have any measurable velocity effect plus or minus. It SHOULD have a very slight effect, but I have not been able to measure it as the few feet per second change is lost in the usual 25 to 40 fps shell to shell variation of standard factory loads.

I have read in various sources that shotgun velocity increases from 5 feet per second to 15 fps per inch of barrel length. Most "fast" target shotgun powders (Red Dot, Clays, 700-X for example) get most (but not all) of their burning done in the first one foot plus of the barrel. That is why Browning made their original skeet "Supertube" sets 16.5" long. Savage was able to make their "four-tenner" tubes considerably shorter and still have adequate velocity. Fast powders should be in the 5 fps class.

Slower powders, such as those used in hunting loads for heavier weight payloads, develop their pressures more slowly and will be more affected by barrel length. These powders might be more in the 15 fps class.

You are quite correct in surmising that the longer barrel imposes greater friction on the ejecta, but out to at least 32" the velocity gained by permitting the powder to burn a bit longer outweighs the friction side. Obviously, there is some barrel length at which the equation would go the other way.

Best regards,
Bruce Buck
Shotgun Report's Technoid