“The barrel shoots, the stock hits”
Ludwig Krieghoff

Gun Fitting Basics

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I. History of Sporting Stock Development

Early gunstocks were crude and little more than a method to hold onto the firearm. Many changes were incorporated to stocks during the time period stretching from the 15th century through modern times, with the most significant changes taking place during the 18th and 19th centuries. Firearms for game shooting as well as clay or glass target shooting were the inspiration for these changes. Drop as well as cast were found to significantly increase the ability of the shooter.

II. Proper Gun Mount

No amount of gun fitting will correct a poor gun mount. It is essential that the gun flows to the shoulder in a smooth movement which enables the shooting eye to align slightly above and center to the rib. Gun fitting is very difficult to do with a new shooter until proper gun mount is learned.

III. Eye Dominance

A critical part of gun fitting.

A. Identify the dominant shooting eye

B. Categories of eye dominance
IV. Mechanics of Gun Fitting

A. LOP or Length Of Pull
Distance from center of trigger to middle of buttstock.
The majority of men will fall into the 14 to 15-1/2” range.
In general, a relationship of 90 degrees between the forearm and the upper arm is acceptable with gun mounted to shoulder.
A gap of 2 finger widths between the base of the thumb and nose is a generally acceptable.

B. Pitch
Angle of the butt relative to the rib or bore
Typically is 4 degrees or 2” of down pitch with 5-6 degrees or 2-1/2 to 3” possible.
Less pitch may tend to make gun shoot higher and more pitch lower.
Butt-plate should come into total contact with the shoulder pocket when fitted properly.
Additional consideration may be used due to gender or body style.
Women and men with unique chest build may require additional pitch.

C. Cast
The amount the stock is set over to the right or left of the bore centerline.
Purpose is to allow a shooters dominant eye to align with the middle of the rib with little or no canting.
Typically measured at heel and toe and sometimes at “face” which is the midpoint from front of comb to heel.
More modern designs are incorporating off-set combs relative to the bore centerline which allows a shooter to align with the rib center without redirecting recoil effects.
Altering stocks thru bending or “scooping” can be useful to correct eye / rib relationships.

D. Drop
Arguably the most critical dimension; the distance from the top of the rib to the top of the front and rear of comb.
The height of the comb positions the shooting eye directly above the center of the comb to allow an unobstructed view of the target and helps establish the relationship between barrels and target.
Drop at heel positions the heel of the gun at or near the top of the shoulder. This should be established prior to the drop at comb.

Typically sight pictures will vary between a figure eight, mid bead at base of front bead, or stacked beads, both beads on the same plane.

Drop in most cases should not be greater than ¾” from front to rear of comb.

E. Gun fitting final thoughts

The purpose of this exercise is to allow a better understanding of what constitutes a properly fitted gun.

There are no absolutes, and in fact, gun fitting encompasses a number of other factors such as patterning of the barrels and recoil considerations.

A slow and methodical approach will give the best results.