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MEDIEVAL ARMOR AND ARMORED COMBAT

An Interactive Qualifying Project Report

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Abstract

This project collaborated with the Higgins Armory Museum to develop an understanding of armored combat during the 15th century. Weapons that were studied consisted of the pole-axe, spear, long sword, dagger, and hand combat techniques. The project also includes a general study of armor. The final product is an interactive electronic resource (DVD) including information on armor, weapons forms, and video demonstrations of the techniques, and a website including highlights from the project.

Acknowledgements

We would like to thank everyone that helped to make this project possible. Without the aid of some very knowledgeable people this work would be a mere shadow of itself.

This enormous project was only made possible by the tireless effort of Dr. Jeffrey Forgeng. Through weekly meetings, constant e-mails, evaluation of our techniques, and hours of revisions to our work we were able to put out this quality final product. We would also like to thank him for the use of his armor for the sequence we filmed.

The experts in specific combat forms that aided in the accurate depiction of medieval combat were invaluable. Thank you to Mark Millman (wrestling), Peter Kautz (dagger), Christian Tobler (longsword), Andy Feland, Dennis Bourbeau, Ian Johnson, Mike Lacy (all poleaxe and spear), and Jenna and Robert Reed (armor).

Lastly we would like to thank the Higgins Armory Museum in Worcester Massachusetts for the use of the Great Hall to film our armored combat sequence.

Preface

Imagine a scene from a recent motion picture as two knights fully armored square off to start a battle. They are both standing regally tall in fully polished plate armor with long glittering swords in hand. One gives a loud shout and charges wildly at the other, sword swinging in a wide arc to maim or mortally wound his opponent. He brings his sword down with all his might onto the shoulder of his opponent. What happens next? Nothing. His well armored foe absorbs the blow with a slight stagger and the fight continues. Why does this happen? The battle scene above is completely inaccurate.

Through our study we were immediately amazed by the almost universal misconceptions of how armored combat actually took place. The media of the twentieth century, mainly the movie industry, has distorted the perception of knightly combat in the mind of the general public. In the average movie, armored swordplay is wholly inaccurate, and wrestling, dagger, and staff weapons are completely left out.

Knights were protected incredibly well by their plate armor, which consisted of large metal plates covering nearly the entire body. These plates were supplemented by patches of "chain mail" that covered exposed areas such as the neck, armpit and groin. Due to the extreme protection offered by the armor, the goal in combat was to pierce the areas covered by only mail or nothing at all, the neck, the armpit, the visor opening, the sole of the foot, the elbow joint, the gauntlet opening, and the knee joint. To pierce these areas the combatant couldn't oafishly swing a sword about as in the movies (the edge being irrelevant), they would have to have one hand on the hilt and one on the blade to increase the accuracy of their thrust. Also, armored combat would not be limited to one weapon. Knights could begin their assault on horseback

using a lance, move to “hand-and-a-half” sword on foot, and then use wrestling and dagger techniques to finish the battle.

There was extensive use of wrestling during combat, another surprise in our findings. All the European masters agreed that a good knowledge of wrestling was essential for any combatant to be successful. This wrestling was just as methodical and technical as the hand to hand fighting detailed in many East Asian fighting styles. The main goal of the wrestling was to dislocate your enemy’s joints or to pin him to the ground.

In this project you will see medieval armored combat as it actually occurred. *Medieval Armor and Armored Combat* analyzes and interprets combat manuals written between 1400 and 1650. Topics of the project include a general overview of the plate armors used, techniques for the bastard sword, wrestling, dagger, and staff weapons, including poleaxe, spear, and dismounted lance. The final products of this research are written reports detailing the various combat methods and armor involved, as well as an informational html-based DVD that provides video and photographic examples of these topics. The culmination of all our studies being displayed in an armored combat sequence using techniques from each weapons form. The project also entailed the creation of a website to make a sample of our work more easily accessible to the general public.

The martial arts of East Asia have been religiously documented and passed down from one generation to the next since they were first created. They are steeped in tradition and utilize complex combinations of moves in order to incapacitate or kill one’s opponent. Many do not realize the European fighting techniques were equally complex and just as systematic. However, due to the eventual widespread use of gunpowder less emphasis was placed on hand-to-hand

combat, and its teachings were slowly forgotten in Europe. Thus the study of European techniques is a painstaking process that relies on written sources from the period.

The analysis of historically accurate armored European combat is a relatively new field of study. The project involved using recently or un-translated as well as some unpublished and incomplete texts, and contacting the few who have expertise in this area of research. Through the analysis of period manuscripts written by combat masters, and assistance of modern books dealing with the subject matter, we were able to paint a broad picture of several techniques for each weapons form. Then began the dirty work; to test that the techniques made sense physically, we actually performed them and corrected any awkward movements, then referred back to the text for final confirmation. Any questions that could not be solved in this manner were referred to an expert in the particular weapons form for review. Hardly anyone in the past few centuries has read the techniques we researched, let alone performed them. Thus, the work involved in this project is of a pioneering nature, and could potentially form the basis and inspiration for further research in the future.

Our analysis dealt nearly entirely with the work of German masters, as other sources are more scarce (such as Italian and French), or extremely complex (such as Spanish texts). The main object of our studies was the Starhemberg Fechtbuch, which deals with multiple weapons forms and is dated 1452. For the poleaxe studies we used Le Jeu de la Hache, estimated to have been written in the early 15th century. For the bastard sword other documents of particular interest were the Gladiatoria text (composed between 1400 and 1450), the Berlin Fechtbuch (post-1500), the Talhoffer Fechtbuchs (c. 1450), and Hans Czynner's Fechtbuch (1538). The dagger studies also relied heavily on the Gladiatoria text, with the wrestling section taking illustrations from it.

While this work is at the leading edge of the field of study, it is still an interpretation of very old texts. We attempted to stay as true to the heart of the manuscripts as possible, while still having it physically plausible. We encourage you to question our interpretations and expand upon the work herein. Enjoy.

Armor

By: Jonathan Longabucco

1. The knights' first type of armor

The art of war has always been at the forefront of technological advances. During the 13th century the knight was the epitome of the warrior. Knights' defenses were the most important thing during battle, and these defenses, like the art of war, had many technological changes.

The defense of these knights was called armor. And its purpose was simple: to protect the knight while in battle. The protection of knights starts with what we commonly call chain mail. Mail is believed to have been created as early as the 2nd century B.C. It changed very little over the years. Mail is made up of small metal circular rings that are either closed by rivets or are made solid. The solid mail was always found in every other row, surrounded by riveted rings. Riveted rings are connected by overlapping each side of a ring and riveting them shut. The aspects of chain that did change over the years were the thickness, size, and arrangement of the metal rings.

During the early age of knighthood which was during the 12th century, the knights wore full suits of what is now known as European mail. European mail is defined by its arrangement. Each metal ring has four other metal rings that run through it, but no ring from the same layer was connected. The connections were from the row above and below. European mail with solid rings only lasted through the 14th century. Its alternative, which was a totally riveted mail system, stayed in use as long as mail was worn. There are references to different types of mail:

flat mail, round mail, and double mail are just a few variations. (Claude, Blair European armor p20)

Figure 12.17 A mail shirt (hauberk) probably made in Germany in the mid-fifteenth century, Royal Armouries III.4675, bequest of E Archibald 1998

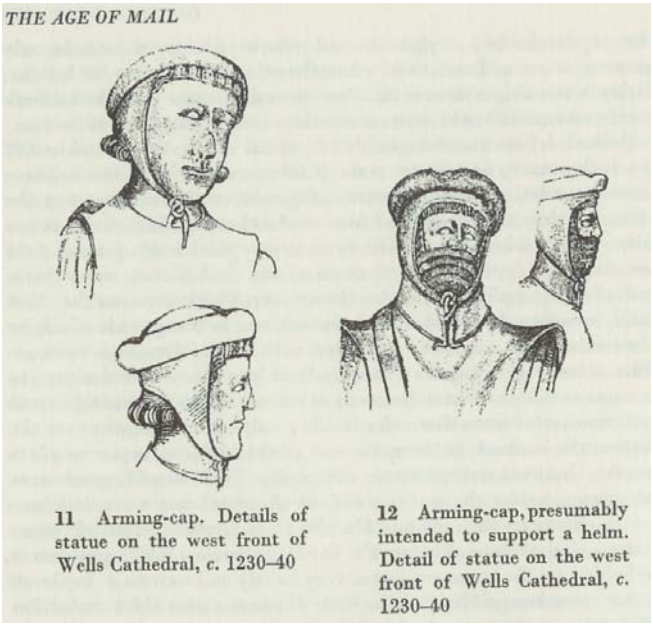
4 Effigy of William Longespée the Elder, English, *c.* 1240. (After Stothard.) *Salisbury Cathedral*

5 (*right*), **6** (*below*) Details from the Maciejowski Bible. French, *c.* 1250. *Pierpont Morgan Library, New York*

One would assume that some type of padded undergarment was worn but there are some cases that show that this was not always true. In these cases the only thing the knight is shown wearing is a knee length colored shirt with tight sleeves. The general names for undergarments were the aketon, pourpoint and gambeson. The aketon was a plain quilted coat usually with a high rigid neck, and pourpoint was a general term covering quilted defenses. The gambeson however was, usually made of a richer material and decorated with the knight's coat of arms. This fact makes many believe that the gambeson was sometimes worn as a type of surcoat, or on its own as a type of defense. There is also evidence that shows the gambeson worn over the aketon. From reading I believe that the gambeson was probably what the knight wore when not

suited up in his armor. This would allow people to still know who he was and respect him as such. Claude Blair believed that these three words were used very loosely. The most common of these terms is aketon so we will follow with this term. (Claude, Blair European armor p32-33)

The mail shirt, also known as the hauberk, was usually worn with a coif, a close-fitting hood that leaves space only for the eyes and nose area. The coif is sometimes made of fabric, which probably matched the aketon under the hauberk. In other instances the coif was made of mail that was sometimes connected to the hauberk. The coif is later also known as the arming cap. The legs were protected by chausses, which were mail leggings, and sometimes were covered by gamboised cuisses after the mid 13th century. The hands were some times covered by mufflers, which was an extension of the mail from the hauberk over the back of the hand with a separate insert for the thumb. The inside of the hand was usually covered by a layer of leather with a slit in the hand to take off the mufflers if so desired. Mufflers of this kind were in constant use until 1320. (Claude, Blair European armor p23-29)



11 Arming-cap. Details of statue on the west front of Wells Cathedral, *c.* 1230–40

12 Arming-cap, presumably intended to support a helm. Detail of statue on the west front of Wells Cathedral, *c.* 1230–40

10 Details from the *Maciejowski Bible*, French, *c.* 1250. *Pierpont Morgan Library, New York.* Note (*a*) Kettle-hat with thongs for attachment; (*b*) padded arming-cap; (*c*) gamboised cuisses; (*d*) schynbalds.

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The head of the knight was covered by various helmets. One was the spangenhelm, which is a German term for a helmet built of bands and segments. Its use lasted until the end of the 14th century. The flat-top helmet was another commonly used helmet. Some flat-top helmets had the knights' crest painted on it for better identification. This was used in the early 12th century, and then again in the 13th century, becoming more common in the 14th century. The main headpiece for the knight was the great helm. Through the years the design extended down to the shoulders and then down to part of the chest. Less common during the 14th century was the round-topped helm. (Claude, Blair European armor p25, 30, 34)

Introduction of the surcoat began in the mid 12th century. The surcoat was a fabric garment worn on the outside of the mail. Speculated reasons for wearing this garment are for water resistance, sun resistance during summer, as an extra layer during winter, and for display

or heraldry. In the 14th century, you start to see armorial surcoats. Surcoats of the later period usually had sleeves that were tight down to the wrist. The surcoat also split at the hips for riding and flowed down to the ankles. Before this time, the surcoat is usually portrayed as sleeveless, with wide armholes and varying leg sizes (to the calf, knee, and ankle).

The knight fully armored with mail was last seen in 1330. The reason for this was because of a change in the art of war against knights. Mail, although very useful against many attacks, was less effective against piercing attacks. One of the best examples is the arrow, while another is the lance. Anything with a small point and enough velocity could split the mail with ease.

2. New technology: plate armor

The next step in technology to help these knights defend themselves was plate armor. Plate armor can be seen in three different types. The first was large plates placed in vital areas. Small plates riveted or sewn to fabric creating a “coat of plates” was the second. The third was small plates joined together by some type of complex lacing system known as lamellar construction. Plate armor was first seen in general use during the mid 13th century, but was not used universally until the end of the 14th century. The year 1250 marks the continuous use of plate armor. The reason for much of the imprecision at this point is because these dates are partly determined by the

20 Coat of plates (No. 7) from the site of the Battle of Wisby (1361). The coats of arms on the copper mounts are possibly those of the Flemish family Roorda. *National Historical Museum, Stockholm*

21, 22 Modern reconstruction of a coat of plates (No. 1) from Wisby. *National Historical Museum, Stockholm*

27 (*left*) Coat-armour of King Charles VI of France as Dauphin. French, *c.* 1380. See also 179, 217. *Chartres Museum* (*formerly in the Cathedral*)

28 Armour (composite) of a Vogt of Matsch. North Italian, *c.* 1390. *N.B.*—The mark on the visor is that of the owner. *Churburg* (*13*)

work or artists from this age, and it is very hard to tell what is being worn under a surcoat in paintings. (Claude, Blair European armor p40)

Lamellar construction was confined mostly to Eastern Europe. Trade did exist and that is how some lamellar armor is found outside Eastern Europe, but there is very little of it. Scale armor, however, was seen everywhere. Its use is documented through the 17th century in Eastern Europe. No references to large plated armor are seen until right before the beginning of the 13th century. (Claude, Blair European armor p37)

The most common type of body armor during the 14th century is called the coat of plates. It was usually a cloth or leather garment that was lined with metal. The plates covering the chest formed a rudimentary breastplate. This breastplate was rounded to help show armor under the surcoat. This form of plate stayed in use until the 15th century.

Gauntlets covered in baleyn, or whalebone, was seen first. The first documented reference to metal gauntlets occurs in an ordinance issued to the armorers of Paris in 1296. The metal gauntlets resembled a coat of plates. They were small metal plates that were riveted to the glove or material above the glove that was then sewn onto the glove. The decline of mufflers was caused by these new and improved metal gauntlets. (Claude, Blair European armor p41)

A new protection for the neck was seen right before the 14th century. The gorget or bevor was a plate defense for the neck and chin. Plate bevors become more common through the rest of this century. They were cylindrical in shape and extended all the way up to the bottom of the nose.

15 Brass of Sir William Fitzralph, *c.* 1323. *Pebmarsh, Essex*

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The creation of shin guards and elbow guards, called poleyns and couters, respectively, was seen first in the mid 13th century, but written documentation is not seen until later. Other terms for shin guards are schynbalds, or the English term jamber, or the French terms greaves and demigreaves.

Schynbalds refer to simple shin guards that do not completely enclose the legs in sheet metal. They are found mainly in the 14th century and rarely in the 15th century. The term Legharness refers to covering the whole leg including the thigh and, in some instances, the foot. Greaves remained in use until the 17th century and are defined as the front and backplates hinged together on the outside of the armor. They were usually fastened with straps or buckles on the other side. In most cases, the leg armor was attached over the gamboised cuisses or, in some cases, solid plate cuisses.

The 14th century also introduces armor for the feet called sabatons. The most popular form consisted of overlapping horizontal lames that only covered the top of the shoe and were shaped with a pointed toe. In Germany, defenses of the foot came later. Plate sabatons were not seen frequently until after 1340. (Claude, Blair European armor p42-43)

Plate armor for the arms came shortly after plate for the legs. Again, as with the legs, there are many different terms for this type of armor. The bracer was of English decent, meant to describe armor for the entire arm and generally included the shoulder. Terms for the individual parts of the bracer are as follows. The vambrace was complete arm armor and excluded the shoulder. The rerebrace was characterized as shoulder armor. When these two pieces were seen together they made up the bracer. During the 15th century the rerebrace changes names to pauldron. The pauldron was a more complete shoulder defense that covered part of the breast and backplates. The spaudler describes smaller shoulder defenses. Besagews is a term for the disc

shaped plates that sat on top and in front of the shoulder. The beasagews are found littered through the middle ages and are still seen in the 16th century, but more rarely with each century. The last of the arm armament is known as ailettes and they are usually found in European countries except Germany. They are shown as rectangular protrusions above the shoulder on both sides of the head. It was first believed that ailettes served as a protection from blows to the sides of the head but it was later disproved because they were made of flimsy material in the 14th century. Most believe that they were a show of fear and nothing more. (Claude, Blair European armor p43-46)

So to recap, our knight during the 14th century would wear first put on his aketon. It would be followed by arming his legs with mail chausses and gamboised cuisses with some type of plated shin-guard. Then his sabatons and his hauberk would follow, along with the vambraces and besagews, which were attached to the sleeves and his coat of plates. The surcoat or fancy gambeson would then go over his armor, followed by a waist belt and sword belt. After that the coif and the gauntlets were added. The last piece to be added was the helmet. Before 1300, the helm and also sword and daggers had guard-chains and attached to the surcoat. After this period, they were fastened by rivets to the coat of arms. (Claude, Blair European armor p53)

3. Changing the coat of arms

Single-piece breast and backplates were not made in metal until the end of the 14th century, but there is reference to single breasted plates made of cuir-bouilli (hardened leather) before this. The start of the 15th century is when you can find most of the single piece breastplates. (Claude, Blair European armor p59)

In Germany, the most common form lasted 40 years starting in the year 1380. It was the short globular breastplate, which was sometimes accompanied by an apron like fauld of scales. The Italians were the other main maker of armor during this time period One of their early models was made of a single, globular piece of steel. The main difference is the v shaped stop-rib at the neck. The edges on most breastplates during this time were folded over making them especially strong.

On these new single-pieced breastplates, a new development was created. Sitting right under the armpit was a piece of metal that extended out from the breastplate, forming a lance rest. Some were riveted right to the armor. Others had staples that a metal pin slid into to hold in place.

During the same era, development of a separate backplate can be noted in illustration by the way straps are drawn on the diagrams. The breast and backplates were joined together by straps or buckles on the shoulders and under the arms. The backplate also had a matching laminated skirt to the breastplate. By 1420, this form of body armor was the most commonly used. (Claude, Blair European armor p61)

Just as mail was replaced with plate armor, plate armor starts to improve in its design. Gaps in armor that were being used to disable knights led to new modifications in the armor. In Germany during the mid 14th century, there was a change to the armament of the legs. The globular type of poleyn completely enclosed the knee. Another type was poleyn with rudimentary side wings that were either circular or fan-shaped and protected the outside of the knee. These laggards stayed in use until the year 1370. The form used after this was a complete legharness and sabaton. Another characteristic was the bump-out shape around the knee. This

design stayed in use until the beginning of the 16th century. This design covered the largest portion of the leg up until this time.

The armor for the arms advanced in a similar fashion to the legs. In Germany, there was the most variation. It usually consisted of separate tubular or gutter-shaped defense and, in later years, the rear end of the lower cannon did have a side-wing protecting the elbow. The classic German vambrace was made in three separate pieces but also had some type of shoulder protection. This setup was used until the very end of the 15th century. (Claude, Blair European armor p63)

In Italy, the most common design was short gutter-shaped upper cannons that could be used with or without spaudler protection. The custom in Italy was to not wear spaudlers at all. There was also a new feature on the lower cannon that allowed for lateral movement in the forearms by using horizontal slots for the rivets. Several of the vambraces have stop-ribs below both the inside and outside of the elbow. However, some examples of the upper edge on the inner plate have a bordering flange instead. (Claude, Blair European armor p64-66)

In England, the arms were made a little fancier. They had similar vambraces to the Italians, but they were accompanied by laminated spaudlers. These spaulders just cover the shoulders and are reinforced using disc-shaped plates in front of the shoulder and side wings, in the form of lion masks on the elbows. At the end of the 14th century the spaulder gets larger and extends to the chest and back.

