

The Five Elements of Gun Fit

Gun Fit is a critical component of successful wing shooting, whether you're shooting a clay target or a game bird. Gun Fit in shotgun sports can make or break a competitive shooter, as well as allow a new shooter to achieve success sooner, or, in the case of improper Gun Fit, turn them off of wing shooting completely. The Five Elements of Gun Fit are: Length of Pull, Consistent Alignment, Physical Abuse and Muzzle Jump, Balance, and Point of Impact.

Length of Pull: Length of Pull (LOP) is the measurement from the middle of the trigger to the butt stock of the shotgun. LOP is one of the most critical aspects of Gun Fit and in choosing a shotgun as it affects how comfortable the gun is to mount and handle; a shooter with a shotgun with the incorrect LOP is likely to perform poorly and not have much success, whether hunting or shooting clay targets.

There are several other factors used by professional gun fitters to measure LOP; however, a quick and easy method to check for LOP is to mount the shotgun and then measure the distance between the shooter's thumb and nose: if the LOP is correct, there should be 2-3 finger widths between the thumb and nose.

If LOP is too short, the thumb is likely obstruct the shooter's view, causing problems when trying to acquire the target. If LOP is too long, the shotgun is likely to be unwieldy and catch on clothing when the shooter tries to mount the gun.

Professional gun fitters can make adjustments to stocks to make them fit a particular shooter; however this can be an expensive service and the gun fitter will be either adding to the butt stock, or removing sections from it.

An easier, and less expensive, method to correct a too short LOP is to purchase a removable recoil pad. Adjustable stocks are also commercially available and can be used to correct too short/too long LOP.

Consistent Alignment: Consistency is the key to success in all shooting sports, and it is no truer than in the shotgun sports. The shotgun must be mounted in the same place every time and the shotgun has to align properly with the shooter's eye when it is mounted. If the eye is not aligned properly, it will be harder for the shooter to clearly see and consistently hit the target. Consistent Alignment is mostly affected by *Cast* and *Comb Height*.

Cast refers to the left or right adjustment of the comb so that the shooter's eye aligns with the front sight. *Comb Height* refers to how high the comb sits, again to make sure the shooter's eye is properly aligned. If the shooter's eye is thought of as the back sight, *Cast* and *Comb Height* are the left-right, and up-down adjustments made to ensure that the gun will shoot where the shooter is looking when they pull the trigger.

An easy, temporary way to fix alignment issues is the use of adhesive moleskin pads to build up the comb to the desired height and provide the correct amount of *Cast*.

Physical Abuse and Muzzle Jump: An excessive amount of felt recoil is called Physical Abuse; this makes shooting painful and can cause shooters to become extra sensitive to recoil, develop the habit of flinching, and to quit entirely. While several characteristics of Gun Fit can affect felt recoil, other factors include:

Gun Weight- A lighter gun will cause the shooter to feel more recoil.

Shot Weight- A heavier shot load inside the shell will cause a shooter to feel more recoil compared to a shell with a lighter load: think skeet load (7/8oz shot) versus turkey load (1.5 – 2oz shot).

Muzzle Velocity- The higher the muzzle velocity, which usually indicates a greater amount of powder charge in the shell, the greater felt recoil will be.

While a correctly fitted shotgun will reduce felt recoil in most cases, the addition of a recoil pad on the butt of the firearm can also reduce felt recoil; however, remember that the addition of the recoil pad will affect length of pull and should be taken into consideration to ensure the shotgun still fits properly once the pad is added to the stock.

Muzzle Jump is the upward movement of the barrel upon firing; excessive Muzzle Jump makes it difficult to take a second shot and/ or to transition smoothly to a second target. It can also cause pain and bruising on the shooter's cheek.

To eliminate Muzzle Jump, adjust the *Pitch* of the recoil pad. *Pitch* is the angle at which the recoil pad is attached to butt of the stock and/or the angle of the butt stock if a recoil pad is absent. Adding shims made of paper or cardboard, or using metal washers, between the heel (top part) of the recoil pad and the stock can reduce most Muzzle Jump.

Stocks can be re-cut to fit the correct angle of *Pitch* by professional gun fitters, or adjustable butt plates can be purchased commercially.

Porting the barrel of a shotgun is also a common method to reduce Muzzle Jump. Porting is when tiny holes are drilled into the barrel near the muzzle to allow some of the gases to be vented to the sides. Porting should always be done by a professional, as incorrectly ported barrels will allow shot to pass out of them, causing a safety hazard.

Balance: Balance refers to how the firearm is weighted, which will impact how the gun responds when the shooter moves to shoot at a target. Shotguns made for specific events will be balanced in a way that makes them more responsive to the type of targets being presented.

Typically, shotguns used for Trap are weighted more toward the butt end, while being lighter on the barrel end (60/40); shotguns used for Skeet and Sporting Clays tend to be more evenly balanced (50/50).

Point of Impact: Point of Impact (or POI) refers to where the shot charge is delivered in relation to shooter's point of aim. For a POI of 50/50, the shot charge would impact approximately 50% above the shooter's perceived point of aim and 50% below.

Different shells and different chokes can produce a different POI; to test for POI, a shooter should fire a minimum of 3-5 shots into a patterning board, set at the distance targets will be shot in competition,

and using the same shells and choke that they intend to use for completion. Adjusting comb height and cast will allow for lateral and horizontal adjustment of POI.

If a shooter can see flat down the barrel of the shotgun, the POI will be approximately 50/50; if the shooter can see part of the rib, the POI will be higher (ex: 60/40).

An inconsistent mount and head placement on the comb will also affect POI and cause confusion and misses when shooting, so a consistent mount is essential.

Typically, American Trap has a high POI (70/30 is common) because the targets are rising, while International Trap, because of differences in target presentation and speed, will have a lower POI (50/50 – 60/40).

POI for Skeet and Sporting Clays is typically flat, with 50/50 and 55/45 being common.