

BARREL SELECTION: RECOIL AND CONVERGENCE

Dear Technoid:

Some members of our club are hoping that you might be able to resolve a difference of opinion. In contemplating buying a new O/U for sporting clays and trap, a member commented that the gun came with non-selective triggers with the gun firing the lower barrel first. Selective triggers were available, but at a fairly hefty additional charge.

This opened a barrage of opinions that having to fire the bottom barrel first, regardless of having screw-in chokes, would be problematic. One was a competitive trap shooter who offered that his scores at 16 yard were definitely lower when he used the bottom barrel versus the top.

The question is, assuming that there are no defects in the O/U and that both barrels have the same bore diameter and are using the same choke constriction, is there any reason, other than between the shooters head, that might account for any advantage in using one barrel over another.

Can you comment then, on the relative importance of having barrel selection available when shooting sporting clays and trap. We enjoy your great column and look forward to your reply.

Thanks.

Pete

Dear Pete,

Even if the barrels are exactly the same, there is a difference in which barrel you shoot first. You always want to shoot the lower barrel first. The lower barrel of an O/U, being set lower in the receiver, transmits its recoil straight back more along the line of the barrel. This results in less actual muzzle flip and, for many shooters, less perceived recoil.

The upper barrel, being higher above the axis of the gun, imparts more vertical movement (muzzle rise) to the gun on firing. The angles are made clearer if you were to imagine the upper barrel to be located a foot or so above the lower. With the upper barrel way up there and the stock well below it, the muzzle just has to climb on recoil.

Because the stock is solidly mounted in the shoulder, the gun will tend to pivot about that point (not about its center of mass as if the gun were freely suspended). Pivoting about the shoulder when the muzzle raises a lot still causes the stock to raise a little- right into the shooters chops! That is why muzzle flip causes increased face slap for some shooters. When the lower barrel is shot, the gun tends to recoil straight back- at least more so. In-line recoil lowers face slap for most shooters.

One final point- we stipulated that both the barrels were the same for the sake of argument. On an O/U both barrels seldom are the same. The design of the O/U WANTS to shoot the top barrel

a bit high due to the geometry described above. Proper barrel convergence requires that this tendency be accounted for when mating the barrels during manufacture. Shotgun barrels are not joined in parallel. They are actually joined to converge slightly at the muzzle. This is done to correct the tendency of the top barrel to shoot high.

The manufacturers do not always do a very good job of correcting barrel convergence. I have owned a Perazzi and several Belgian Brownings which shot the top barrel considerably higher than the bottom. These guns had not been modified and were as they came from the factory. It was just poor quality control. I have never owned an unmodified gun which shot the bottom barrel higher than the top- though many pigeon shooters just love them set like this and will grind an eccentric choke to achieve it.

Your trap shooting friend may have an O/U which shoots the top barrel high and that is why he does a bit better with it at trap, where a high shooting barrel can be an advantage. A high shooting top barrel is a quite common flaw in a production gun, but not to be desired, particularly on a gun to be used for sporting clays. Both barrels should shoot to the same point of impact.

Whenever I buy a used gun, the first test I perform during my three day inspection period is that of barrel convergence. If both barrels do not shoot to the same point of impact, back it goes. Improper barrel convergence can be cured by resoldering the barrel ribs (expensive) or recutting one of the chokes at an angle (a common, but technically unsound, fix). I just do not buy the gun if barrel convergence is not correct.

Is it an advantage at sporting clays and trap to have an O/U with a barrel selector? If the gun has screw chokes, it is probably no big asset as you can always swap chokes around to get what you want. It would be convenient though. If the gun is solid choked, and the barrels carry different degrees of choke, then a barrel selector would come in handy. You can make up almost one degree of choke either way by proper selection of shells.

Best regards,
Bruce Buck
Shotgun Report's Technoid