Gauntlets do not change until after the very end of the 14th century. The tendency was for the plates to become larger and fewer. In 1350, the hourglass form of gauntlet replaces the tight fitting glove and, by 1370, is almost the only type in use. It consisted of a metal layer that flared out and overlapped the protection on the wrist. It also included a single plate of metal on the

back of the hand and, in some cases, small plates of metal on the outside of each finger. (Claude, Blair European armor p66)

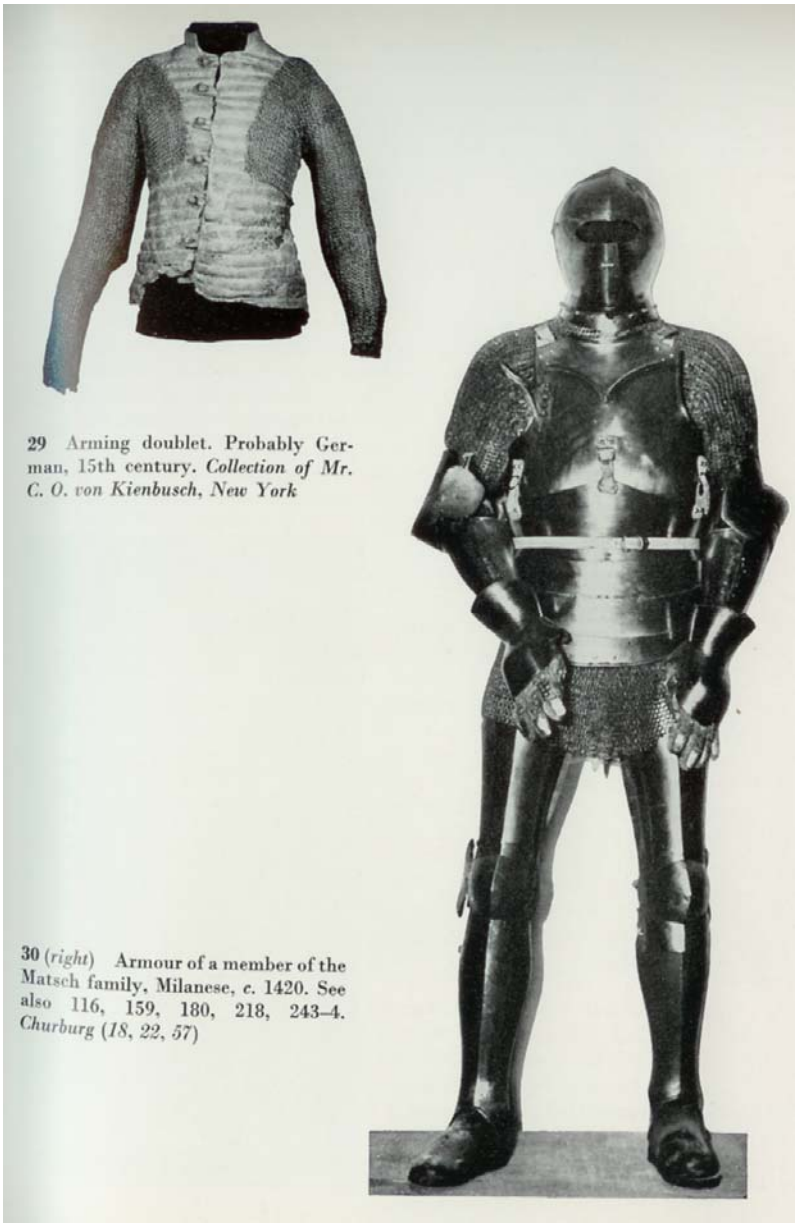
The bascinet remained the most popular during the 14th century and the only thing that changed going into the 15th century was the apex of the helmet. With time, the apex moved further back. The bascinet was fitted with its own aventail and, in some cases, was reinforced with a plate bevor. The bevor is worn more and more as we progress into the 15th century and soon replaces the aventail. When the bevor is attached to the bascinet it is referred to as the great bascinet. There is also a type of visor attached depending on the origin of the bascinet. They make an appearance in the late 14th century. In Germany and Italy, this visor was triangular, commonly known today by the German term klappvisier. The later versions of this visor could be taken off by removing the pins on the side of the helmet, just like the pin on the lance rest. These pins were usually attached to small chain-guards so that they were not lost. (Claude, Blair European armor p67-74)

The helm does not vary much during the 14th century, and the haubergeon is still worn under the armor. After 1350, the length is cut down and the haubergeon only flows down just below the hips. In Germany, the mufflers and chausses stayed in use later than in other areas of the world but by the end of the 14th century, they were gone. The aketon remained in use, but like the haubergeon, shortened in length.

4. The knight in shining armor

The general adoption of white armor, the full plate armor we think of today happened at the beginning of the 15th century. The definition of white armor is armor where the metal is fully visible (not covered with any type of cloth). It consists of most of the armor we have left from

the medieval period and is displayed in many museums. With this, the international period of armor comes to an end and two distinctive styles emerge. These styles were from northern Italy and Germany. Everyone adopted these styles and because of this, we are better able to identify where the suits of armor were from. During this time period, huge amounts of armor were exported to the other nations of northern and western Europe.



29 Arming doublet. Probably German, 15th century. *Collection of Mr. C. O. von Kienbusch, New York*

30 (*right*) Armour of a member of the Matsch family, Milanese, *c.* 1420. See also 116, 159, 180, 218, 243–4. *Churburg* (*18*, *22*, *57*)

Mail armor, although still worn throughout the 15th century, was more of a supplement to plate armor. Full suits of mail are no longer seen. The hauberk and haubergeon are no longer worn. Instead, arming doublets with patches of mail are worn. These arming doublets were sometimes referred to as the aketon. The places where mail was usually attached were around the neck and collar, under the armpits, and in the elbow joints. Sometimes as an alternative to patches of mail the entire sleeve was covered in mail. The arming doublet is usually better suited for the armor worn by knights because it has specific places where the armor can be tied down. In Italy, a skirt of mail was worn to protect the groin area and the tops of the thighs. It sometimes went down to the knees. In Germany they made mail breeches instead of skirts. The breeches were tight mail shorts. The mail coif, or hood, also remained in use. The arming cap was also still used under the helmet. (Claude, Blair European armor p77-79)

Throughout the remainder of this period, it was not uncommon to wear loose robes, cloaks and heraldic tabards over the armor. The fashion in Italy especially was to wear a short cloak which attached to the shoulders and hung down the back like a cape. The crests used in the 14th century are not used in battle during the 15th century, but are still seen at tournaments regularly. What replaced the crest on the helmet in battle were peacock feathers or, in France, a spherical ornament on top of the helmet called a pomme. In Germany, a scarf was worn around the lower part of the sallet.

5. Italian Armor

By the mid 14th century, there are numerous references to the Italian armorers, with specific references to the armor of Lombardy and of Milan. There were numerous armorers all around northern Italy that were exporting armor to Europe. The exportation of Italian armor

lasted through the 16th century. The armor was even styled differently for each country it was exported to. There is even reference in the 15th century to Italian armories making German-style armor and exporting it to Germany. The tendency to for the creator of the armor to mark the armor with identifying marks so that everyone who saw the armor knew it was made by them was started by the very important Missaglia family from Milan. This trend continued after this time allowing us to identify where armor came from more easily. (Claude, Blair European armor p79-80)

31 Armour of a member of the Matsch family. Milanese (Missaglia workshop), *c.* 1450. *N.B.*—The tassets and right gardbrace are missing and the left gauntlet is an inaccurate modern replacement. See also 219. *Scott Collection, Glasgow Museum (formerly at Churburg)*

32 (*right*) St. William. Detail of picture of the Virgin and Child with Saints by Gian Francesco de' Maineri and Lorenzo Costa, *c.* 1498. *National Gallery, London*

The year 1420 marks the year in which Italian armories started mass producing a basic form, with slight changes for the region of export. At this point, the Italian armors were ahead of all other armorers. This homogeneous armor consisted of a round breastplate which extended down to the waist. Three vertical straps on the breastplate attach to the lower breastplate, which starts midway up the top breastplate, curves into the waist, and flares out below it using three overlapping lames that are joined together by rivets. The backplate is attached by shoulder straps and a waist belt. It resembles the two-piece front plate. The neck of the breastplate has both a flange and a V-shaped stop rib. The lance rest can be put on with a removable pin through four vertical staples on the right breastplate. The vambraces are symmetrical and the same as 14th century Italian vambraces. The gauntlets are of the hourglass design and still have small plated metal down each finger. The difference lies with the plate on the back of the hand that now extends to the first joint on the finger and overlaps the plate on top of each finger. The pauldron on the left is larger and usually has a big circular reinforcement that looks like the besagew but was attached to the pauldron to further protect the shoulder. The right side is slightly smaller but laminated and similar in look, except without the extra reinforcement disc. The haubergeon was apparently worn over the vambraces and under the pauldrons. This was the Italian custom or fashion, just like wearing mail sabatons instead of laminated plate. The legharness follows the same style as in the late 14th century. Another new feature was on the cuisses, which had extensions hinged onto their outer edges.

As mentioned above changes in the armor during the 15th century are almost negligible. Breast and backplate changes can be found around the neck and the laminated skirt extends to protect more around the neck and legs. The pauldrons at first extended in the back to overlap the backplate like wings but after 1490, are cut down so that no overlapping occurs. They also

became more rounded, and the upper part was bent up to form upright flanges to help protect the sides of the neck. During the 15th century the extra disc-shaped protection on the left shoulder can be seen taking the shape of the pauldron around the shoulder and extending it to protect more of the neck.

The changes in the vambrace are not noteworthy because not much was done. Guard-braces were added to the elbow. The left was generally much bigger then the right. The gauntlet changes in that it loses its riveted fingertips and turns into a mitten. The metacarpal plates are extended to the fingertips. The cuffs were also extended up the forearm and grew pointed. (Claude, Blair European armor p83)

The legharness has a couple of changes. The side wing that protects the knee and attaches to the poleyn grows much larger and rounds in around the knee slightly. A plate is also added to the upper cuisse as mentioned above. The only change in the greaves occurred at the end of the 15th century in which the extended metal was cut off around the ankle. (Claude, Blair European armor p84)

The great bascinet is seen rarely in this time period. The main helmets for the knight were the sallet and the armet. The barbuta was, also used from 1430 to 1470. It had a T shaped opening on the face and the top was usually rounded. The armet also makes its appearance in this time period. It is a close fitting, visored helmet which was different from the helm, sallet, and great bascinet because of the hinged cheek pieces that overlapped and fastened together by a stud. The face opening looked like an inverted arch protected by a pointed visor which left just a strip to see through. It also had a round disc on the back of the neck called a rondel. Its purpose, though unclear, may have been to protect the back of the neck or to protect the strap to the

reinforcing bevor. The sallet did not change much with its increasing use. (Claude, Blair European armor p85-91)

6. German Armor

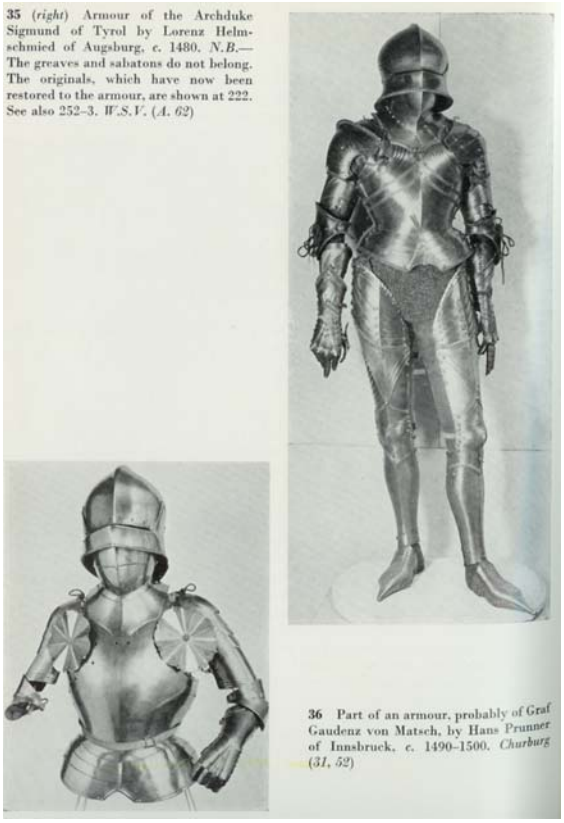
In Germany, rapid progress was made from 1397 to 1450 in the creation of armor. The emergence of germany as an armor exporter is attested by Froissart who noted that Thomas Mowbary in 1397 sent away to Germany for armor, for his dual against Henry Bolingbroke, who sent away to Italy for this armor. The duel actually never happened. From there southern Germany started its increasing presence in the market until they could finally rival northern Italy by 1450. (Claude, Blair European armor p92)

34 (*right*) The Emperor Friedrich III by Jakob Kaschauer, dated 1453. *Imperial Castle, Wiener Neustadt*

Landshut, Innsbruck, and Augsburg were the great centers of southern Germany that produced armor. The most famous family, the Helmschmieds of Augsburg, were as important to Germany as the Missaglias were to Italy. Lorenz Helmschmied was thought to be the greatest of all the armorers at that time

Very few suits of armor have survived from the first half of the 15th century. This makes it hard to compare earlier and later examples. It is known, however, that what happened on one side of the Alps affected what happened on the other. The advancements on either side were matched by the other as quickly as possible.

Differences in the Italian and German design of armor can be seen more clearly in the 1420s when the boxing found at the bottom of the German breastplate becomes much more apparent. The breastplate now sloped forward and away from the chest two thirds of the way down, and the bottom piece curved into the waist. It also had either vertical or radial flutings. It also had a lance rest that was riveted, not stapled, to the breastplate. Borders around the openings were either turned over outward or reinforced with extra strips of metal. The neck also had a stop-rib. Two hoops were usually riveted to each side of the fauld for the sword and dagger. The design was termed kastenburst was used most often until the second half of the century. In 1430, a single pieced backplate was added and strapped to the breastplate like the Italian design. After 1450, a waist belt replaced the hinges and side buckles. (Claude, Blair European armor p93-94)



35 (*right*) Armour of the Archduke Sigmund of Tyrol by Lorenz Helmschmied of Augsburg, *c.* 1480. *N.B.*—The greaves and sabatons do not belong. The originals, which have now been restored to the armour, are shown at 222. See also 252–3. *W.S.V.* (*A. 62*)

36 Part of an armour, probably of Graf Gaudenz von Matsch, by Hans Prunner of Innsbruck, *c.* 1490–1500. *Churburg* (*31, 52*)

39 (*left*) Armour believed to be that of Kunz Schott von Hellingen, Burggraf von Rothenberg, Nuremberg, *c.* 1500. The gauntlets, though contemporary, do not belong. *Collection of Mr. R. T. Gwynn, Epsom*

40 Armour of Johann Friedrich, Elector of Saxony. Saxon (?), dated 1530. *W.S.V.* (*A. 347*)

The second half of the 15th century sees the construction of a new breastplate in Germany. The first in 1450, which was modeled more like the Italian breastplate that had a low

plackart, was attached to the breastplate using sliding rivets. The second started in 1460. This new breastplate starts a new style was called “High Gothic” in German armor. Ripple-like fluting was apparent on all parts of the armor. The cuirass was smaller at the waist. The fauld and culet shrunk to just below the hips and also overlapped the breastplate during the last decade. This design lasted until armor was no longer worn. The fauld was worn without tassets until 1490. The tassets were made of upward lames permanently attached to the fauld. This design also lasted as long as armor did. The plackart was made of two parts that overlapped upwards. It had a staple at the top for the spring-catch bevor which attached to the sallet. They also redesigned the lance rest so that it could fold upward while not in use. Changes made to the armholes allowed for movable gussets. In cases when the bevor was not used, the collar or gorget consisted of two main plates which surround the neck and extend over the top of the chest and back. (Claude, Blair European armor p95-96)

Arm defenses changed in Germany during the 1420’s. They began to consist of a smaller laminated spaulder which extended down the outside of the arm and besagew over the armpit. This defense lasted until mid 15th century when the spaulder became permanently attached to the upper cannon. The spaulder also enlarged and started to overlap the breast and especially the backplate. During the 16th century, the spaulder grew wings across the back cusped plate. Later guard braces covering the front and sides of the pauldrons emerged, resembling the Italian ones. This arm arrangement lasted almost all the way through the 16th century. (Claude, Blair European armor p96-98)

It is said that gauntlets, legharnesses, and vambraces from Germany and Italy during the first half of the century were basically the same. The only difference is that German gauntlets never became pointed like the Italian version. The fingered gauntlet did make a comeback in

Germany during the second half of the 15th century, but the mitten was still the most widely used. The German vambrace and legharness were constructed in the Italian manner, except with cusped and rippled side wings. Also, the gaps on the inside elbow were covered using small laminations. The end of the 15th century also marks the end of the gothic style. A simpler and smaller side wing was implemented. This lasted through half of the 16th century. (Claude, Blair European armor p100-101)

The German sabatons were much different. They did not like mail sabatons or mail fringes below the knees as in Italy. The sabatons of Germany were almost always horizontal lames of plate. They also had very pointy toes. In the 1460's, the cuisses were lengthened and detachable pointed extensions of the sabatons also appeared. These extensions were enormous. During the last decade of the century, the cuisses returned to the original length and sabatons became broad and round toed. Of note, during the 15th century cuisses were commonly worn without greaves in Germany. (Claude, Blair European armor p101-102)

Until the end of the first half of the 15th century, the Germans' favorite helmet was the bascinet. The armet was not popular in Germany until the early 16th century. The early history of the sallet in Germany is still uncertain, but it is known that the early sallets were of medium tail length and imported to Germany from Italy. In 1480, the spring loaded sallet is found as mentioned before. These sallets had a catch on the breastplate to lock the visor in the closed position. The black sallet, as it was called, appeared in the last decade of the century, along with another type. It was named the black sallet because it was left rough, or unpolished, from the hammer. The second type of sallet was an adaptation of the Italian visored sallet from the same period. It is different from others of its kind because it has a small tail and is designed to be worn

without a bevor. The visor completely covers the face and is usually curved under the chin. (Claude, Blair European armor p102-107)

To recap, the typical knight, during the 15th century would wear a harness something like explained below. There was probably some type of light shirt and pants that was worn under the armor. Then the first thing put on would be the arming doublet with gussets of mail on it followed by a full leg harness. Second would be the sabatons which were mail or laminated metal. Next a mail skirt or breaches. After that was set up you would begin to cover the torso with the breast plate, back plate and lower breast plate with a belt if needed, and a sword belt. Then came the symmetrical vambraces, the larger left pauldron, and smaller right pauldron. Next were the hourglass shaped gauntlets, designed with laminated metal fingers or a full metal mitten. The last two or three pieces were the arming cap, neck protection if used, and the helmet. The sallet would require a bevor to protect the neck and chin. The armet which was the other most used helmet during the 15th century would either be enclosed around the v-shaped stop rib on the neck of the breast, and backplate. Or it would be attached to the wrapper.

7. The Sixteenth Century

The sixteenth century starts the decline of the knight as the ultimate fighting force in battle tactics. In the early years of the 14th century we start to see a few examples of knights being taken down by ground troops (infantry), sometimes inferior in number. Some examples are the Flemish pikemen, the English archers, and the Swiss infantry. This was the catalyze for the decrease in knights. The image of the armored horsemen being the dominating figure on the battlefield was no longer a reality after the 15th century was over. Knights still had a lot of

importance during the first half of the 16th century but it was slowly being taken away. (Claude, Blair European armor p112)

You start to see a general fusion of the Italian and German styles around the 1500's. It is said to have started with the Italian Wars. Although the centers in north Italy and south Germany still existed, their glory was no more. In Germany the Helmschmied family still reigned as the son and grandson of Lorenz takes over, but the families in Italy start to lose their glory after the first half of the 16th century as the Missaglias family is dominated by another. (Claude, Blair European armor p113)

The new weapons being used in the 16th century called for the highest quality of armor. This causes the technical skill in which aesthetics were applied to decrease. New names start to sprout around the world in the armors' guilds. The production requirements needed to meet the high standards on all pieces of armor forced many changes. One of the only positive things that came out of the 16th century armor was double pieces. Double armor supported the existing armor in the most vital spots attaching to the outside of the armor. This allowed for the replacement of damaged pieces, better proofing, and also the availability of switching for tournament armor. This system remained in until shortly after the start of the 17th century. (Claude, Blair European armor p117, 143-147)

You do not see many changes in the armor for knights during this time period because the focus on who fights the battles changes. The armor of the regular grounds soldier (infantry man), calvery, and others force the armor's to focus on a new market. The proofing of armor against guns becomes the most important thing for armors. The improvement in gunpowder weapons brings much stronger firepower. The focus on armor for these new groups is one of the causes in the decline of the knight.

As more powerful pistols and muskets come into play, the weight of the armor increases significantly. It increases so much that other pieces of armor that are thought to be less important are left off to compensate. The decline in leg armor is apparent after 1550. The light cavalry of this day only wears a cuirass with spaulders, and sometimes gauntlets. The infantry of this time period don't wear much more then the light calvery. They only exchanged spaulders for pauldrons, added a helmet, and vambraces.

Knights now were no longer as powerful against enemies. Knights could be killed as quickly as the peasant farmers that made up the infantry. The way battles were fought changes in such a way that the knight is ineffective, and the technological advances in the ways of killing render the knight useless. The guns of this error changed everything, and although not a catalyze in the decrease of the knight, they were surely the finishing step in the age of knighthood.

