

How a Medieval Sword Was Made

Blending Art and Science

The Medieval Sword represents the highest technology and art of its time - an equal achievement to the famous Gothic Cathedrals that were its contemporaries. The sword was both a technologically advanced weapon and personal jewelry, reflecting the battlefield styles and strategy of its day, as well as reflecting the contemporary fashion and status of its owner.

Sword types changed over the centuries based on their intended use, but the process of making them changed very little. Contrary to our modern idealized view of the sword being hammered out by a single smith in a lonely forge, the vast majority of Medieval swords were made by a team of craftsmen, not always in the same location.

Blade blanks were forged by specialist smiths, but a series of craftsmen from heat-treaters, grinders and polishers, to cutlers and scabbardmakers all had a hand in the crafting of a single sword. Blademaking centers were often located closest to the raw materials needed - iron and wood. Grinders, cutlers and scabbardmakers were usually in or near major metropolitan areas. It would be the rule, rather than the exception, to find a blade made in Germany (from such blademaking centers as Solingen or Passau) and the hiltwork done in Paris or London by a cutler shop.

One-of-a-kind custom-made swords were a rarity -- made only for the wealthiest of clients and highest nobility. It was far more common that a cutler would show even a well-to-do customer a selection of available blades to choose from, that would then be hilted according to the customer's tastes and ability to pay.

Much like a jeweler today who creates settings for stones mined in South Africa, the cutler was the primary contact with the customer and marshaled resources from around the known world to produce the final product. The cutler would be the one to order blade blanks with specific characteristics from the blademakers, arrange for the heat-treating, grinding and polishing of the blade, and then perform the final assembly of the sword to the customer's specifications.

Blade design was, and is, a complex science. Profile shape, distribution of mass, and edge geometry are all factors that must work in harmony to produce a blade that will excel at its desired purpose. Though most of the secret knowledge passed down from master to apprentice is lost to us, there are many tantalizing clues visible in the artifacts that remain. From ancient times, studies of nature, architecture, and art revealed that a common principle - harmonious proportion - is a universal characteristic that contributes to defining beauty and functionality. This was referred to as the Golden Section, the ratio of one relationship to another, or 1 to 0.618. Thought to be the expression of the harmony of the universe and closely guarded as a secret knowledge by the elite, these same calculations can be found in the harmonious proportions of original swords. Not only does this result in a sword that is pleasing to the eye, but this design principle has a major impact on the functionality of the sword as well. This design principle of harmonious proportions was applied in every step of the design of a Medieval sword, from the blade blank to the finished sword.

The blade blank, forged from a billet or bloom of the specified steel, would be carefully shaped to the length, profile and distribution of mass desired. The heat-treater would then take each blank and harden and temper the blade blank to bring out the properties and best performance possible from both the steel used and the distribution of mass and shape of the blade. The blade grinder's job was to carefully bring the heat-treated rough blank to its final desired shape and surface characteristics while maintaining the distribution of mass designed into the rough blank. The blade grinder would establish the final edge on the sword.

The cutler would manufacture the hilt components to maximize the performance from the finished blade. The shapes and weights of each component of the hilt would be carefully designed and expertly mounted to produce a sword that was durable, functional and still met the fashion dictates of its time.

The scabbardmaker, combining the skills of a leathersmith, jeweler and metalsmith, would be charged with creating a stylish yet functional protective sheath for the particular sword. It was important that the scabbard be strong, yet slim, allowing it to be easily worn and durable, both complementing the design of the sword and displaying the status of the owner.