8. Tournament armor

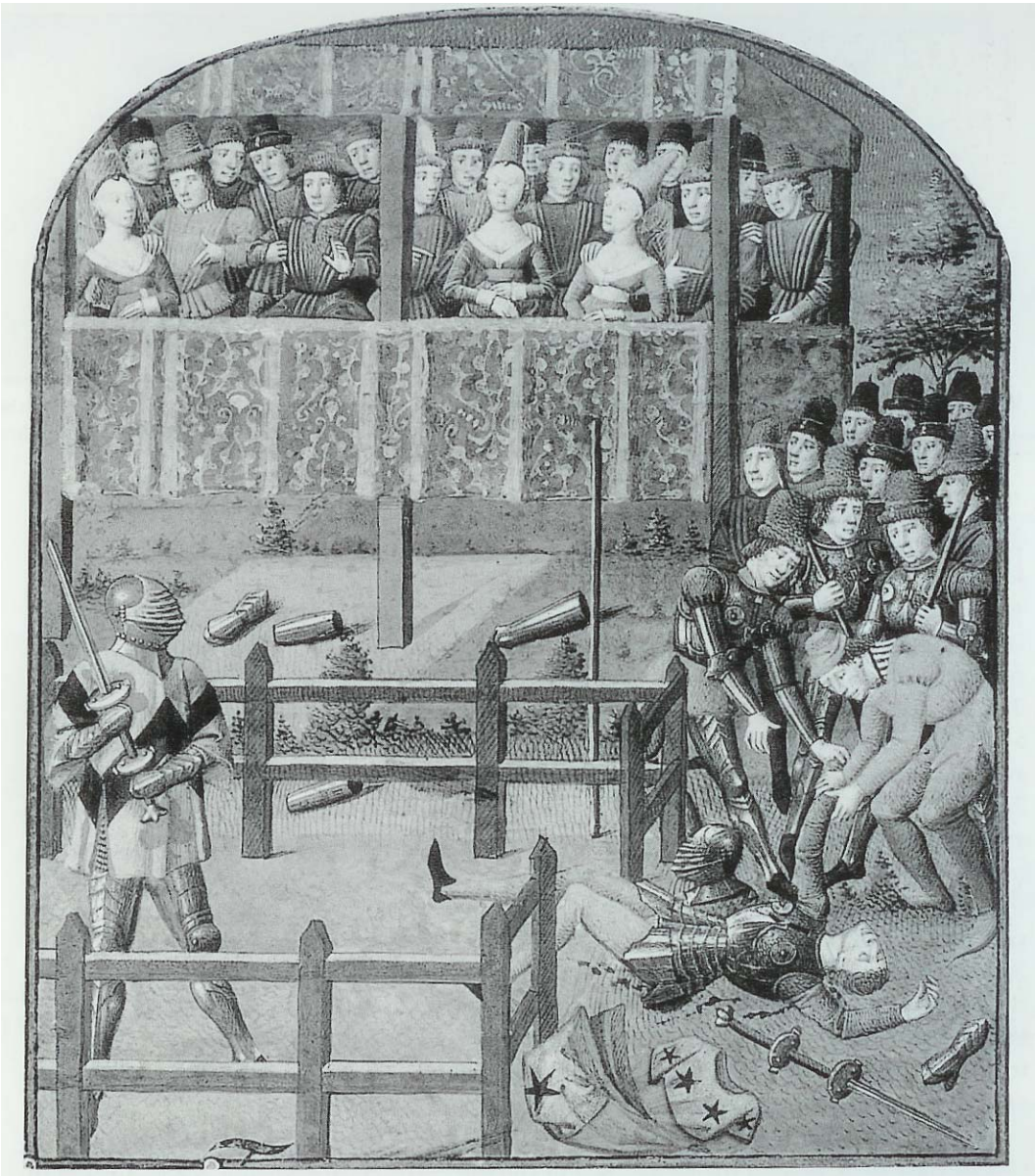
The tournaments existed in Europe before the year 1100 and were used as a way to practice. The early tournament was thought to be a lot like that of the roman tournaments in the coliseum. Injury and death were frequent, and there were virtually no rules in the tournament. The justification of tournament at this time was that the youth must fight and face the chance of death before they are ready to combat in real warfare. It was said that there was no hope for

victory if not prepared, and the tournaments were a way to prepare.

Right: Woodcut by Lucas Cranach, 1509, depicting a tourney. On the bottom right one of the knights has discarded a reinforce piece.

107. A sixteenth-century Monstrelet MS showing an axe combat between Portuguese and French knights. Bibliothèque Nationale Paris, MS. Fr. 20,360, fol. 303v.

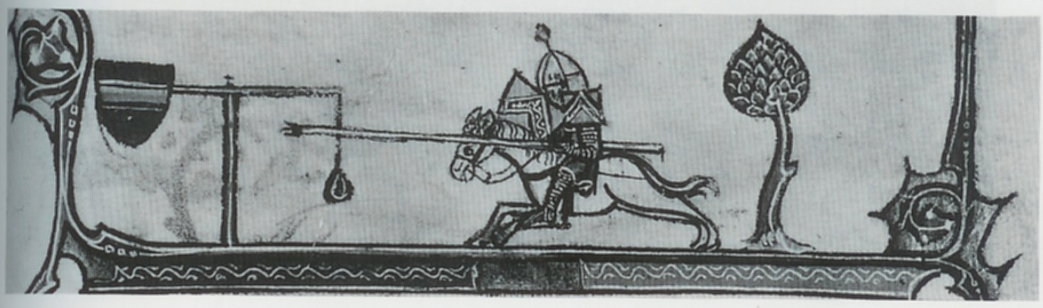
In the 13th century, the tournament is refined and rules are put in place to stop the growing death rate. The tournament was made into more of a competition. One way in which they made tournaments safer was the rebated lance, or the lance of courtesy. This was a blunted lance that was made to break, and splinter on impact against the opponent. Another safety regulation during the joust was a barrier down the center of the lists that stopped competitors from colliding during the tournament. This barrier did not appear until the 1420's but is a very note worthy safety regulation.



185. The end of a trial by combat. Bibliothèque Nationale, Paris, MS. Fr. 2258, fol. 23v.

21 A tournament; Italy, fourteenth century (BL MS Add. 12228 f. 182v-183r)

22 Joust; England, fourteenth century (BL MS Royal 10 E IV, f. 65v)



23 Practising: tilting at the quintain (BL MS Facs. 237, pl.XIX)

Tournament armor does not usually change from that of battle field armor until after the 14th century. In some cases the armor was decorated better for tournament, but the only real

noteworthy change was a special piece. The mayndefer is mentioned in written inventory and thought to be some type of rigid defense for the left hand and arm, but we do not have a preserved specimen as proof.

The frog-mouthed helm is the earliest identifiable piece of changed armor for the tournament. It comes into use at the end of the 14th century and is designed explicitly for the joust. The helmet is fastened down to the cuirass at the front and back so that there is no movement. It had a low skull that curved up and out at the front to form a flattened point at the line of sight. This formed a slight gap between the bevor and the skull which was arranged so that the face was completely covered when standing straight up. You could only see when leaning forward in a correct position for couching the lance. The knight would straighten up slightly at the moment of impact so that his eyes were totally protected. Ordinary battle armor equipped with this new helmet was used until 1440.

In the second half of the 15th century, tournament armor, as a general rule, was much heavier, and the reinforcements were more complex then the battle armor of this period. Tournament armor was more focused on safety and less focused on mobility.

In the 1530's, the frog-mouthed helm was modified in looks slightly by where it came from. In Germany, this helmet had a more pronounced forward curve called the swung, and a longitudinal screw attached to the rear could adjust the angle of the helmet. In Italy, the design was squatter and pillbox-shaped. France, England, and Spain had a mix between the two designs. These new forms all had slits and holes for the detachable helmet lining and ventilation. Some even had additional reinforcement plating on the left side of the helmet.

In the year 1446, there is a description of the first armor designed explicitly for the joust in the French MS. The joust armor consisted of a cuirass or brigandine which had a lance rest, and a strapping system for the helmet. It had a manifer for the left hand which covered the hand and arm a couple of inches above the elbow. It also had a single pieced small pauldron for the left shoulder and some type of small gauntlet for the right hand. The poulder-mitten was a lower arm large shell-like plate that also covered the outside of the elbow. It curved in to protect the joint of the elbow and the lower half of the upper arm. A small right pauldron was laminated with a large circular besagew. Hanging on the left side of the breast was a buffer of wood or leather for the shield. A retangular wood shield with squares of horn suspended over the left side of the chest by a fitted cord. Legharness's were not mentioned. This is probably because there is enough leg defense that sits on the side of the horse.

The armor described above is one of the few that are found outside Germany during this time period. Very few jousting armors were of non-Germanic origin. The German armor follows almost the same exact setup as the one described above. The most noted difference would be the fauld which is common in all german armor.

The term applied to the ordinary joust was the gestech. A less noteworthy form would be the hohenzeuggestech. The main difference between the gestech and the hohenzeuggestech was the way the horse was equipped. The hohenzeuggestech went out of favor before the second half of the 15th century. Another form the scharfrennen was different because, what the knight was armed with was different.

People who competed in the scharfrennen usually went with out legharness, vambraces, pauldrons, and gauntlets. The reason being was the renntartsche. The renntartsche was made of leather and wood that is reinforced with metal. It was attached to the breast plate by a single

screw and covered the whole left side of the rider. It was shaped to the bevor and fits closely against the breast plate. It curved out just before the waist so that there was room for the arm and clears the saddle-bow. Other armor included was the normal cuirass with a heavier plackart, fauld, and tassets. The helmet worn was a deep sallet, with a deep bevor which was screwed to the breast plate. Infront of the bevor was two wing-shaped plates fassened over the brow, which were designed to fall off during impact. Special boots were worn that were much heavier. And leg protection in the form of large metal plate that hung on each side of the saddle covered the thighs and knees. The renntartsche was made through the 1550's.

61 (*right*) Parade armour of Alessandro Farnese, Duke of Parma, probably by Lucio Piccinino of Milan, *c.* 1570. *W.S.V.* (*A. 1132, 1153*)

58 Drawing of tonlet armour with pieces of exchange of the Archduke Maximilian (later Emperor Maximilian II) from the pattern-book of the etcher Jörg Sorg of Augsburg. The inscription at the top is to the effect that the armour was made for the Archduke by Matthäus Frauenpreiss (of Augsburg) and etched by Sorg in 1549. The original armour at Vienna (*B. 73, A. 641*) is dated 1550. *State Library, Stuttgart*

59 (*below*) Foot-combat armour of Henry VIII. *Greenwich, c.* 1515–20. The right haute-piece is missing. See also 237. *T.L.A.* (*II. 6*)

Other competitions in the tournaments not including the joust, were fought on foot. Competitions with the sword, spear, dagger, pole-axe, and pole-hammer could also be seen. Normal battle armor was worn for these until the start of the 16th century.

In 1500 the introduction of a new foot combat armor was developed in Germany. The great bascinet was worn, and the armor had symmetrical pauldrons. The cuisses completely enclosed the thigh, unlike the half covered thigh horse back rider wore. The feature that is most

noticeable though is the tonlet. The tonlet is a flaring laminated skirt that extended down to the knee. This armor was used until 1560.

A special form of ordinary field armor was created which superseded the above armor. The new armor was made with out a tonlet, or any type of fauld and tassets. The new armor had laminated steel breaches shaped around the buttocks and overlapped the cuisses. The thighs were once again completely surrounded as were the armpits and gaps over the elbows and knees. Using many laminations at the knees and elbows covered previous gaps. Laminated pauldrons also made this armor more mobile and the most protected of all. The cuffs of the gauntlets locked under the lower cannons of the vambrace, and the bascinet was also locked to the breast and back plates. This armor had no gaps in it in which to put a sword or dagger.

During the very end of the 16th century armor is less focused on. The perfections created in field armor with no gaps was not made often any more and armor with less cover is used. The general trend used less complicated forms of armor. With the end of the north Italian and south German era came a more diverse building of armor. More important then was battle armor tested against fire power. Tournament armor was no longer a focus, and lost a lot of its grander.

9. Wearing Armor

Plate armor was a huge part of warfare in the 14th, 15th, and 16th century. The protection of your warriors was and still is just as important as training them. In this era the protection of knights consisted of full bodied plate armor. This armor covered almost, if not all areas of the body. There are huge advantages, and disadvantages to wearing a full suite of armor. There are limitations that can not be over come and because of that, choices must be made. These choices

are documented threw ought history, some of which are life threatening decisions made for the considerations of comfort.

Comfort is the number one disadvantage to wearing armor. It could be the general comfort of how something feels while being worn or when in motion with the appendages of the body. It could mean the comfort of wearing armor for extended periods of time, which then leads to lower stamina. Vision could be a comfort, or even breathing. Comfort to the atmosphere, or temperature that you are in is also important. Comfort can be described as almost anything, and it is because of comfort that armor is such a disadvantage.

In terms of how long it took for a knight to get ready, the amount of allotted time could range from about thirty minutes to an hour and thirty minutes. The time range depending on how many squires you have, how fast they worked, and how many pieces need to be adjusted to your comfort. You really needed to trust your squires because it is basically your life in their hands to make sure that everything is secure. Pieces were checked and double checked, along with total body coverage. Going to the bathroom is possible in some cases while still in armor but not in others. It is impossible to itch anything while in armor and this can leave you uncomfortable or focusing on the wrong things during a fight.

The weight of the armor is heavy, usually being around a ballpark figure of forty pounds. That weight when taken into consideration is less then what the average infantry man in the army today carries in total, including weapons and supplies. The average knight also had the advantage of the weight being spread out around his body. So in terms of weight knights didn’t really have it so bad, but there are some cases in which knights have died because of the weight of their armor. One of these cases involves unarmored, or less fully armored ground fighter’s, chasing down fully armored knights and killing them. Another example is the knight that tries to escape

the battle field by getting to the other side of the river. There are only two documented cases in which a knight safely swam or got to the other side of a river in full armor alive.

When thinking about movement, the infantry man definitely has it better. They are usually totally free to move all appendages. The only limitation is the pack on their backs. The knight although having almost full range of motion with some small restraints could move fairly easily. The ease in which a knight could move was usually related to how well the armor was crafted to that specific knight. Most knights also wore some type of padding in certain places to make things like the knees and head more comfortable. The most limitations found with movement occur when the arms are in motion above the head, or movement of the neck. Movements of the arms above the head were limited to raising your upper arm until it was about parallel with your shoulders. Limitations of the neck can be found when attaching the bevor to your armor, or when the bottom of the helmet is attached to the top of the cuisse. The limitation in the neck was not always a bad thing though. One example would be in tournament. If the helmet were not attached to the cuisse and the neck was allowed to move freely while struck by a lance, the spinal cord could easily break. Most minor limitations in movement can be ignored as the protection of the armor far supercedes the need for these movements. There are also some cases in which armor does not move properly after being struck in battle. This limitation of movement or sight because the armor has moved or deformed can be fatal.

When wearing armor for extended periods of time there are a lot more comfort factors that need to be considered. When participating in actual battle, the time allotted to the battle can vary greatly. When fighting for extended periods of time in heavy armor your stamina is greatly decreased. Because of this some knights make the fatal mistake of wearing less armor in anticipation of the long battle. This lack of armor leads to exposed parts of the body.

Breathing is also extremely hard during long term combat. A closed visor helmet greatly limits the amount of fresh air intake and the amount of air which is blown out. While in battle the risks of pulling up the visor for a fresh breath of air and easy breathing is a comfort which exposes a vital area in which to be struck down.

Temperature is also an important factor in which to look at. When wearing armor you do have some layers, but in the dead of winter it is not nearly enough to keep warm. The temperature of the metal is very hard to keep reasonable when exposed to the cold. This is why the function of the surcoat was thought to protect the metal so that cold temperatures did not affect you as much. In the summer the metal can become extremely hot and the surcoat is thought to protect the armor against the suns rays. The surcoat can be a very effective way to stop or slow the transmitting of heat and cold.

During combat and also during the summer the body easily overheats while in a full suite of armor. The temperatures sometimes are so extreme that they cause you to stop thinking as clearly as one normally would. It also causes dehydration because of the amount of perspiration, or sweat your body is giving off. There are many cases were layers of protection are left off because of temperature. As you can see, the comfort of staying cooler, being more hydrated, and thinking clearly versus total body protection forces a critical decision for the knight while in battle. As a side note I would like to add that the knights of this time would drink some type of wine or ale while in battle to quench their thirst and help regulate body heat, but as we now know this had exactly the opposite effect as intended and also did not help in the thinking area during a fight.

One of the last comforts to note was that of the visual comfort. When wearing a full visored helmet peripheral vision is almost non existent. You can usually only see right in front of

you. You also lose some top and bottom sight. This can be very dangerous while fighting a combatant. If you lose sight of your opponent or if attacked from an opponent that is not right in front of you the result could be fatal. Lifting your visor gave more of a view but as stated above could prove to be a fatal move.

As noted in previous writing the Italians hated wearing plated sabatons. Some wore mail sabatons, but it was fairly easy to drive the back end of a poleax or almost any weapon threw the mail or unarmored foot garment. The bottom of the foot was not usually covered with metal until the 16th century, and made stepping on caltrops a huge problem. Caltrops were tetrahedral shaped metal spikes that were designed to stand on the ground with one spike in the air so when stepped on would go threw the bottom of the shoe and also pierce threw the foot. Caltrops would help to incapacitate Calvary troops.

It is fairly easy to see the disadvantages of armor when considering comfort while in combat. The choice of being comfortable or being protected is a very hard one to choose. This life threatening choice no mater what choice was made has the prospect or consequence of death in any situation. This being said how do you choose what is more important during battle in terms of comfort or total protection?

Staff Weapons

By: Ian Ruscak

1. Overview:

One of the oldest forms of weaponry, staff weapons have an origin tracing back well past the beginning of civilization in the Middle East. The earliest form was the simple spear. Though all staff weapons originated from this basic design, by the end of the Middle Ages a variety of subtypes had evolved (Edge 28, Blair 283).

In the beginning the lance and the spear were identical, the only difference being that the spear was the staff weapon of the foot soldier and the lance was that of a horseman. Because these weapons were cheap, spear and shield combat was the most popular form of combat during the 11th and 12th centuries. Due to its cost effectiveness, the spear became a class-less weapon used by peasants and noblemen alike (Edge 28-29).

The spear and lance had an original average height of 6 foot 6 inches. This is extremely short to be wielded under the arm (couched) on horseback and most likely was not. As these weapons evolved, the lance grew to a size rarely under 10 feet while the spear remained at its original size. Though the heads of the spears varied greatly, the shaft was almost always made of ash or yew due to its excellent flexibility and strength (Edge 30, Blair 283).

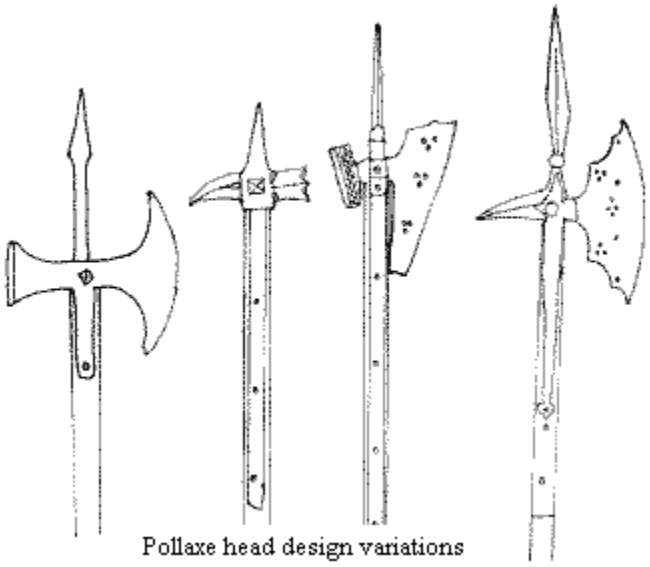
The head was usually made from iron or steel with hammer-welded edges and points (borrowed from the traditions of the Roman Empire) that were then filed sharp. The heads were socketed with a single split on the tang. These heads were then riveted tightly to the shaft and

Examples of spear head variations

occasionally leather straps were used to secure the head further (Edge 30).

Most weaponry of the 13th century was heavily modified to increase its effectiveness against armored opponents, however the spear remained relatively unchanged in its design. Most of the changes occurred during the crusades where the head shape diversified from the traditional willow/laurel leaf design to include agriculturally based head shapes such as the hedging bill, scythe, and pitch fork (Edge 62). These new head shapes were used along with traditional shapes in spear production during this century as shown in the embedded picture.

During the 14th century, the basic spear remained unchanged except for its length, which increased in size from approximately 7 feet to 16 feet by the end of the century. Spears of this length were effectively used against cavalry (Edge 82). This century also saw the development of the polaxe or ravensbill from the combination of the two handed axe and the halberd. This weapon, capable of piercing and shattering breastplates, consisted of many combinations of beak, hammer and axe. Despite its dimensions, it could be wielded with great efficiency and deadly precision. This weapon was used in battle and foot tournaments where fatal and near fatal injuries often occurred (Edge 127-128). Though much of the proportions of the weapon depended on individual taste, it was said that the overall height of the pollaxe be one hand longer than the height of the man using it, giving the weapon an approximate height of



Pollaxe head design variations

about 6 to 7 feet (Angelo 3). The weight of the weapon also varied depending on the design, this usually ranged from 5 to 7 pounds (Wallace A926).

2. Sources:

Most of the information on the techniques of armored combat is contained in manuscript treatises, which were written in the times when the art of armored combat was at its height. These treatises must be interpreted in order to get an idea of how combat worked. In this armored technique recreation of staff weaponry the treatises of "Le Jeu de la Hache" translated by Sidney Anglo and the "Starhemberg Fechtbuch" translated by Christian Tobler, were interpreted to achieve this.

"Le Jeu de la Hache" is a manuscript consisting of 10 vellum leaves measuring 240 by 160 millimeters. It is an anonymous text, which appears not to have been completed since that some of the illustrations were not finished. Not only does this text not have an author but it also does not have a date of composition but is estimated at around the early 15th century due to the nature of its wording. Nevertheless from its contents, it is clear that a master of arms wrote it. It appears to have been written as a tutorial for those who wanted to become skilled in the art of pollaxe combat.

"Starhemberg Fechtbuch" is a longer manuscript that covers multiple weapon forms including the lance use and was written in 1452. This manuscript has a lance section which deals primarily with the art of using the lance on horseback or attacking a mounted man. Because this report had only to deal with unmounted combat, this section was not covered, however, those sections dealing with unmounted lance and spear combat were covered in this report.

3. Parts of the Weapon:

Pollaxe:

1. Point: The top spike of the head of the pollaxe.
2. Mallet: The hammer or blade of the head. There are many configurations and designs for this part.
3. Beak: The curved spike on the opposite side of the mallet
4. Cross: The part of the shaft between the head and the lead hand. This would have steel tongues on each side of the shaft to guard against enemy weaponry chopping through the shaft.
5. Mid-shaft: The part of the shaft between the hands. This section would have small roundels or disk shaped guards on each side to prevent weapons from sliding down the shaft and hitting the hands.
6. Roundels: placed on each side of the mid-shaft in order to protect the hands from weapons that ran down the shaft.
7. Shaft end: The area behind the backhand. This usually has a spike on the end of it.

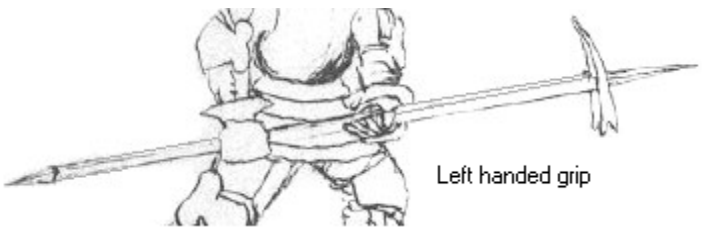
Spear:

1. Head: This was the steel tip that was used primarily to thrust at the opponent. This section also had many configurations depending on the period and region that it was made.
2. Shaft: This was usually inserted into the head and riveted. Depending on the time period the length of this shaft varied from 7 to 16 feet, but was usually made from ash.

4. Targets:

Different staff weaponry had different purposes before the advent of plate armor in the 14th century. Thereafter, all staff weapons had points to "stab and probe" enemy's defenses (Edge 30). These targets included the armpits, the inside of the elbow, the inside of the knee, the bottom of the foot and the visor. Some of these gaps were protected with chain mallet. The point and the shaft end of the pollaxe were designed to penetrate these targets mentioned above. In addition to its ability to stab and probe at an enemy, the pollaxe was also able to use its hammerhead to bash an enemy's defenses. A blow with this hammer was also said to be able to shatter an enemy's breastplate and penetrate armor (Edge 127).

5. Grip:


Left handed grip

All staff weapons were carried over and under handed but where this was

done on the shaft varied. The spear was gripped to the rear while the Pollaxe was gripped inside the roundels (Edge 30).

6. Tactics:

In order to maximize on the shaft length, the spear was gripped to the rear with the point as far advanced as possible. The purpose was to keep the enemy as distance and not allow him to get close enough to strike. By blocking his advances with a long-range weapon and striking him at distance, the possibility of injury to the soldier was decreased (Blair 283)

The pollaxe was used to bash the enemy's defenses. The grip position was fixed on this weapon so that it was a closer range weapon than that of the spear.

7. Stances:

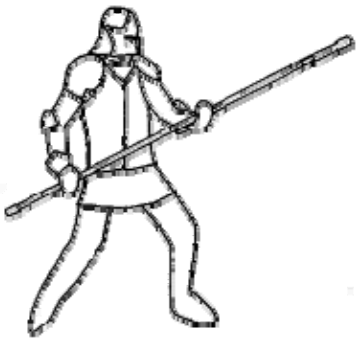
These are initial positions that are chosen depending on the individual preferences of attacks that are desired, or depending on the skill of the opponent.

7.1 Spear:

1. Medium Guardant: This is the basic over/under handed grip toward the rear of the shaft. <Same as the medium guardant shown below>
2. Upper Guardant: In this stance the spear is held overhead with the rear hand in a gripped in an overhead stabbing position and the front hand guiding the thrust in the opposite orientation as compared to the rear hand.

7.2 Pollaxe:

1. Medium guardant: This is the same as the spear stance above but the cross of the pollaxe is held across the body. This is done to block incoming blows. The principal attack from this position is the point thrust.



2. Reverse guardant: This stance is very aggressive, and has both the overhead axe blow with the mallet and the shaft end thrust as attack options. This stance also offers good protection and keeps the cross of the axe out of entanglement range.

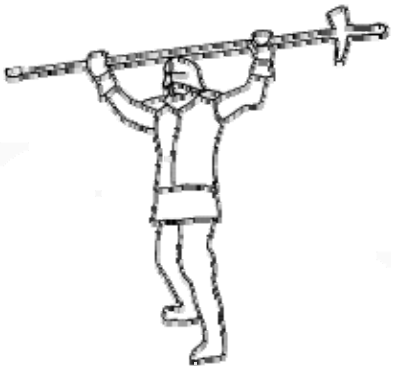
3. Lower reverse guardant**:** This stance looks deceptively open and unguarded, but offers both attacks (the shaft end thrust and the side mallet blow) and rapid stance changes as options.

4. Hanging guardant: This is an excellent defensive stance with side mallet blows and point thrusts as its principal attacks. Hanging guardant stance can be quickly changed to medium guardant by lowering the backhand to the hip.

8. Guards

8.1 Defensive Stances:

These are defensive stances that are used to block or divert incoming enemy blows.



Upper Guard

Inside Guard

Outside Guard

Lower Outside Guard

Lower Inside Guard

8.2: Defensive Moves:

8.2.1 Parry:

This is done with the shaft end or cross of the pollaxe and the shaft of the spear. This is the act of diverting an enemies thrust by striking your weapon against his in such a way that his thrust is diverted off to your sides. This can be done either in a forehanded or backhanded manner depending on which side you favor the thrust to be diverted. This is done by quickly moving said part of your weapon in a horizontal movement so that it collides with your enemies thrust and continuing that motion until the thrust is no longer a danger to you. It should be noted not to over extend or take the thrust too far outside your body in order to protect against counter attacks.

8.2.2 Check

The check is the act of swinging or positioning the shaft of your weapon in a fashion that negates an enemy's swing. This is mostly done in pollaxe combat when an enemy blow with the mallet or head of the weapon is imminent. In order to protect one's self this blow must be intercepted with your weapon. This can be done with the cross, mid-shaft or the shaft end of your weapon depending on the stance that you're in at the moment of danger. Depending on which part of the weapon that is chosen, a defensive stance is the result.

9. Attacks:

9.1 Thrusts

Thrusts are the primary attack of both the spear (with the spear head) and the pollaxe (with both the shaft end and the point). This is done by gripping firmly on the rear hand and using the forward hand to guide the point of the weapon to the target.

9.2 Blows

Blows are used exclusively with pollaxe combat. This is done by swinging the mallet or beak upon the enemy from any angle. This attack can pierce and smash armor as well as disorient the enemy when he is struck in the head. This attack can also used to throw the enemy off balance where from counter attack with the shaft end or the point of your weapon can follow up your initial blow attack.

9.3 Crosschecks/Throws

Crosschecks are used to throw the enemy to the ground or off balance in order to gain advantage in a battle. This can be done in numerous ways but involve gaining leverage on the opponent by placing your foot behind his and pushing him over (cross checking) him with one of the parts of the weapon so that he falls to the ground or stumbles. Once this is achieved a thrust attack can follow.

9.4 Hooks/Pulls

Hooks are used exclusively in pollaxe combat. Using the beak of the axe, one can hook the leg or weapon of his opponent and pull to drag him to the ground or disarm him. From there a thrust attack can follow.

10. Sequences

10.1: Pollaxe Sequences

10.1.1 Shaft end block of swinging blow: Anglo [4,5,6]

Student steps forward with his right foot while delivering a swinging blow to master’s head.

The master, starting in a medium guardant, steps forward with his left foot while turning his left hand upward to catch the cross of the students axe with his shaft end.

The master then pivots his shaft end around the top hand of the student in between the student's hands and jerks down to make the student release his axe, or become out of position. From there the master can either jab at the students head with his shaft end or swing his mallet at the students head.

If the master starts from the lower reverse guardant, the same technique can be done without moving (Anglo [5]).

10.1.2 Cross block of swinging blow: Anglo [7]

Student again delivers a swinging blow at the head.

The master, in the lower reverse guardant, pivots on his left foot bringing the cross upward to engage it crosswise with the student's cross. Master quickly disengages the axe and pivots on the left foot again and swings the shaft end from low to high to slash the upper wrist of the student to make him drop the axe.

If the student does not, the master quickly steps back with the right foot returns to the lower reverse guardant.

10.1.3 Counter to the Cross Block: Anglo [8]

The student gives the first blow directed at the master's head.

The master then covers with the cross block as mentioned above.

Once the student realizes that his swinging blow will not work he then pivots on his left leg and steps back with his right to get into a lower guardant position. He then attacks the lead wrist of the master to make him lose his axe.

10.1.4 Mid-shaft block of swinging blow: Anglo [9]

The student steps with his right foot and delivers a swinging blow.

The master in a lower reverse guardant steps out to the student's right side with his left foot while raising his mid-shaft to block the cross of the student's axe in an upper guard. The master then steps through with the right foot, and places the foot behind his front foot while rotating the left arm so that the shaft end is now under his chin. Now the master pushes the student to the ground.

10.1.5 Counter to the mid-shaft block: Anglo [11]

The master blocks the student's swing with the upper guard, at this time he tries to put the shaft end to the student's chin.

The student then has to recoil his axe and step back with his right foot, placing the point under the master's arm to push him away.

The student could also rotate his axe around the upper guard of the master, placing the mid-shaft under the master's right armpit and push him to the ground.

10.1.6 Mid-shaft throw: Anglo [12]

Without moving the master blocks the student's blow with the mid-shaft in an upper guard with the arms fully extended. He then steps right, brings his left hand down and hooks the

student’s exposed shaft end with his shaft end and again raises his arms and pushes forward to make the student become out of position. The master then can put the point of the axe to the student’s neck.

10.1.7 Mid-shaft knockdown: Anglo [16]

With crosses crossed the student makes the master recoil with a push.

The master, in a medium guardant, recoils his axe while stepping back with his lead foot going into a reverse guardant. The master then thrusts the point to the top of the student’s cross between the beck and the mid shaft. He then pushes to lock the student’s cross against the student’s shoulders with the mallet and steps with his back foot behind the lead foot of the student and pushes the student over with his hand.

10.1.8 Backhanded point blow: Anglo [19, 20]

With the student in a lower reverse guardant, the master stays in the medium guardant.

When the student lunges with his shaft end, the master tries to pull the lunge to his right with a backhanded blow with his point hoping that this will dislodge the axe from the hands of the student.

If the master fails then he steps forward with his left foot while rotating the shaft end forward and jabs at the student’s head.

This will cause the student to raise his shaft end and push against the master.

The master then draws back his shaft end stepping back with his left foot a half step and swinging forward with his mallet to the student’s head.

10.1.9 Beak knee attack: Anglo [22]

The master successfully hits the student in the head in the medium guardant. He then must quickly fake as if he were to make a shot at the head again.

The student covers and braces for a head attack.

The master then raises his backhand to go into a hanging guardant where he then takes an upward swing with the beck to hit the knee, or he can hook around the knee and drag the student down.

10.1.10 Knee attack counter: Anglo [23]

The master tries the knee attack on the student.

The student will step with his left foot to the right side of the master moving into a lower inside guard. From this he can give a backhand to the master's beck and try to get the master to drop the axe.

If the master doesn't drop the axe the student can then step into the master and deliver a jab with the point.

10.1.11 High shaft end attack counter: Anglo [26]

The student in a high reverse lower guardant and jabs at the master's face.

The master also in a lower reverse guard steps out with his right foot to the left side of the student and will thrust his shaft end between the arms of the student. He will then rip upward with the shaft end in order to make the student drop his axe or the student will be flipped over.

10.1.12 Beak axe grab: Anglo [29]

The student and master have their axes crossed at the mid shaft.

The master has the cross above the shaft end. The master steps in with his right foot and pushes the student back. He then steps back first with his right then left while drawing the cross of his axe back across the student's mid shaft. He then hooks the beak on the student's mid-shaft and pulls dislodging the student's axe.

10.1.13 Shaft end foot attack counter: Anglo [34]

The student tries to jab the master in the foot with the shaft end.

The master then lifts his foot while backhanding the shaft end with his shaft end. The master can then swing down on the head of the student with the mallet or whatever he chooses.

10.1.14 Shaft end attack: Anglo [35]

The student and the master have their shaft ends crossed, as they are both in lower reverse guardents.

The master then steps forward with his left foot making the student raise his shaft end higher. The master then slides his shaft end back and backhands the student on the back of the top hand. From here the master can knock the axe out of the student's hand or step in and crosscheck the student to the ground.

10.1.15 Shaft end attack: Anglo [41]

If the shaft ends are crossed and the master is strong enough to push the student's shaft end to the master's left side, the master can then step out with his right foot getting along side the student and then using the mid-shaft can crosscheck him to the ground.

10.1.16 Counter Face Forward Attack: Anglo [44]

The Student charges master with his face forward in order to wrestle the master to the ground with his axe across his body.

The master thrusts the shaft end at the student's head making the student raise his axe up and away from the student's body. The master then takes his shaft end and places it under the mid-shaft of the student's axe and strikes at the student's throat with the master's shaft end. The master then can pass the shaft end over the student's head and pull the student to the ground.

10.1.17 Mid-shaft Groin Attack: Anglo [50]

The student rushes the Master holding the axe across his body to deliver a blow with the mid shaft.

The master, in a lower reverse guardant, extends the shaft end between the legs of the student. The master then lifts his front hand to make the student rise off the ground.

Left Hander against Right Hander; ***Note: the master is left handed in this section.***

10.1.18 Left handed swing shaft end block: Anglo [52]

The master in a left-handed stance swings at the student.

The student in a medium, right handed guardant, steps in with his left foot bringing the shaft end across his body and up to intercept the master's blow. The student then steps paste the master, draws his shaft end and swings down on the back of the master's axe with the mallet of the students axe.

10.1.19 Left handed point attack counter: Anglo [60]

The left-handed master comes at the student with a thrust of the point to the student's head.

The student in a reverse guardant can use the shaft end of his axe to knock aside the thrusts of the master.

If the master overextends to the student's left side, the student can then swing the mallet down upon the master in such a way to make sure that he doesn't become out of position.

10.1.20 Knee attack on a left hander: Anglo [61]

The student's mallet blow to the master's head was blocked by the master's mid shaft.

The student fakes another blow to the master's head so that he goes into the upper guard. The student then swings his axe down into a lower hanging guard and swings at the back of the master's knee. The student then pulls forward to pull the master off guard.

10.1.21 Knee attack counter: Anglo [62,63]

The student tries the knee attack mentioned above.

The master steps forward with his left leg to hit the master's knee upon the cross of the student's axe. The master then thrusts the shaft end of his axe to the student's head.

10.1.22 Left handed point attack counter: Anglo [64]

The master comes at the student with his point forward.

The student, in a lower reverse guardant, pushes the attacks to his sides with the shaft end of his axe.

When the master comes at the student's right side with his point, the student blocks it and runs the shaft of his axe through the cross of the master's axe while stepping forward with the right foot, placing the foot between the legs of the master and behind the master's left foot.

The student then checks the master with the mid-shaft to the ground.

10.1.23 Mallet attack from crossed shaft ends: Anglo [66]

The master and the student have their shaft ends crossed**.**

The student then steps back with his left foot and gives a blow to the master's hands with the mallet of his axe.

10.1.24 Mid-shaft Crosscheck: Anglo [68]

The master thrusts at the student with the point.

The student, in a lower reverse guardant, backhands the cross of the master's axe with the shaft end of the student's axe directing the thrust off to the student's right side. The student then steps forward with his right foot and checks the master on the side of the shoulder with the mid-shaft to throw him down.

10.1.25 Shaft end attack: Anglo [70,71]

The master comes at the student carrying his shaft end low and forward.

The student forehands the master's shaft end with his shaft end and knocks the master's shaft end off to the master's right side. The student then steps into the master and places his shaft end between the legs of the master and lifts to raise the master off the ground and open him up to attack.

The master realizes that he's in trouble recoils and pushes the student away with the shaft end of his axe, neutralizing the attack.

10.1.26 Left hander face forward attack: Anglo [72]

The master comes at the student face forward.

The student with his shaft end high in a lower reverse guardant gets his shaft end above the master's and thrusts through to the right armpit of the master and directs the shaft end up over the master's right shoulder for an arm lock. By pressing the shaft end down upon the back of the master, the student remains in control of the situation.

10.2: Spear Sequences

10.2.1 Throwing the Spear: Tobler S 55r.1; R 91r.1 (page 81)

The master grasps the spear in his right hand, raises it above his head and throws it at the student. He then draws his sword and rushes the student.

10.2.2 Pulling Technique: Tobler 11.25.ff (page 149)

Place both hands on the lower section of the spear with the left hand in front of the other. Align the thumbs with a tight grip on the backhand. Draw the spear though the left hand. This is Pulling. The thrust is done by pushing the backhand through to the top hand.

10.2.3 Planting and Pulling with the Spear in Dueling: Tobler S55r.1; R91r.2 (page 81)

The master in a low guard, thrusts at the student's head with out stretched arms.

The student then thrusts likewise at the master.

The master, with his lance under the student's, goes into the high hanging guard, both warding off the student's attack and allowing him to strike the student from above.

The student realizing that he is in trouble, pulls his spear and places it in a target opening and crowds the master.

10.2.4 How One Should Pull: Tobler S55v.1; R91v.1 (page 82)

The master thrusts at the student.

The student parries the thrust by backhanding the master's spear while not over extending.

The master realizes that he must be patient and look for an opening; he again thrusts at the student.

The student strongly parries the master's thrust and over extends his spear tip outward.

The master then pulls his spear quickly and thrusts at the other side of the student.

10.2.5 How One Should Counter the Pulling: Tobler S 55v.2; R 92r.1 (page 82)

The master thrusts at the student.

The student parries the master's spear off to the student's side while directing the tip of the spear at the head of the master.

The master pulls his spear.

The student steps into the master and pushes his spear into the master

The master turns his side to the student in order to flee.

The student grabs the master's arm and applies wrestling techniques.

Note: Master throws away his spear and draws his sword.

10.2.6 Technique 1: Tobler S 57v.1; R 93v.2

The student is holding the spear close to the head in the high guard.

The master is in the left knee guard leaving his head open to attack

The student thrusts his spear at the master's head.

The master parries the thrust going into the high guard. From there he unsuccessfully strikes out at the student. He then releases his grip on the sword and begins wrestling the student.

10.2.7 Technique 2: Tobler S 57v.2; no R

The student is holding the spear close to the head in the low guard

The master holds his sword in the low guard.

The student thrusts his spear from the low position.

The master parries the thrust stepping into the student and placing the pommel on the student's right shoulder. Keeping his body inside the range of the spear, the master steps with his right foot behind the left foot of the student and pulls the student over his knee with the pommel.

10.2.8 Technique 3: Tobler S 58r.1; R 94v.1

The student has the spear in the high guard with the tip extended away from his body. He thrusts at the master.

The master in a guard knocks aside the thrust with his left hand, and then quickly gets back into position (putts his left hand back on his blade) to strike at the student.

10.2.9 Technique 4: Tobler S 58r.2; R 95r.1

The student has the spear in the low guard with the tip extended away from his body. He thrusts at the master below the waist.

The master grabs the shaft of the student's spear and holds it firmly not letting it strike him while he strikes out at the student below the waist.

The student jerks his spear back to get the master to release his grip.

The master lets the spear go and allows the student to expose his side to the master

The master then quickly gets his left hand on his blade and strikes the student.

Longsword

By: Brandon Vogel

1. Overview

The longsword (known also as the ‘hand and a half’ sword or ‘bastard sword’) evolved from earlier, single-handed war swords during the second half of the Middle Ages. The blade varied in length between 70 and 100 centimeters, and was typically double edged. The typical longsword was intended to both cut and thrust, although there are instances of blades unsharpened along their length, but with a narrow and sharpened tip. Blade designs varied; some blades were straight until tapering to a point, others were tapered along the entire length. (Edge & Paddock, p. 87, 124) The crossbar, or quillions, varied dramatically in design but not in purpose: to offer hand protection. The crossbar is also seen used offensively in disarming and pinning techniques. The grip was designed to accommodate one or two hands. Grips were most commonly made of wood wrapped in a softer, flexible material such as leather or cord. More valuable materials may also have been used. At the end of the weapon, a pommel counterbalanced the weight of the blade. Pommels were normally of metal, though semi-precious stones were also used. The entire weapon typically weighed between three and five pounds. Carrying a longsword was a mark of distinction and a symbol of knighthood through the Middle Ages. In fact, several European cities became famous for the quality of their blades. In particular, Cologne in Germany and, at a later date, Toledo in Spain fall under this heading. (Blair p. 2, 3, 18, 19)

2. Sources:

2.1 The Sources

The primary longsword text used here with regards to armored combat is the Starhemberg Fechtbuch (dated from 1452), particularly the commentaries on the Liechtenauer verses. Other documents of particular interest are the Gladiatoria text (composed between 1400 and 1450), the Berlin Fechtbuch (post-1500), the Talhoffer Fechtbuchs (1459), and Czynner's Fechtbuch (1538).

2.2. Manuscripts:

"Berlin Fechtbuch (A 83)" (after 1500). Berlin, Staatsbibliothek Preussischer Kulturbesitz Libr. pict. A 83. Refs: Hils #12 (p. 43); Wierschin #1. 7r-32v has images of Blossfechten, without text.

Czynner, Hans (1538). Graz, Universitätsbibliothek Ms. 963. Refs: Hils #22 (p. 66). Online version on AEMMA website. MS; German text
1r-51r: Armored cbt with longsword. Text and image on ea page
74v-89r: More techniques, still text only
90r: "12 Rules for the combatant"

Crakow "Gladiatoria" (1400-50). Crakow, Jagellonische Bibliothek Ms. germ. quart. 16 (formerly Berlin Ms. germ. quart. 16). Refs: Hils #28 (p. 79); Wierschin #2. Covers armored combat with longsword

Mair, Paulus Hector (?c. 1550). "Fechtbuch." Vienna, Österreichische Nationalbibliothek, Cod. Vindob. 10825 and 10826. Online version on AEMMA website. Refs: Hils #51 (p. 127); Wierschin 41.

Kal, Paulus (?1471). Munich, Bayerische Staatsbibliothek Cgm 1507. A protege of the duke of Bavaria. Refs: Hils #32 (p. 87); Wierschin #27. Includes armored, judicial combat, longsword

Starhemberg Fechtbuch ("von Danzig Fechtbuch") (1452). Rome, Biblioteca dell'Academica Nazionale dei Lincei e Corsiniana; Bibliotheca Vaticana MS 44 A 8 (Cod. Vatican. Nr. 1449). Portions of the manuscript attributed to Peter von Danzig. Transcription by Grzegorz Zabinski at www.freifechter.org/cgi-bin/FFshwcls.pl/vondanzig. Refs: Hils #42 (p. 110); Wierschin #31.

Talhoffer, Hans (1459). "Fechtbuch." Copenhagen, Royal Library Thott 290 2o. Refs: Hils #27 (p. 74). Liber de ingeniis with substantial Fechtbuch content: armored, mounted, longsword, judicial combat, etc.

Talhoffer, Hans (1459). "Fechtbuch." Berlin, Kupferstichkabinett der Stiftung Preussisher Kulturbesitz 78 A 15. Refs: Hils #11 (p. 41).

2.3. Electronic Materials

Higgins Armory Sword Guild Introduction to German Longsword

(CD-ROM 2002-2004 Forgeng, Lord, Millman, Short)

AEMMA (Website 2002). Academy of European Medieval Martial Arts. Includes facsimiles of Ringeck, Mair (Vienna ms), Talhoffer (Copenhagen ms), Talhoffer 1467, Codex Wallerstein, Goliath, Lebkommer, Sutor

2.4. Modern Printed Materials

Christian H. Tobler: *Secrets of German Medieval Swordmanship: Sigmund Ringeck's Commentaries on Liechtenauer's Verse"(Sigmund Ringeck, c1440),* Chivalry Bookshelf, February 2002

Porzio, Luca (March 1 2002) *Arte Gladiatora Dimicandi.* Chivalry Bookshelf. A modern explanation of the techniques of the Italian master Vadi.

Anglo, Sydney (Aug. 1 2000) *Martial Arts of Renaissance Europe.* Yale University Press. Describes many forms of medieval combat between the 15th and 18th centuries.

Edge, David; Paddock, John Miles (Jul. 26, 1993) *Arms & Armor of the Medieval Knight.* Crescent Pub.

An extensive resource on general arms and armor of the period.

Blair, Claude: *European and American Arms (1962)* B.T. Bratsford Ltd, London

A general overview of the longsword as a weapon, technical specifications.

2.5. Professional Contacts:

Christian Tobler (torveshal@aol.com)

3. Parts of the Weapon

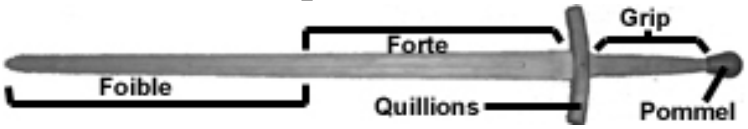
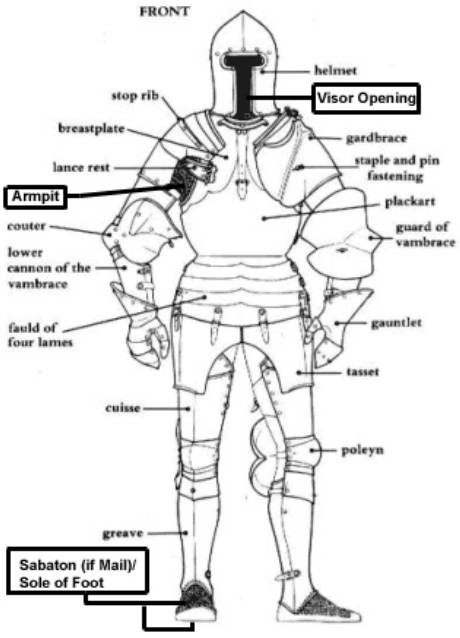


Fig. 6: Diagram of a wooden practice longsword.

The longsword is divided into three main sections: the blade, the quillions (or crossbar), and the hilt. Among these, there are further subdivisions. The blade is comprised of the forte and

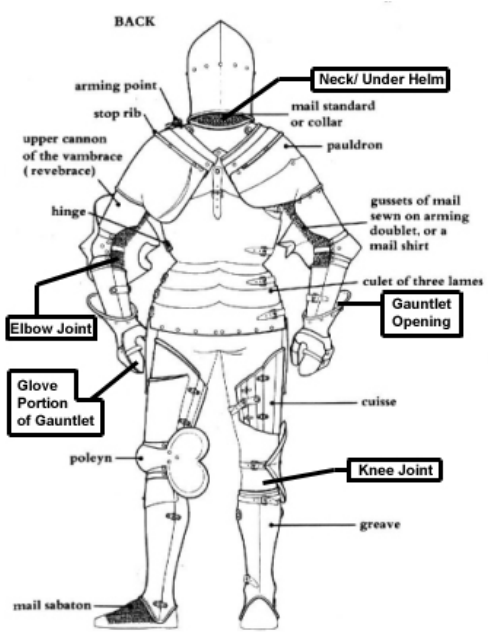
foible, the former being the first half of the blade closer to the hilt and the latter being the second half of the blade that comes to a point. (Higgins Intro) The forte is mainly used to parry, while the foible and point are the primary offense. The quillions serve to prevent an opponent's blade from slipping down onto your grip, and are found in a variety of designs and patterns, some being of more practicality than others. They may be used to ensnare an oncoming weapon, strike an opponent, or trip an opponent. The hilt is divided into the grip (also known as the haft) and pommel. The grip is the traditional held portion of the hilt, typically constructed of wood wrapped in some softer material such as leather or cord. The pommel is a weighted attachment to the end of the grip, and serves to counter-balance the weight of the blade. Pommels may be constructed of a variety of materials, and are found in numerous designs, the most common being a rounded disc. The pommel may be used offensively as well. (Blair p. 2, 3, 18, 19)



4. Targets and Goals

As with any variation of armored combat, the targets of halfswording are any apparent vulnerabilities in the opponent's armor. The armpits and back

of the thigh provide the most obvious targets, as they are protected solely by mail as opposed to a plate covering. The face also presents a target. A thin blade could easily find its way under the front of a helm or sallet, and the back of the neck (also underneath the helm) also provided a path for a well-aimed thrust. The sole of the foot was also unarmored, if one had access to it. Other areas where there are vulnerabilities include the elbows and knees, as well as the back of the shoulders. (Tobler 287-289) (S 67v)



When using the haft of the weapon offensively, the vulnerabilities changed slightly. A stout blow to the armored head with the pommel could cause disorientation, allowing for a distinct advantage. The crossbar could be used to hook around the leg of an opponent, tripping them if the weapon were pulled. A blow to the groin would cause immense pain as well. There are several main goals of halfsword combat. The first goal is to put the opponent to the ground. An opponent on the ground cannot fight back effectively, and may be either subdued with wrestling techniques and captured or set upon with a dagger. The second goal is to disarm them, for an opponent who is unarmed or armed with a dagger is at a serious disadvantage to a combatant retaining their longsword, and is likely to yield. The third goal is to kill the opponent outright, using the longsword to penetrate the exposed mail of the armor.

5. Grip

In the halfswording techniques characteristic of armored combat, the right hand firmly grasps the haft of the weapon under the crossbar, while the left is positioned about halfway up the blade. Both palms should point away from wielder's face. It should be noted that in certain illustrations and techniques, the front palm is referenced as facing up, so this style is also acceptable as well. Depending on the particular technique, other grip positions are possible, however, in the standard guards, this is the proper grip.

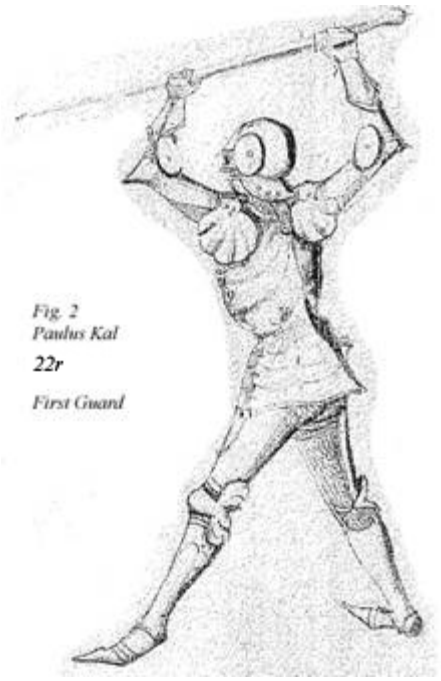


Fig. 2
Paulus Kal
22r
First Guard

6. Tactics

Armored longsword tactics vary amongst the different stances and sequences. However, what remains constant throughout is a strong desire to maintain the initiative. An opponent who is defending against an attack has to focus on simultaneously parrying and regaining the initiative, which places an advantage on the attacker. The text, while dealing with defensive tactics, sees these as a path to counterattack.

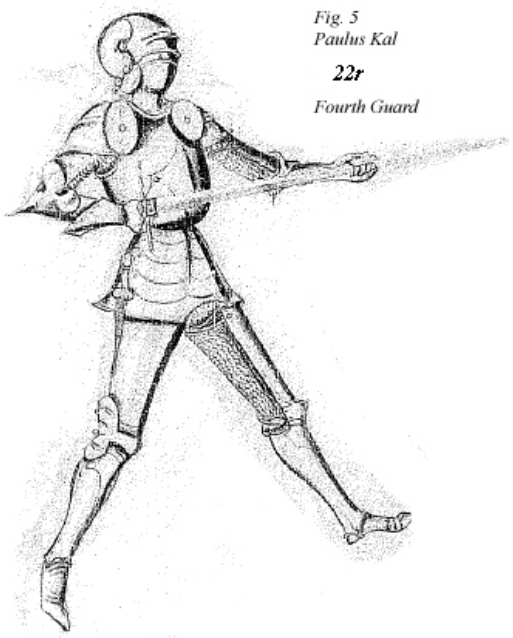


Fig. 5
Paulus Kal
22r
Fourth Guard

7. Footwork

In the normal stances of halfsword combat, the left leg leads, the foot pointing towards the opponent, while the right leg remains back. In addition to stepping forward and back with the ebb and flow of combat with the feet in roughly the same relative positions, stepping back with the left foot as a retreat or dodge tactic was also a normal part of the duel. During grappling, foot and leg placement was crucial not only for leverage, but also for attempts at casting the opponent off balance and hence, to the ground. It is important to note that the Starhemberg Fechtbuch emphasizes economy of footwork, such that an armored combatant does not tire. In fact, it suggests that during combat, opponents should only take one step forward and one step back, as needed. (S 68v)

8. Guards

Liechtenauer's verse suggests that the proper stance for armored longsword combat is, for those who are right handed, with the left leg forward and right leg back. These principles remain true throughout all the main guards, although the position of the hands vary.

In the **first guard**, also known as the **high guard**, the sword is grasped by the hilt with the right hand, while the left hand is positioned halfway up the blade. The right arm is raised and behind the head, with the elbow set more or less at a ninety-degree angle. The point of the

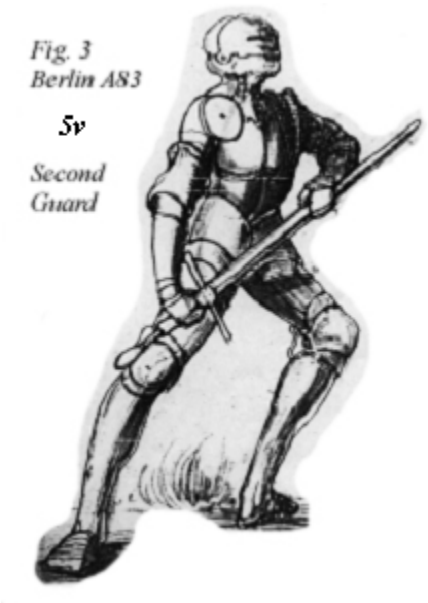


Fig. 3
Berlin A83
5v
Second Guard

blade should be aimed at the opponent's face, setting the blade at a slight downward angle (assuming the two combatants are of similar height). (S 62r) (Tobler 319)

In the **second guard**, or **low guard**, the relative positions of the hands are the same. However, rather than holding the sword aloft, the sword should hang down to the right side of the body. The right hand and grip should be roughly even with the right thigh, the pommel down towards the knee. The blade should be angled up, again with the point towards the opponent's face. (S 63v) (Tobler 327)

The **third guard**, which can best be described as **knee guard**, shifts the weapon to a horizontal orientation over the left knee and across the body. The right hand remains in place, although the left hand slides down to a position about a third of the way from the blade's point. This provides better leverage when parrying from this position. The accompanying illustration does not seem quite correct, however, the stylized nature of some of the illustrations could be at fault here. (S 66v) (Tobler 337)

The **fourth guard** shall be referred to as **point guard**. The relative positions of the hands on the sword remain the same. However, from the low guard, the back (right) arm is raised substantially, and the left arm raised slightly to create an almost horizontal orientation. The weapon is pushed slightly further towards the opponent, with the pommel under the armpit and the quillions in line with the chest. The position is similar to what one might expect with a spear or lance. (S 67v) (Tobler 340)

9. Purposes and Contexts of the Practice

The contexts of armored longsword combat are widely varied. On the battlefield, the longsword provided a secondary weapon to the lance. After a lance had been lost or broken, the sword could be used from horseback. Once dismounted, a knight would revert to a weapon appropriate to the situation they were facing. A longsword provided versatility, being useful against unarmored and armored opponents armed a multitude of ways.

In addition to traditional battlefield applications, it was also practiced in the judicial duel setting. Often, rather than settle disputes themselves, nobles would select a champion to represent them in a duel. A victory proved the case of the represented noble. Ringeck's interpretations state that in preparation for an armored judicial duel, one should be equipped with a spear, a sword, and a dagger. (Tobler 291)

10. Conventions of the Practice

The medieval knight was a specialized soldier under his lord. They were trained from a young age to fulfill this role. Thus, the art of armored longsword combat (referred to as 'halfswording' due to the left hand placement halfway up the blade) would have been a necessity to perform their duties. While an armored knight would not necessarily have to be rigorously trained against unarmored assailants, defeating an armored opponent presents much more of a problem, and thus special techniques were developed.

11. The Shape of Combat

In the Liechtenauer tradition, armored longsword combat was presented as a series of attacks and suitable counters to that attack. A string of these would be presented as a single sequence to be repeated and practiced. Any one attack can parent a number of sequences, depending on what counter is used, and the opponent's reaction to that counter.

12. Distance

Halfsword dueling was largely a close-quarters affair. Opponents would normally stand not more than a sword and a half-length away in order to remain within striking distance. (S 68v) Grappling and pinning techniques were frequently used in conjunction with swordplay, and thus quite often combatants would find themselves in extremely close proximity. This was often the case when the goal was to subdue the opponent for ransom rather than kill them outright.

13. General Attacks

1. Thrusting

Thrusting is the primary method of attack with the longsword from the High and Low Guards. Using the forward hand halfway up the blade to steady and aim the point allows for a greater degree of control while driving the weapon forward. Slashing is practically useless

against an opponent in plate armor; however, a thrust may slip between plates and penetrate mail. Once a thrust has landed, crowding the opponent while driving the blade deeper considerably increases the damage inflicted.

2. Pommel Strikes

Plate armor does not protect well against bludgeoning attacks. Pommel strikes to any location on an opponent's body cause pain, and in addition, a strike to the head can disorient and confuse an opponent. Attacking an opponent's hand or arm with the pommel can disarm them, or injure them badly enough to hamper any further attacks they might attempt.

3. Crossbar Attacks

The crossbar may be used offensively to hook around an opponent's sword or leg. Once in this situation, a sharp pull on the weapon can either disarm the opponent (in the former case) or throw them off-balance, causing them to fall (in the latter case).

4. Leverage

The longsword, in close-quarter scenarios, is often used to gain leverage when throwing an opponent. Rather than dropping the weapon to grapple with one's arms, force applied to an opponent over the length of the sword could be combined with leg placement to send them off-balance and falling to the ground. Excellent examples of this are the techniques where the pommel is placed at the opponent's neck and used to force him down over the second combatant's leg. Another particular example worth noting is from S 65r 1, where the hilt of the sword is placed at the opponent's shoulder and the point down through their legs to the back of

their knee. This allows a large area of force to be distributed in an attempt to throw the opponent off balance. In addition, the blade can be used to deflect an incoming attack, and then pry the opponent's arms and/or sword out of position, providing the opportunity for a counter attack.

5. Wrestling Techniques

Many grappling and throwing techniques are integrated into the longsword combat system. These are mainly an attempt to send the opponent off balance or to the ground and gain an advantage. Some are used in conjunction with the longsword, such as throwing the opponent forward and off-balance so that the area up under the pauldrons presents itself as a target, while others are intended as a transition into dagger play and wrestling.

14. General Defenses

1. Parrying

Parrying is the primary method of protection from an oncoming attack. Either using one's own blade or an armored forearm, deflecting the opponent's blade is crucial to regaining the initiative. Parrying may be performed either weakly or strongly, each method with it's own advantages. A strong parry places the opponent's weapon farther out of alignment, allowing more time to counter attack, while a weak parry only displaces the opponent's blade enough to deflect it away from it's target, requiring less effort than the strong parry.

2. Blade Catches

Catching an opponent's blade on your own is a common device to prevent their blade from finding its mark. A quick counterthrust in the same manner as the initial thrust will halt both attacks between the combatants. In addition, when an opponent strikes with their pommel, a blade catch is the preferred defense because it halts the attack and leaves the opponent in a position where they are unable to make further attacks quickly.

15. Techniques:

1. Student is in High Guard

S 62r.1 Master thrusts at front armpit from Low Guard.

Student counters by thrusting to Master's face. This denies the Master's strike by reducing the target profile and counter-attacks.

S 62r.2 Master thrusts at Student's face from Low Guard.

Student thrusts down with his blade between the Master's hands. He pushes down on the hilt, angling his blade into thrusting position, and thrusts to the Master's back armpit.

S 62v.1 Student thrusts at Master's face.

Master parries from Low Guard with the front half of his sword, and attempts to thrust at Student's face.

Student grabs the point of Master's sword with his left hand and, dropping his own sword, punches him in the genitals with the right.

Alternately:

Master attempts to pull his sword from Student's grasp.

Student releases Master's sword, sending him off-balance. Student regains the grip on his own blade, and is free to attack Master.

S 62v.2 Student thrusts at Master's face.

Master parries Student's thrust from Low Guard by pushing the blade outside Master's right. to

Student steps forward, placing his right leg behind Master's left leg. He then brings his pommel around Master's neck, and pulling it back to send Master falling backwards over his right leg.

S 62v.3 ***Alternately:***

Student attempts to place his pommel at Master's neck.

Master drops his sword. Master then grabs Student's right wrist with his right hand, and grabs Student's right elbow with his left hand. Master steps out away from the Student with his right leg, and then either breaks his arm by pushing forward on the elbow and back on the elbow, or throws him forward over his left leg by pushing forward on both.

S 63r.1 ***Alternately:***

Student attempts to place his pommel at Master's neck.

Master releases his grip on the blade with his left hand. Master then grabs the Student's right elbow with his left hand and pushes Student forward. Master then regains his grip on the weapon with his left hand and thrusts at Student from behind.

S 63r.2 ***Alternately:***

Student attempts to place his pommel at Master's neck.

Master drops his sword. He reaches up with his left hand and grabs Student's right arm, then pivots on his left foot away from him. Master then pulls Student forward and over his left leg.

S 63r.3 ***Alternately:***

Student attempts to place his pommel at Master's neck.

Master grabs Student's sword by the hilt, behind Student's right hand, with his own left. Master then forces the Student's sword down and away, and then is free to attack with his own sword.

S 63r.4 ***Alternately:***

Student attempts to place his pommel at Master's neck.

Master drives his own sword through the gap between Student's body and right armpit. He then pushes down on his pommel, forcing Student's blade down and away, and then thrusts upward to Student's right armpit.

S 63v.1 Student thrusts to Master's face.

Master parries with a thrust upwards from Low Guard, his left hand touching the blade between Student's hands.

Student pushes his hilt either up or down to orient his weapon between Master's arms. He then pulls hard to the right, wrenching Master's blade either out of his hands or away from his body, and then is free to thrust at Master's face or armpit.

2. Student is in Low Guard

S 63v.2 Master thrusts to Student's face from High Guard.

Student thrusts to Master's forward palm or forward armpit to counter-attack.

S 64r.1 Master thrusts to Student's face from High Guard.

Student grabs the front half of Master's sword with his left hand. Student then tucks the hilt of his sword to his chest (as in Point Guard), and then thrusts to Master's forward armpit or face.

S 64r.2 Student thrusts to Master's face.

Master simultaneously thrusts from Low Guard to parry.

Student grabs Master's left hand with his own left hand. Student then drops his sword, grabs Master's right elbow with his right hand, and by twisting, breaks Master's arm.

S64r.3 *Alternately:*

Student grabs Master's left hand with his own left hand.

Master places his blade forward and over Student's left hand. Master then uses his blade to force Student's hand downwards and then either thrusts to Student's right armpit, or hooks his pommel around Student's neck and right shoulder and pulls him backward over his right knee.

S 64r.4 ***Alternately:***

Master has placed his pommel around Student's neck.

Student pivots to his right on his left foot. Student then uses his crossbar to hook behind Master's right knee, and by pulling to the outside, trips him.

S 64v.1 Master thrusts at Student from High Guard.

Student thrusts between Master's front hand and blade, against Master's left arm, from the outside. He then pushes his hilt towards the ground, forcing Master's front arm down, and then thrusts to Master's exposed back armpit.

S 64v.2 Student thrusts at Master's face.

Master counter-thrusts at Student from High Guard, with his blade between Student's hands. He then attempts to force Student's front hand and blade down by pushing his hilt down.

Student counters by raising his sword into High Guard and thrusting to Master's face.

S 64v.3 Student thrusts at Master's face.

Master counter-thrusts from Low Guard to parry Student's blade.

Student moves up into High Guard and thrusts to Master's face.

Alternately:

Student moves up into High Guard and attempts to thrust to Master's face.

Master parries Student's blade by raising his left arm with intent to direct it off-course.

Student pulls his blade back, thrusts to Master's exposed left armpit, and steps forward.

S 65r.1 Student thrusts to Master's face.

Master parries to his left from Low Guard.

Student pulls his sword underneath Master's to the inside and thrusts.

Master parries to his right.

Student steps in towards Master and jabs Master's left armpit with his hilt. Student then places the forward flat of the blade through Master's legs and against the back knee of his left leg, while placing the hilt at Master's left shoulder. Student then pushes up and forward with both ends of his sword, sending Master off-balance and falling.

S 65r.2 ***Alternately:***

Student places the forward flat of the blade through Master's legs and against the back knee of his left leg.

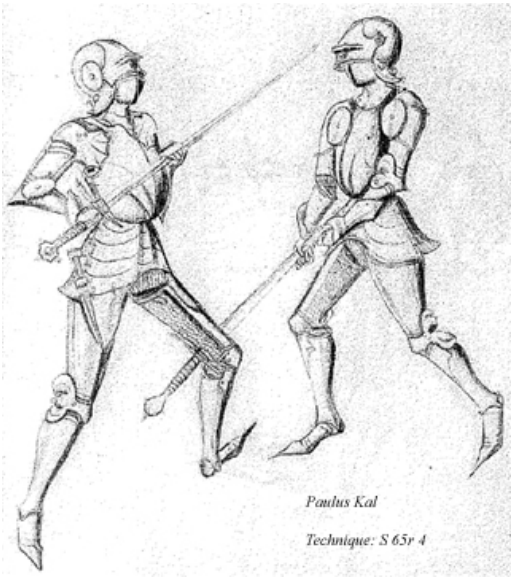
Master grabs Student's right elbow with his left hand and either pushes him away (and thus is free to attack), or grabs Student's

right wrist with his right hand and breaks his arm/throws him.

S 65r.4 Student thrusts to Master's face.

Master parries Student's thrust strongly.

Student uses momentum from Master's parry to switch his hands on the weapon and hook around the back of Master's left knee with his crossbar. Student then steps forward with his right foot, pulls Master's left knee, and pushes against Master's torso with the right side of his body, knocking him to the ground.



S 65v.1 *Alternately:*

Student hooks the back of Master's left knee with his crossbar.

Master grabs Student's right hand with his left, and grabs Student's right elbow with his right hand, and may then break his arm or throw him.

S 65v.2 Student thrusts strongly at Master.

Master counter-thrusts from below, his point in between Student's hands, with intent to wrench Student's weapon away.

Student keeps point aimed at Master's face, while pushing down on Master's right hand with his sword, and is free to attack.

S 65v.3 Student thrusts strongly at Master.

Master uses his left hand to deflect Student's blade away.

Student shifts into High Guard and thrusts to Master's face.

S 65v.4 Student thrusts strongly at Master.

Master counter-thrusts from Low Guard.

Student grabs Master's blade in the middle with his left hand, pinning both blades together. Student then winds under Master's hilt with his own, and quickly steps away while pulling both weapons hard, up, and to his right, disarming Master.

S 66r.1 ***Alternately:***

Student grabs Master's blade in the middle with his left hand.

Master raises his sword into High Guard and thrusts to Student's face or armpit.

S 66r.2 Student thrusts strongly to Master's genitals.

Master deflects Student's sword with his left hand.

Student deflects Master's sword with his left hand. Student then throws Master's blade to the side, regains his grip on his own blade, winds the point over Master's left hand into High Guard, and thrusts to Master's face or armpit.

S 66r.3 Student thrusts to Master's face.

Master deflects Student's blade with his left hand.

Student deflects Master's blade with his left hand. Student then drops his sword with the pommel facing Master, and either grabs Master's left hand with his left, grabs Master's left elbow with his right, and breaks his arm by twisting, or pushes Master's chest with his left hand, while grabbing the back of Master's left knee with his right hand, causing him to fall.

3. Student is in Knee Guard

S 66v.1 Master thrusts at Student's face from High Guard.

Student brings his blade up and parries Master's thrust to his right with the front half of the blade. Student then moves up into High Guard and thrusts at Master's face.

S 66v.2 ***Alternately:***

Master thrusts at Student's face from High Guard.

Student brings his blade up and parries Master's thrust in between his hands. He then wraps his hilt around Master's forward arm and pulls downward. Student then thrusts to Master's armpit or face.

S 67r.1 Master thrusts at Student's face from High Guard.

Student brings his blade up and parries Master's thrust with the hilt of his weapon deflecting the front half of Master's blade. He then moves into High Guard and thrusts to Master's face or armpit.

S 67r.2 Master thrusts at Student's face from High Guard.

Student brings his hilt up behind Master's front hand, deflecting the blade with his left wrist. He then pulls downward with the hilt to break Master's grip on the blade, and thrusts to his armpit or face.

S 67r.3 ***Alternately:***

Student brings his hilt up behind Master's front hand, deflecting the blade with his left wrist. He then pulls downward, but cannot break Master's grip on the blade. Student then wraps his hilt around the outside of Master's left hand, winding the blade around as well, and thrusts to Master's right armpit.

4. **Notes on the Point Guard (S 67r.1, S 67r.2)**

The Point Guard is not a stance in the traditional sense, but rather, the result of a successful thrust from the others. Once the point of the blade has penetrated an opponent's mail, a combatant should immediately go into the fourth guard and begin crowding into the opponent, thus driving the point in and preventing them from making any attacks. The actual crowding technique is dependent on the relative height of the combatants. If the opponent is taller than the combatant whose blade has found it's target, then the combatant should crowd forward, ensuring that his point is penetrating up and into the opponent. If the opponent is shorter, the combatant should allow his right hand to drop down to Low Guard position, and maintain crowding to again ensure that the point is working it's way into the opponent at an upward angle.

5. Freeing

"Freeing" is when a combatant seeks to free their self from the point of an opponent's blade that has worked its way into a vulnerable spot of the armor.

S 69r.1 Both combatants have planted upon each other's armpits.

Master attempts to overpower student with force.

Student grabs Master's left hand and holds it to Master's blade with his own left, then takes his own sword and drives it through between the Master's forward hand and sword. Student then forces the hilt to the ground, angling his blade at Master's face, and breaks Master's arm over his sword with the left hand.

S 69v.1 Master has planted upon Student and attempts to overpower him.

Student then thrusts with both hands from above between the Master's sword and forward hand, and pushes his own hilt towards the ground to angle the blade at Master's right armpit and thrust upon him.

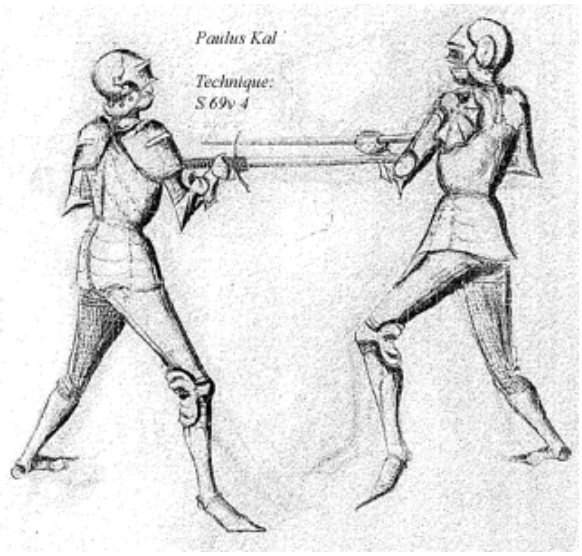
S 69v.2 Master has planted upon Student and begins to crowd him.

Student thrusts to Master's palm from either above or below to break his grip on the blade.

S 69v.3 Master has planted upon Student and begins to crowd him.

Student brings his sword around and thrusts to the gap between Master's gauntlet and hand from behind, driving the blade in deep.

S 69v.4 Both combatants have planted upon each other's left or right shoulders.



If Master has planted upon Student's left shoulder, and Student has planted upon Master's left shoulder, then Student steps backwards with his left foot, freeing himself while maintaining his point in Master. The above technique is also applicable if they have both planted upon each other's right shoulders, with Student stepping back with his right foot.

S 69v.5 Both combatants have planted upon each other's left shoulder.

Student winds his hilt to his chest into Point Guard and crowds forward. This enables him to keep his point in Master while freeing himself by increasing the distance.

6. Parrying Against Pommel Strikes

1. Student is in Knee Guard

S 70r.1 Master attempts to strike Student in the head with the pommel from his right shoulder.

Student raises the front half of his blade into the oncoming blow to deflect it, and then goes into High Guard and thrusts to Master's face.

S 70r.2 Master attempts to strike Student in the head with the pommel from his left shoulder.

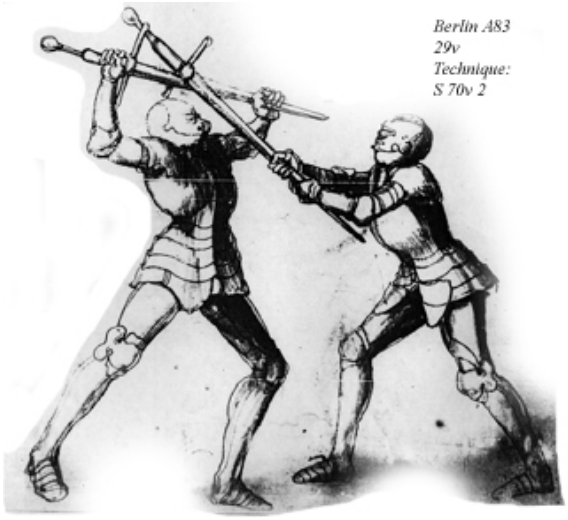
Student raises the front half of his blade into the oncoming blow to deflect it, then thrusts at Master's armpit.

S 70v.1 Master weakly strikes from above with the pommel at Student's head.

Student steps forward and brings his blade up to catch Master's strike in between his hands in the middle of his blade. Student then either goes into High Guard and thrusts to Master's face, or winds his hilt around Master's forward hand and jerks downward, breaking his grip on the weapon, and thrusts to wherever he wishes.

S 70v.2 Master weakly strikes from above with the pommel at Student's head.

Student steps forward and brings his blade up to catch Master's strike in the middle of the blade. Student then winds his own hilt around Master's, and jerks downward, disarming him.



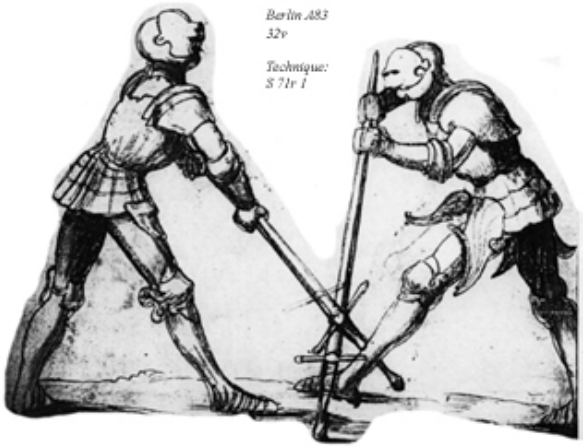
S 70v.3 Master strikes at Student's left knee with his pommel.

Student pushes his hilt towards the ground, and catches Master's strike on the blade. He then winds the hilt underneath Master's own hilt, and jerks upwards and to his own right, disarming him.

2. Student is in any guard

S 71r.1 Master strikes at Student's left ankle with his pommel.

Student strongly grips his own blade with the left hand, and releases his hilt with his right. He swings the hilt down to catch or deflect Master's strike, then immediately rushes forward and attempts to grapple or arm-break.



7. Notes on Striking With the Pommel (S 71v.1)

To correctly strike with the pommel, a combatant should stand ready in High Guard. They should then release the hilt of the weapon with their right hand, and slide it down the blade to meet their left while swinging the weapon over their head. Appropriate targets for this method of attack are the head, shoulders, forward knee, and forward arm/hand.

Wrestling

By: Jason Heller

1. Overview

Wrestling in the Medieval Age was a brutal necessity for any well trained warrior. It was often overlooked as the years progressed and more ritualistic sport combat was introduced into society. For any contemporary of the great masters of the medieval period the knowledge of wrestling was absolutely crucial, as stated by John Locke,

> …a man of courage, who cannot fence at all, and therefore will put all upon one thrust, and not stand parrying, has the odds against a moderate fencer, especially if he has skill in wrestling. And therefore, if any provisions be to be made against such accidents, and a man be to prepare his son for duels, I had much rather mine should be a good wrestler, than an ordinary fencer; which is the most a gentleman can attain to in it, unless he will be constantly in the fencing school, and every day exercising. (Anglo, 176)

It is interesting to note that Locke was making this statement in the seventeenth century after wrestling had become unfashionable in major European cultural centers like France and Spain where more stylized fencing was taking over. Wrestling was also used as a form of exercise and was advocated by many learned men of the time. The techniques used were painstakingly recorded in word and picture in German fechtbuecher from the period.

The techniques for a smaller opponent to defeat a larger opponent in hand-to-hand combat date back to at least the Egyptian dynasties. The earliest recorded wrestling techniques appear on the walls of pharaoh's tombs dating to approximately 2000 BC. The medieval

European masters did not have knowledge of these paintings, but it serves to illustrate that they were not the first ones to invent the idea.

The distinction between wrestling and all-in fighting must be made. Wrestling is a sport that can be used for amusement or exercise. Martin Luther, among others, encouraged wrestling as a sound exercise that would strengthen the body and maintain good health. More particularly, it developed strength, agility, and dexterity. Monks were renowned for their extensive knowledge of, and expertise in, wrestling. A supporter of wrestling was the Emperor Maximilian I. He commissioned the tournament book *Freydal* to display his prowess in all manners of combat and includes sections devoted exclusively to unarmed combat.

Any medieval armored combatant would have carried a variety of weapons into battle, using these as the first option for attack or defense. The warrior would have used weapons such as the longsword, war hammer, poleaxe, and spear to begin with. Many of the moves that were taught by masters would involve disarming a combatant's opponent in order to gain the upper hand. Once one combatant was disarmed he would have invariably attempted to disarm his opponent. If the move was successful the two combatants fighting would be weaponless and all-in fighting would have ensued. The next weapons to be introduced would most likely have been daggers after one person was pinned using wrestling.

All-in fighting is a brutal form of combat that encourages taking advantage of your opponent by any means necessary in order to win a fight and stay alive. All-in fighting was neither accepted nor looked down upon, as a general rule, among either the upper or lower classes. All-in fighting may have been less useful to the knightly classes in warfare, where they would be mounted, but was certainly crucial in a duel or brawl.

It is apparent that all-in fighting was accepted by all masters of weapons as essential to combat. It gave a distinct advantage to those who possessed it and the masters taught their savage techniques throughout the age. One could not always count on having a weapon at the ready when trouble happened, but they could count on their own two hands.

Nearly all the emphasis in all-in fighting was on brawls or duels, but could certainly be applied to combat on the battlefield. During brawls students were encouraged to utilize all of their surroundings to the utmost. There are even illustrations of how to use a mug of ale to blind a combatant's opponent, and others describing various attacks on the groin of an opponent. In field battles the key at the time was to keep a solid formation of troops, so one can see that all-in fighting would not be used as extensively, although one cannot discount the usefulness of being able to fight without a weapon, or grappling with one.

All-in fighting was the last resort of the medieval combatant. If fighting did degenerate to this point the more skilled man was almost always the victor. All-in fighting in armor utilized a more muscular version of un-armored all-in fighting using many similar techniques and aiming to use the armor to the disadvantage of the opponent.

The role of all-in fighting in armored combat was for the warrior who knew how to use it properly to take advantage of his opponent with all the tricks he had available to him. Combat with weapons was concerned mostly with the thrusts, parries, cuts and so forth, while all-in fighting used the entire environment of combatants to their advantage. With all-in fighting a warrior could use himself as the weapon, which truly would have been an advantage if all others were lost. During all-in fighting the practitioner would seek to disable their opponent in any way available, including, arm breaks, finger breaks, eye attacks, groin attacks and various other tricks

to win the advantage. All-in fighting was essential for the armored combatant of the medieval period, without it he was surely shorthanded.

2. Sources

The masters that wrote these pieces struggled with the task of trying to accurately represent complex movement with long pages of text and drawings. The works fall between two extremes with the Starhemberg work containing almost no pictures at all and others relying almost entirely on the skill of the artist to convey their meaning. Nearly all masters agreed that the manuscripts were meant only as a memory aid and could not alone teach the complexities of the moves contained therein. Using these materials scholars today are finally able to accurately represent combat from the medieval period.

The main text for this project is the "Starhemberg" fechtbuch. The sections utilized are those based on the works of German masters Johannes Liechtenauer and Martin Huntfelt. Dated at 1452 the manuscript is composed of 114 leaves of text. The remaining manuscripts used were entirely for their illustrations and they were the German fechtbuecher of Hans Czynner, Paulus Hector Mair, "Gladiatoria", and Jorg Wilhalm dating from the fourteen and fifteen hundreds.

The modern texts used were The Martial Arts of Renaissance Europe from Sydney Anglo and Secrets of German Medieval Swordsmanship by Christian Tobler. The Anglo book gives a good insight into the role of the medieval masters or arms, the creation and illustration of fechtbuchs, dispelling myths of combat, and accurately describing the various weapons for combat. The Tobler book comments on the fighting techniques in the manuscript by Sigmund Ringeck, which is in the Liechtenauer tradition and overlaps heavily with the content of the

Starhemberg Fechtbuch; Tobler's interpretation gives helpful photographs of the combat. I also was able to enlist the aid of Mark Millman, an expert in the field.

Anglo, Sydney (2000). *The Martial Arts of Renaissance Europe*. New Haven: Yale University Press.

Czynner, Hans (1538). Graz, Universitätsbibliothek Ms. 963. Refs: Hils #22 (p. 66). Online version on AEMMA website. MS; German text
1r-51r: Armored cbt with longsword, wrestling, dagger. Text and image on ea page
52r-60v: wrestling devices. Multiple hands, text w/o ills
61r: Merkverse?
61v- 73v: Texts with glossa etc
74r: Coda w date and Czynners name
74v-89r: More techniques, still text only
90r: "12 Rules for the combatant"
120v-122r: more text; Czynners name on 121r.
armored wrestling pages 6, 15-33, 38, 46, 60-64, 73, 77, 79

Mair, Paulus Hector (?c. 1550). "Fechtbuch." Vienna, Österreichische Nationalbibliothek, Cod. Vindob. 10825 and 10826. Online version on AEMMA website. Refs: Hils #51 (p. 127); Wierschin 41. armored wrestling pages 463-469, 493, 496, 507-509, 516

Tobler, Christian (2001). *Secrets of German Medieval Swordsmanship*. Union City, CA: Chivalry Bookshelf. Armored wrestling pages 304-315

Vienna "Gladiatoria" (c. 1430). "Fechtbuch." Vienna, Kunsthistorisches Museum P 5013. Refs: Hils #46 (p. 119). armored wrestling pages 38, 39, 47, 59, 64, 66, 67, 70-73, 87, 99

"von Danzig" (1452). (Starhemberg Fechtbuch) "Fechtbuch." Rome, Biblioteca dell'Academica Nazionale dei Lincei e Corsiniana; Bibliotheca Vaticana MS 44 A 8 (Cod. Vatican. Nr. 1449). Portions of the manuscript attributed to Peter von Danzig. Transcription by Grzegorz Zabinski at www.freifechter.org/cgi-bin/FFshwcls.pl/vondanzig. Refs: Hils #42 (p. 110); Wierschin #31. Liechtenauer's Armored Wrestling 56r-57v, 58v-61r (16 techniques), Martin Huntfelt's Pinning Techniques in Armor 91r-93v (15 techniques).

Wilhalm, Jörg (in part) (1556). Munich, Bayerische Staatsbibliothek Cgm 3712 armored wrestling pages 185-187. Refs: Hils #39 (p. 99); Wierschin #29. Cgm 3711 armored wrestling pages 137-141, 158, 161.

The following are abbreviations that will be used in following sections.

Sources

S = Starhemberg
R = Ringeck
G = Goliath

3. Targets and Purpose

The techniques utilized were throws, strikes, arm breaks, leg breaks, finger breaks, and pins. The main goals were to either bring as much pain on an enemy as possible, or to secure one's weight on top of him so that one could gain dominance. After the enemy was securely pinned on the ground one could go to work with their dagger to kill the enemy.

4. Stance

There was not a set of stances one could adopt in unarmed combat as there were in armed forms of combat. The proper way to stand was with one's weight equally distributed on both feet so balance could be maintained and the chance of one's opponent throwing them decreased. The feet could be either even to each other or staggered. Once contact was initiated one's balance should have been maintained as much as possible except when one used their weight to throw their enemy.

5. Style

Master Ott, who was the wrestling teacher to the Prince of Austria in the 15th century, said that there were three important things in wrestling. The most important thing is skill, the second is quickness, and the third is the proper application of strength. According to Ott the

most important of the three things, though it be labeled the second, is quickness. If you are quicker than your opponent then you can counter, and not fear, his moves.

Ott notes that when you are wrestling a weaker person you should wrestle before, or take the initiative, the most important skill being quickness. When you are equal with your opponent you will be working at the same time as him, both trying to attack and defend each other. The most important skill when you are of equal strength with your opponent is balance. Lastly, when your opponent is stronger than you, you should be working after your opponent looking to use his strength against him. The most important skill in this type of wrestling is your ability to attack the back of his knee. (Starhemberg 100v)

6. Training

Wrestling was used as a way to strengthen young men and increase their agility in the medieval period. A late 16th century schoolmaster Richard Mulcaster extolled its virtues which prepared athletes for other sports, trained soldiers, and made the body stronger and breath better. He separated the forms of wrestling he recommended, both being upright. The first form made the body lose fat, breath healthier, become stronger. The second form was more gentle and also strengthened the body but was better for those just recovering from illness.(Anglo 176)

The teaching of all-in fighting was a much more serious affair as it involved practicing the breaking of bones and striking to vulnerable points on the body. It was outlawed in many cities as the years progressed and could only be taught in the country where even then it was often intruded upon by the law. Despite these obstructions ancient masters still did their best to teach their pupils the art of all-in fighting so that they truly were prepared for battle of the time.

7. Attacks

7.1 Throws

7.1.1 Knee Throw (S 56v.1; R 92v.1)

 (roughly equivalent Gladiatoria 66)

Student has his knee behind Master's, lower legs flush, and pulls Master back over it.

7.1.2 One Armed Hip Throw (S 56v.3; no R?)

Student has his right arm around Master's body and his right foot between Master's feet.

Student can then throw Master over Student's right hip.

7.1.3 Two-Handed Hip Throw Using Arm (S 59v.4; no R?)

Student has both hands on Master's left arm, which is on Student's right shoulder.

Student's right foot is in front of Master's left.

Student pulls down with both arms twisting to his left and throwing Master over Student's right hip.

7.1.4 Arm Breaking Throw (S 59v.1; R 96v.1?)

Student progresses to Elbow Break technique resulting in a throw instead of a break.

7.1.5 Twisting Arm Throw (S 60r.1; R 97r.1)

Master has his left arm wrapped around Student's body and Student has his right arm clamped onto Master's left arm.

Student steps in front of Master's left foot with his right and twists left throwing Master.

7.2 Breaks

7.2.1 Elbow Break (S 59r.2; R 96v.1?)


(Czynner 21)

Student has Master's arm straight, pushing up with the left hand on the elbow, and down with the right hand on the wrist.

7.2.2 Chest-weighted Arm Break (S 59v.2; no R?)

 (Czynner 28)

Student stands behind Master with his right hand on Master's wrist and the left hand on the elbow, arm straight.

By pushing down with the weight of Student's chest the arm can break.

7.2.3 Wrist Break (S 59v.3; R 96v.2)

Student wraps his right arm around Master's left arm at the elbow and presses down with his left hand at the wrist breaking it.

7.2.4 Kneeling Arm Break (S 60v.2; no R?)

Master is on his stomach on the ground with an outstretched arm.

Student kneels on the arm and pulls upward breaking it.

7.2.5 Ground Shoulder Break (S 60v.3; no R?)

Student has Master's on his back while they are on the ground.

Student lifts up on Master's arm breaking it at the shoulder.

7.2.6 Finger Break (S 60v.1; R 97v.1)

Student breaks Master's outstretched finger by pushing it against the joint.

7.3 Locks

7.3.1 Standing Leg Lock (S 56v.2; R 93r.1)

Student has Master's leg locked between his, having one leg in front and the other behind Master's leg.

7.3.2 Chest-pinned Arm Lock (S 59r.1; R 96r.1)

Student pins Master's arm to his own chest using both hands to press it down.

7.3.3 Behind-the-Back Arm Lock (S 92v.3)

 (roughly equivalent Gladiatoria 31v)

Student has Master's arm behind his back at a ninety degree angle with one hand on the wrist and one on the elbow.

7.4 Strikes

7.4.1 Head Strike (S 56v.2; R 93r.1)

A strike to the face of opponent with one's fist.

7.4.2 Knee Strike (S 60r.2; G217v ill; R 97r.2)

Student kicks Master in the knee, when standing, hyper-extending it.

7.4.3 Standing Groin Strike (S 60r.2; G217v ill; R 97r.2)

Student kicks Master in the groin.

7.4.4 Kneeling Groin Strike (S 91v.2)

Master is on his back and student pulls his legs apart dropping onto Master's groin with one knee.

7.4.5 Eye Strike (S 91v.5, S 91v.6)

Master's visor is open and Student pokes him in the eye.

8. Sequences

In the following photographs the student is in red.

Many sequences begin with grappling, which is similar to the following picture.

 (Gladiatoria 46v)

Starhemberg Wrestling Techniques

S 56v.1; R 92v.1 "This is a Wrestling Technique"

 (roughly equivalent Gladiatoria 32v)

Student and Master stand facing each other with their feet even.

Student pushes or pulls Master so one of Master's legs is forward.

If it is his left leg Student moves his right foot behind Master's left foot so that the inside of Student's knee is touching the back of Master's knee.

Student grabs Master's shoulders with both hands and pulls Master back over Student's knee.

S 56v.2; R 93r.1 "Another Wrestling Technique"

Student has already moved his right foot behind Master's left foot as in the previous technique. Student brings his left leg in front of Master's left leg pinning Master's leg between his own. Student pushes in Master's face with his left hand and pulls Master backwards over his knee by Master's shoulder with his right hand.

S 56v.3; no R? "Another Wrestling Technique"

Student and Master stand facing each other, Master has his left foot forward.

Student moves his right foot in front of and between both of Master's feet.

Student moves his right arm under Master's left arm and around Master's body pulling Master in to Student's right hip.

Student then throws Master forward using his hip as leverage.

S 57r.1; R 93v.1 "This is the Text and Gloss of How One Should Know How to Use All Wrestling on Both Sides"

You should know how to use all techniques on both sides.

For example: If Master has his left foot forward and Student moves in to put his right foot behind Master's left, and Master steps back with his left foot, Student quickly moves his left foot behind Master's right foot.

Student can then throw Master backwards over Student's left knee.

Starhemberg's Forbidden Wrestling

S 59r.1; R 96r.1 "The First Wrestling Technique"

Student and Master are standing up grappling with each other.

Master tries to grab Student to push or pull him.

Student throws his right arm outside and over Master's left arm and grabs Master's arm near the wrist with his left hand.

Student then pushes Master's arm into his chest with both hands.

Student moves his right foot behind Master's left foot and throws Master backwards over Student's right knee.

S 59r.2; R 96v.1? This is an Arm Break


(Czynner 21)

Master and Student are grappling.

Master grabs Student's arm with his hand in a weak grip.

Student grabs Master's right arm with his right hand and pushes Master's right elbow up with Student's left hand.

Student then bends Master's right arm by pushing down with Student's right hand and up with Student's left hand.

Student will either break Master's arm or throw Master before him. (see below)

S 59v.1; R 96v.1? "A Wrestling Technique and Arm Break"

Master and Student are grappling as in the above technique and progress to where Student has Master's right arm with Student's left hand on Master's elbow and his right hand on Master's wrist.

Student moves his left foot in front of Master's right foot and throws Master over his foot pushing on Master's arm in the same manner as in the above technique.

S 59v.2; no R?

If Student does not throw Master he will break Master's arm by using the weight of and pressing down with Student's chest. (refer to 59r.2)

S 59v.3; R 96v.2 "Another Wrestling Technique"

Student and Master are standing up and grappling.

Student grabs Master's right arm with Student's left hand above the wrist and pulls Master to Student on his left side.

Student throws his right arm above Master's right arm at the crook in the elbow wrapping his arm around Master's arm and holding it tight.

Student pushes down with his left hand on Master's arm breaking it.

Student moves his right foot behind Master's right foot and throws Master over his right hip.

S 59v.4; no R? "This is Another Wrestling Technique"

Student and Master are standing and grappling.

Master puts his left hand over Student's right shoulder and around his neck.

Student puts his right hand over Master's left arm at the elbow.

Student brings his left hand to Master's left arm and moves Student's right foot in front of Master's left.

Student presses down with both hands and twists away from Master to Student's left side throwing Master over Student's right hip.

S 60r.1; R 97r.1 "Another Wrestling Technique"

Student and Master are standing and grappling.

Master puts his left arm under Student's right arm and around Student's body.

Student throws his right arm down onto the outside of Master's left elbow.

Student steps with his right foot in front of Master's left foot and turns away to his left throwing Master to Student's left side.

S 60r.2; G217v ill; R 97r.2 "A Wrestling Technique and Murder-Jab [*Mortstoß*]"

Student and Master are standing and are grasping each other's arms.

Master has one leg forward and Student kicks Master to that knee hyper-extending it.

Or Student can kick or knee Master in the testicles making sure Master does not grab and hold Student's leg.

Or Student has one leg forward and bends that knee so that Master can not kick Student in his knee and injure it.

S 60v.1; R 97v.1 “Another Wrestling Technique”

Student and Master are standing and grappling.

Master attempts to grab Student with his fingers outstretched and Student grabs one of Master’s fingers.

Student breaks Master’s finger upwards.

S 60v.2; no R? “This is an Arm Break”

Student throws Master and Master is lying on his stomach with an arm extended outwards on the ground.

Student kneels on Master’s arm at the elbow and grabs Master’s arm near his hand.

Student pulls up on Master’s arm breaking it.

S 60v.3; no R? “A Pin and an Arm Break”

 (Gladiatoria 58v)

Student throws Master and Master is lying on his stomach on the ground.

Student sits on Master's back and grabs one of Master's arms pulling it on to his back and holding it with one hand so that Master cannot get up.

To break Master's arm Student lifts up hard on Master's arm at the elbow with the other hand.

S 61r.1; no R? "A Good Pinning"

Student throws Master and Master is lying on his stomach on the ground.

Student sits on Master's back near his shoulder blades with Student's legs extended towards Master's head and pulls Master's right arm up over Student's right leg.

Student repeats with Master's left arm over Student's left leg, Master is thus pinned.

S 61r.2; no R? "Another Pinning"

Student throws Master and Master is lying on his back on the ground.

Student falls perpendicular to Master over his face pinning Student's arm on Master's neck.

Student grabs one of Master's arms and holds it so Master cannot free himself.

Student can then go to work with his dagger.

Martin Huntfelt's Pinning Techniques in Armor

S 91r.1

When Master falls Student should fall to Master's right side with Student's right knee between his legs and left hand on his throat.

S 91r.2 "A Second Hold"

Master is on his back on the ground.

Student takes Master's right arm between Student's legs and clenches his legs pinning Master's arm there.

Student grabs Master's left arm with his left hand pinning Master.

S 91r.3 "Another Hold"

Master is on his back on the ground.

Student falls perpendicular to Master over his face pinning Master's neck under his left arm.

S 91r.4 "Another Hold"

(note picture is reversed and Master's arm is not held across his throat, Mair 71)

Master is on his back on the ground.

Student falls with his right knee between Master's legs and wraps his left leg around Master's right arm catching it with the crook of his knee. Student can use his hand to assist this maneuver.

Student then grabs Master's left arm with Student's right arm and pulls it under Master's neck pinning him.

Student can then go to work with the dagger.

S 91v.1 "Another Hold"

Master is on his back on the ground.

Student falls with his left knee on Master's right arm and Student's left hand on Master's neck pressing down.

Student holds Master's left arm with his right then moves Student's left hand to Master's left arm to free his right hand, pinning Master.

Student can then go to work with the dagger in his right hand.

S 91v.2 "Another Hold"

Master is on his back on the ground and Student is kneeling between Master's legs facing his head.

Student grabs Master's legs one in each hand behind the knees and lifts them up to bunch up the legs.

Student then falls with one knee to Master's groin and holds Master's legs with one arm pinning him.

Student can then go to work with the dagger.

S 91v.3, S 91v.4 “Another Hold”

Master is on his back on the ground.

Student holds Master by the neck with his left hand over Master’s throat.

Student moves his right hand under Master’s right arm and over the neck pinning him.

S 91v.5, S 91v.6 “If you throw him onto his stomach”

 (roughly equivalent Gladiatoria 56v)

Student throws Master onto his stomach and falls with him behind his right knee on Master’s back.

Student grabs Master’s face with his left hand on the visor and pulls upwards pushing down with the knee.

If this opens Master's visor Student pokes Master in the eyes or with both hands on Master's head twists his neck. This can prevent Master from rising and he will fall back onto his stomach.

S 92r.1 - S 92r.5 "An Arm Break"

Master is lying on his stomach on the ground.

Student falls with his knee to Master's arm at the wrist and pulls upwards with his hand breaking Master's arm.

Or Student can sit on Master's back and put Student's leg on his upper arm. Student can then use his hand to pull up and break Master's arm at the elbow.

Student pulls upwards on Master's head holding it with Student's left hand.

Student pulls Master's right arm onto his back with Student's right hand.

A counter

Student is on the ground on his stomach and Master tries to gouge at Student's eyes with his hand.

Student grabs Master's hand with his own and pulls it into himself.

Student presses into the ground with his helmet and uses his free hand and feet to raise himself up.

S 92r.6 "Another Counter" (This is a throw)

Student grabs Master's left hand with his left hand and pulls Master towards himself.

Student falls backwards onto his back pulling Master with him and grasping Master's leg with his right hand.

Student pushes upwards while rolling backwards throwing Master over him and coming on top.

S 92r.7 "If you fall onto your back"

Master is throwing Student to the ground and Student places his left hand on his chest.

When on the ground Student grabs Master's left elbow with his left hand and Master's left knee with Student's right hand.

Student lifts up with both his hands and body shoving Master off of him to Student's left coming on top.

S 92v.1 "Another Counter"

Student is on his back on the ground with Master on top of him.

Student grabs the Master around his neck.

Student pushes up with his right leg and right hand rolling to his left and coming on top.

S 92v.3 “A Good Wrestling Hold” (Not a Pin)

Student and Master are standing and grappling.

Student grabs Master’s right arm with his right hand behind Master’s wrist.

Student lifts Master’s arm up and twists it behind Master’s back grabbing it by the elbow with his left hand, stepping behind Master at the same time.

If Student hasn’t thrown Master he can grab Master’s right leg by the knee.

Dagger

By: Tom Rosborough

1. The Sources

The following sources are either medieval manuscripts or modern sources regarding medieval combat. The major manuscript used here is *Gladiatoria* based on a draft translation by Jeffrey Forgeng. The other main source used here are the techniques described in *The Starhemberg Fechtbuch*, in Andre Lignitzer's and Martin Huntfelt's dagger techniques, which are not explicitly for armored use, but the techniques are largely similar.

1A. Manuscripts

"Berlin Fechtbuch (A 83)" (after 1500). Berlin, Staatsbibliothek Preussischer Kulturbesitz Libr. pict. A 83. Refs: Hils #12 (p.43). Illustrations of unarmored dagger combat, dagger vs, dagger and dagger vs. unarmed, Pages 36v – 65v.

Czynner, Hans (1538). Graz, Universitätsbibliothek Ms. 963. Online version on AEMMA website. MS; German text. Pictures illustrating armored combat with the dagger, Pages 38v -54 r.

"Fechtbuch." Vienna, Österreichische Nationalbibliothek Cod. Vindob. B 11093. Refs: Hils #50 (p. 126). Illustrations of armored dagger combat, Pages 33r-37v.

“Gladiatoria” (1400-50). Crakow, Jagellonische Bibliothek Ms. germ. quart. 16 (formerly Berlin Ms. germ. quart. 16). Refs: Hils #28 (p. 79). Draft translation by Jeffrey Forgeng. Illustrations of armored dagger combat, page 33v – 48r, 56r – 59r.

"Goliath" (1510-20). Crakow, Jagellonische Bibliothek Ms. germ. quart. 2020. Refs: Hils #29 (p. 81). Contains illustrations of unarmored dagger combat, Pages 89r -97r.

Hergsell, Ed. Gustav (1889). *Talhoffers Fechtbuch (Gothaer Codex) aus dem Jahre 1443*. Prague: Selbtsverlag. Talhoffer ms. of 1443. Illustrations of unarmored combat involving daggers, Pages 83 – 123.

Jorg Wilhalm CGM 3711: Pictures illustrating pinned finishing moves with the dagger, Pages 81r – 83r

Kal, Paulus (?1471). Munich, Bayerische Staatsbibliothek Cgm 1507. A protege of the duke of Bavaria. Refs: Hils #32 (p. 87. Illustrations of armored combat involving the dagger.

Talhoffer, Hans (1459). "Fechtbuch." Vienna, Kunsthistorisches Museum P 5342 B (Cod. Nr. 55 Ambras). Fascimile by Hergsell. Refs: Hils #49 (p. 124). Illustrations of armored combat involving the dagger, Pages 35, 36 and unarmored combat involving dagger, Pages 43-63.

Talhoffer, Hans (1459). "Fechtbuch." Copenhagen, Royal Library Thott 290 2o. Refs: Hils #27 (p. 74).

“The Starhemberg Fechtbuch” ["von Danzig"] (1452). Rome, Biblioteca dell'Academica Nazionale dei Lincei e Corsiniana; Bibliotheca Vaticana MS 44 A 8 (Cod. Vatican. Nr. 1449). Text describing dagger techniques, including counters and wrenching maneuvers. Pages 85R.1 - 86R.1, 94R.1-96V.3

1B. Modern Sources

Anglo, Sydney (2000). *The Martial Arts of Renaissance Europe*. New Haven: Yale University Press. Describes many forms of combat between the 15th and 18th centuries.

Blair, Claude (1974). *Arms, Armour and Base-Metalwork*. London: The National Trust for Places of Historic Interest or Natural Beauty. Pages 162-190

Blair, Claude (1962). *European and American Arms*. London: B.T. Batsford Ltd. Pages 13-17

Edge, David; Paddock, Miles John (Jul. 26, 1993) *Arms & Armor of the Medieval Knight.* Crescent Pub. An extensive resource on general arms and armor of the period. Information on the dagger itself. Pages 62, 88, 144

2. The Dagger

2A. The Weapon

The difference between a dagger and knife is utility, or the purpose of the blade. Knives are meant as utensils, usually with one sharp side and one blunt side, and are used for cutting.

Daggers are either sharp on both sides or roughly conical, and are meant for stabbing and killing. Knives, or knife-like tools, have been used for longer than is even known, however daggers meant for a “purely military” (Blair, 1972: 13) purpose seem to be introduced in about 1250. However, the dagger immediately became an important weapon, and from the early fourteenth to the early sixteenth century was a normal piece of equipment for a fully-armored knight. The dagger was worn on the right hip, balancing the sword which was worn on the left hip.

The distinction between a dagger and a short sword can be a blurred area, especially as many daggers simply emulate swords in their appearance. Many descriptions of actual surviving daggers are listed in *Arms, Armour and Base-Metalwork*, by Claude Blair. The longest of these is twenty-four inches total, and certainly could be referred to as a short sword. The shortest is a French dagger which is smaller than ten inches in total length. The majority of the daggers however fall into the range of eleven to sixteen inches. The average length for the hilt of these daggers is four or five inches, and the shape of the quillions varies from dagger to dagger.

There are many different kinds of daggers. The distinction from dagger to dagger is based on length and hilt and quillion shape. The quillion dagger was often made *en suite* with a sword and sold to a client as a matching set, with the same materials and design. The baselard is the dagger that is most commonly depicted to be used by knights in modern illustrations, but was not necessarily a military dagger and was usually wielded civilians for protection. The rondel dagger was actually the most common type of dagger used during armored combat. Where a baselard is essentially a small sword, in shape, dimensions, and hilt and quillion style, the rondel dagger is very different. The rondel dagger often had a strong triangular cross section, but at

times had a conical blade, which was meant for punching through mail. The quillions were actually a horizontal disk, and there was another disk beneath, enclosing the grip of the dagger. The two disks were meant lock the dagger into the gauntlet of the knight.

A dagger can be built out of many different materials. Some daggers were simply created by forging one piece of iron, or steel into shape, while others consisted of many pieces twisted and hammered together. Other daggers were metal blades mounted on wooden hilts. The ballock dagger often included a wooden, bone, or horn grip. The rondel dagger was usually made entirely of iron or steel composition, but occasionally wood was used for the hilt or rondel disks.

2B. Purposes and Context

The dagger was a component of the gear for an armored knight. Dagger fighting would certainly occur in a battle between knights. Although dagger fighting was a major form of combat, knights were much more likely to fight with longswords first, and as many manuscripts show, fight with daggers after the longswords were lost, or knocked from their hands. In the Starhemberg Liechtenauer commentaries it is noted that nearly all single combat ends with wrestling or dagger combat, and that it is advisable to pin and secure one's opponent before working with the dagger. (S 71v-72r)

The *Fechtbuch* by Hans Talhoffer depicts two armored opponents in a ring for judicial combat, meaning that armored opponents must have at least at times used the dagger during judicial duels (Talhoffer, 1459: 35, 36).

2C. Targets and Goals

The goal of dagger fighting would be to beat one's opponent, either killing the knight or forcing him to surrender for ransom or some other purpose. If daggers are in fact drawn, and the fighting is that intense, it is more than likely that the knights were fighting to the death, and not until surrender.

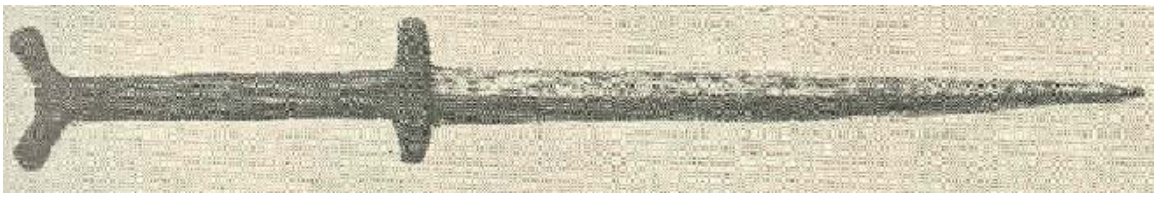
The targets of dagger fighting would be where the armor of one's opponent is the weakest. Generally speaking this is the neck, shoulders, armpits, elbows, soles of feet, and any opening in headgear. The soles of the feet were not protected by armor, as well as certain areas of the shoulder, armpit, and elbow, though these areas may be covered with mail. Obviously any opening in the headgear of knight would be a prime target for a dagger thrust. Later in the Middle Ages, daggers were made to be conical or of a triangular cross section with a reinforced tip, so that they could punch through the mail in the openings of the armor.

2D. Stance

The dagger fighting stance begins in what would be referred to modernly as an "athletic stance", feet a bit wider than the shoulders, with one foot forward and the body slightly turned. The knight needed to be ready to move, strike, or counter at any time, and thus he should not be flat footed, for with a moment's delay the knight could find himself dead. His weight should be on the balls of his feet, ready to move.

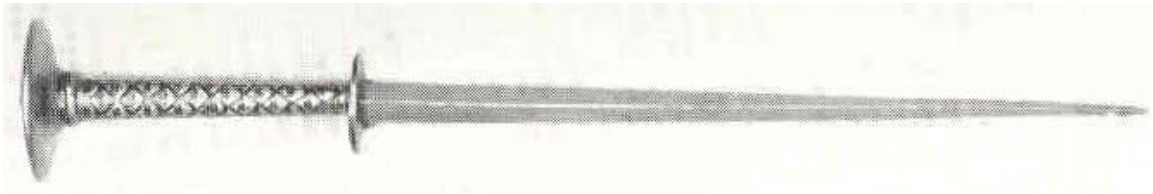
2E. Parts of the Weapon

The dagger consists of three main parts, the blade, the quillions, and the hilt. The blade of the dagger is of course the part with which it is meant to stab. The hilt is where one would hold a dagger, and the quillions are located above the hands separating the hilt from the blade. The quillions are meant to protect one's hands during dagger use.



(German Basilard ~1420, Laking Vol III)

The rondel dagger, the primary dagger used in armored combat, is a bit different, having a disk above the hilt, as opposed to quillions, as seen below.



(Fifteenth Century Rondel Dagger, Wallace Collection Vol II)

2F. Grips

Two chief grips occur in dagger fighting. One grip has the thumb towards the quillions and is known as the forward grip (see below, right). The forward grip is used for lower, underhand thrusts. The second grip has the little finger toward the quillions of the blade and is known as the reverse grip (see below, left). The reverse grip is for overhead or cross body thrusts. While parrying, it is not unusual to grab the blade with two hands, the right hand

gripping the dagger with the thumb near the quillions as in the forward grip, and the left on the blade near its end.

Left: Gladiatoria: 45V, Foward Grip

Right: Gladiatoria 57R, Reverse Grip

Sydney Anglo references Fiore de Liberi, the master and writer of *Flos duellatorum*, who prefers the dagger to be held in the forward grip, and that the dagger be held at the waist. From here he believes the dagger is its most versatile and one can block attacks from both above and below, while having the ability to thrust anywhere at the opponent. (Anglo 178-179)

3. Guards

In accordance with Sydney Anglo, the best guard has the dagger at the waist in the forward grip, with the body in the athletic stance. From this position all attacks can be countered effectively. Attacks from both above and below can be parried, using either the left arm, the dagger, or the technique of taking the blade of the dagger in the left hand while continuing to hold the dagger in the right. This holds true for nearly every technique listed in the Gladiatoria and the Starhemberg Fethbutch. There are cases however where the manuals call for a reverse grip, but only when one's opponent is in the reverse grip as well.

4. General

This is an overview of the techniques, not specific technique descriptions, but descriptions of the moves that the techniques are based on.

4A. Thrusts

Forward Thrust – A thrust of the dagger from the forward grip, can be thrusted upwards or downwards at all possible targets. *Gladiatoria*: 37R

Reverse Thrust – A thrust of the dagger from the reverse grip. This thrust starts from above the right shoulder and is a powerful thrust down at the opponent. Less targets are available for this thrust. Gladiatoria: 33V

Shoulder Thrust – A thrust of the dagger from the reverse grip. This thrust starts with the hilt of the dagger essentially against one's left shoulder. A powerful variation of the reverse thrust. *Gladiatoria*: 36R

Counter Thrust – A thrust of the dagger that is meant to parry an opponent's thrust. This thrust is aimed at the oncoming attack so that both the attacker and the defenders wrists are in contact, and the attack is thwarted. Many counters exist once the counter thrust is in place. *Gladiatoria*: 39V

4B. Parrying

Parry – A simple sideways movement to knock the thrust of an opponent off course. One can aim to hit the oncoming dagger with their own, or behind the dagger of the attacker at his wrist. *Gladiatoria*: 40R

Two Handed Parry – A technique used to stop an attacking dagger thrust. The defender will grab the blade of the dagger in his left hand while continuing to hold the hilt in his right. An upward or downward motion is used as necessary to catch the opponents thrust behind the dagger at the wrist. *Gladiatoria*: 36V

The Key – A technique used to block a dagger thrust. It involves making an "X" with one's arms by laying the right  wrist over the left wrist, and catching thrusts there behind the opponent's dagger. *Starhemberg Fechtbuch*: 95V.4 (seen below)

4C. Grappling

Armpit Lock – A technique used to subdue one's opponent. By various methods, the goal is to lock the opponent's right arm under your left armpit so that his dagger is useless. From here you can thrust to the opponent easily. *Gladiatoria*: 39V

Triangle Lock – A technique used to take control of the fight. The triangle lock involves locking the opponent's wrists between one's own wrists and blade by reaching and grabbing one's blade with the left hand so the little fingers are closest to each other. *The Starhemberg Fechtbuch*: 85V.2

Arm Break – There are two chief techniques for arm breaks. One consists of pushing the opponent's elbow up while pushing his wrist down. The other requires that the arm is pulled down over one's own shoulder, with the opponent's elbow at the shoulder. *Gladiatoria*: 43V, 34V

Forearm Catch – A technique used to block a reverse thrust. The thrust blocked by raising one's left arm so that the wrist of the opponent collides with the left forearm. *The Starhemberg Fechtbuch*: 85R.1

Catch – Another technique used to block thrusts. Thrusts can be caught in many ways, but involve a hand catching the thrust at the wrist, possibly catching the thrust upside down. After the thrust is caught, many techniques call for the other hand to catch the elbow of the thrusting arm. Many variations of the catch exist, and many counters exist from each catch as well. *Gladiatoria*: 33V, 34R, 34V

Throw – A simple technique used to throw the opponent to the ground. The most common throw involves one stepping with their right foot behind the opponents right foot and pushing him down over one's right leg. *Gladiatoria*: 41V

Pin – There are many different pinning techniques, but the goal of the pin is to hold the opponent on the ground so that he cannot move and one can use their dagger with a free hand. *Gladiatoria*: 56R-59R

5. Attacks

5A. Thrusts

Two chief thrusts occur in dagger fighting which stem from the two chief grips, and both have pros and cons. While using the forward grip there are many possible targets open for a forward thrust. One can thrust up, aiming to the neck or face or even the armpits, and thrust down, aiming to the waist. While using the reverse grip the dagger will often be up above the shoulder. One can thrust down with much more force than the forward thrusts from the forward grip, but only the face and neck are possible targets. Another thrust is mentioned in the *Gladiatoria* using the reverse grip. The thrust is made from the opposite shoulder toward the neck or face, possibly the armpit as well.

5B. Cuts

Cut attacks are much less effective during armored combat, as opposed to unarmored combat. A thrusting attack is necessary to hit the open areas between armored plates. The thrust needs to break through the rings of the mail as well. Once a thrust is landed, the blade must continue to be pushed and wiggled forward to maximize the damage.

6. Techniques as described in *Gladiatoria*

33V: First Technique

If your opponent thrusts down from above at your face, catch his right hand at the wrist with your left hand upside down. You can twist his arm outward and now you are in control. You could either thrust your dagger now, or release your dagger and grab his elbow from underneath, and push forward, this will either break his arm, or he will fall.

34R: Second Technique

If your opponent charges you and makes a thrust at your chest from above and you are in a position where you cannot draw your dagger, catch the thrust at the wrist with your right hand upside down. Throw your left arm over his right and place your left hand on your chest while twisting and pressing your right hand to your side. Again his arm will either be broken or you will throw him down.

34V: Third Technique

If again you are in a position where you cannot draw your dagger, and your opponent thrusts at your body from below, grab his wrist from above with your right hand, and grab his elbow from below with your left hand. Raise his arm up and twist

your body slightly to pull his arm down into your shoulder, again you will either break his arm or throw him.

35R: Fourth technique

If he thrusts at you from above, catch his thrust at the wrist with your left hand right side up, release your dagger and reach around so that you hands are on the same side of his dagger, grab his dagger and wrench it from him.

36R: Sixth Technique

If he thrusts at you from his left shoulder to your neck, catch his right arm at the wrist with your left hand and again reach around with your right hand so that your hands are on the same side of his dagger, and wrench it from him. At this point you can move your left foot and place it behind his right foot, and push him on the chest with your right hand, thus throwing him.

36V: Seventh technique

If your opponent thrusts at your face from above, you can parry his attack by gripping the blade of your dagger with your left, while continuing to hold it in your right, and raising your dagger to catch the blow. Once the blow has been parried, grab his

elbow from below with your left hand and step behind him with your right foot. By raising your left arm and pushing with your right hand on his shoulder you can throw him to the ground.

37R: Eighth Technique

If your opponent thrusts forcefully and directly at your body from below, place your dagger between your hands as above and thrust your arms down blocking the thrust. Grab his right wrist from above with your left hand and grab his neck on his left side with your right hand while stepping forward with your right foot and pacing it in front of his right foot, by pulling with your hands you will throw him down.

37V: Ninth Technique

If your opponent has his right foot forward and thrusts at you from his left side, parry this thrust by grasping the dagger with both hands as in the seventh technique, and catching the thrust on your blade toward his wrist. Then, grab his right elbow from below with your left hand and push him far enough to turn his back to you.

38R: Tenth Technique

If he thrusts from above to your face, and you cannot draw your dagger, lay your right wrist over your left creating an “X” and catch the thrust below his dagger. By grabbing his right wrist with your left hand and grabbing his blade with

your right hand, you can wrench his dagger from him.

38V: Eleventh Technique

If he thrusts from below towards your chest, and you cannot draw your dagger, then again lay your right wrist over your left, and come down from above catching the blow behind his dagger, grab his right wrist with your left hand and press down, and grab his blade with your right hand and wrench away his dagger.

39R: Twelfth Technique

If he thrusts at you from above to your face, catch his right arm at the wrist with your left hand upside down so that his blade lies across your arm. Now step forward with your left foot so that you may thrust at him with your right hand.

39V: Thirteenth Technique

If you and your opponent both thrust from the left, and you have parried each other's thrusts, meaning you are touching at the right wrists, bring your left foot forward and place it outside of him, while reaching under both your arm and his arm to grab your blade so that your little fingers are the closest together, creating a triangle lock. Pulling back will either disarm him or throw him.

40 R: Fourteenth Technique

If your opponent thrusts from above, parry his thrust, grab his right elbow with your left hand and push hard as to turn his back to you. Go through his legs with your right hand and place your dagger on the front of his right thigh, pull with your dagger and push him with your left hand on his neck, throwing him to the ground.

40 V: Fifteenth Technique

If you come to parry each others blows, grab his right elbow with your left hand, and push up. Put your right hand through his legs and catch the dagger on the back of his legs and jerk back, while pushing with your left hand on his neck. This will throw him.

41 R: Sixteenth Technique

If he thrusts from above to your neck, and you cannot draw your dagger, catch his thrust with both hands right side up, left hand at the right wrist, right hand at the right elbow. Twist his dagger in and his elbow out, and throw him.

41 V: Seventeenth Technique

If he thrusts from above, catch his thrust with your left hand upside down, and step across him to place your right foot behind his right foot. Push him with your right hand at his neck and throw him over your right leg.

42 R: Eighteenth Technique

If he thrusts from above with his right foot forward, catch his thrust with your left hand upside down and grab behind his knee with your right hand. Pull with your right hand and push with your left to throw him.

42 V: Nineteenth Technique

If he thrusts at your chest, grab his right wrist with your left hand and twist his dagger down. Grab the dagger with your right hand and thrust upon him with his own dagger.

43 R: Twentieth Technique

If you both thrust from above, and your thrusts meet with mutual parrying, bring your left hand inside his right arm and wrap it around, pulling his arm into your armpit and thrust upon him as you wish.

43 V: Twenty-first Technique

If he thrusts from above, and you cannot draw your dagger, catch his thrust with your left hand upside down. Step forward with your right foot and grab his right elbow from below with your right hand twist his arm to the outside to break his arm.

44 R: Twenty-sixth Technique

If you both have your right foot forward and thrust from above and the left at each other's faces and have come to a mutual parrying, push your dagger point down and thrust your right hand to above his right shoulder. As you thrust, keep the dagger point down, as close to against your wrist as possible. Once you are above his shoulder, hook your dagger behind his neck, and reach across his body to grab the blade with your left hand,

locking his necking between your arms. Pull him to the ground.

44 V: Twenty-seventh Technique

If he thrusts from above at your face, and you cannot draw your dagger, catch his thrust at the wrist with your right hand upside down and pin his right wrist behind his head. Grab the back of his neck with your left hand and throw him to the ground.

45 R: Twenty-eighth Technique

If he has his right foot forward, and thrusts from above, catch his thrust at the wrist with your left hand right side up. Grab his blade with your right hand reversed, you can either wrench his dagger from him, or step forward with your left foot to throw him.

45 V: Twenty-ninth Technique

If he has his left foot forward and thrusts at you, grab his left leg behind his knee with your left hand, while placing your right hand on the right side of his neck. Stride behind his forward leg with your right foot, pull with your left hand and push with your right hand to throw him. Note: The technique here does not include a parry to the thrust, which is interesting.

I suggest raising your left arm to block the thrust at his forearm before moving to grab his leg.

46 R: Thirtieth Technique

The thirtieth technique is a counter to the twenty-ninth. If he has your left leg behind the knee, and his dagger is on the right side of your neck, push with your left hand behind his right elbow and grab his right wrist with your right hand and twist his arm so his back is towards you.

46 V: Thirty-first Technique

If you have both equally seized one another, and each has their right arm under the left armpit of the other, step across and put your right foot behind his right foot and throw him to his back.

47 R: Thirty-second Technique

The thirty-second technique is a counter to the thirty-first. If he has placed his right foot behind your right foot and his right hand under your left armpit meaning to throw you down, fall to your left knee and throw him over your right leg, countering his throw.

48 R: Thirty-fourth Technique

The thirty-fourth technique is a counter to the twenty-ninth but is extremely complex.

48 V: Thirty-fifth Technique

If he has his left foot forward and thrusts down at your left shoulder, and you cannot draw your dagger, catch his thrust at the elbow with your right hand, and throw your left arm over his right from the outside. Stride forward with your left foot and place it inside his left foot, either break his arm or throw him.

49 R: Thirty-sixth Technique

If he thrusts from below from his left side with his right foot forward, step and place your left foot inside of his left foot, grab his right wrist with your left hand and his blade with your right hand. Twist and point his dagger to his chest and crowd him.

Pinning

56 R: First Technique

If you have thrown him to his back, hold him down with your left forearm underneath his neck, knee him in the genitals and work with your dagger however you chose.

56 V: Second Technique

If you have thrown him to his stomach, fall upon his back with your right knee and grab beneath his chin with your left hand. Pull up with your left hand while using your dagger in your right.

57 R: Third Technique

If you have come to have your left arm wrapped around his neck from behind, fall on your right knee and pull him backward over your left knee throwing him to the ground. Use your dagger in your right hand.

57 V: Fourth Technique

If you have thrown him to his back, place your right knee in between his legs and your left elbow on his shoulder, push up on his chin with your left hand and work with your dagger in your right.

Conclusion

This project had its beginnings at the onset of A-term in the pre-qualifying project (PQP). At this time each member chose the weapon form that they would study for the duration of the project. There was also a section on armor. It was also at this time that the team was given a sample CD as well as a reference CD on which to base the project. The sample CD was produced by the Higgins Armory Sword Guild (HASG) and dealt with unarmored longsword combat. This served as a guideline to the team as to what the overall project should accomplish. This CD also helped the team in formatting the documents created during the process of this project and saved the team much time and effort in pulling the final document together. The reference CD consisted chiefly of primary sources (manuscripts and translations), and was used primarily in B-term to create combat sequences. In the PQP term, an outline was created (following the HASG CD format) of the overall layout of the document that was to be created as well as a timetable for the first term of the interactive qualifying project (IQP).

The first goal in B term was to create the background section of each weapon form and a general history of armor to complete the documentation according to the outline that had been created during the PQP. This research was done by consulting books in the Higgins Armory Library. In this background section, the history of development of the weapon, as well as the characteristics of the weapon (height, weight, how it was used) was the primary focus. Though this was a time consuming task, it was very much a standard information gathering procedure and went without incident. However, becoming familiar with the subject matter was extremely important in the completion of the sequences.

The development of these sequences was the main focus of B-term. Those sequences shown in the document were pieced together through primary text study and the team members'

own thoughts upon how such maneuvers would be carried out while in a full suit of armor. It should be noted that these sequences, though obtained through many hours of study, are subject to the team members' own interpretations. There was also a study of wearing armor completed at this time. During this term, the interpreted sequences of armored combat were meticulously written out. This was by far the most time consuming of all of the tasks that were performed during this project. In order to create a smooth flowing sequence, much revision was required. The familiarity with the weapons forms was extremely helpful at this point. Knowing how the weapon was used and the weapon's background, helped in the initial draft of the sequences. These sequences were revised by using the loaned HASG weapons and walking through the sequences soon after they were created. Once this was done, the sequences were then revised to make the sequence flow better and to eliminate awkward movement. These sequences were then presented to Professor Forgeng at the following meeting where they were further revised.

Perhaps the simplest of all the tasks came about in C-term, when the written sequences were filmed. This filming was done simply by following the sequences that were written by the end of B-term. This was followed by editing, which due to the experience of some of the team members with the editing software also went smoothly. At the same time the web-site skeleton was created and the video files were uploaded into the proper locations.

D-term was dedicated to the high-end armored combat filming. Here the team integrated a series of armored techniques into a video presentation of an armored duel. After compiling a list of several techniques that looked good on camera, the team then formatted these into a duel consisting of spear, longsword, wrestling and dagger combat. Because it could not be integrated in with the other weapon forms, the pollaxe combat sequence was filmed separately. A separate duel was created also so that more dagger techniques could be displayed. After deciding that the

duel would take place in the Great Hall, lighting and camera angles were tested in order to compose a film of high quality. The combatants then walked through the sequences to ensure that they would flow together and would look good. From this walkthrough, it was determined that the initial pollaxe sequence was too long and was shortened. One week after the walkthrough the actual filming took place. After dressing the combatants in full armor, the filming occurred. Each section of the duel was filmed several times and the best take of each section was used in the creation of the final combat video. Due to the armor, filming of these sections took much longer than the walkthrough. The combatants had to stop filming several times in order to take off their helmets and get a break from the heat produced by moving in the armor. After approximately four hours of filming, all the video sections were created in order to piece together a full armored combat scene. D-term also marked the end of this project and after filming the documentation was finalized and submitted.

The most difficult task during this entire project was becoming familiar with the subject matter and applying it. The initial study of the different weapon forms conducted by each member of the project team was both difficult and time consuming due to the fact that this topic is a relatively new field of study. When composing the sequences in which the written texts were acted out, it was this unfamiliarity that made each member question his own interpretation of the primary text and this added difficulty and frustration to the project.

Overall, this project went smoothly. By strictly following the schedule set up at the onset of this task, most of the work remained on schedule. Though the group did follow this preliminary schedule, this schedule was constantly being corrected as the direction of the overall project differed from its original objectives. The most significant deviation to the overall objectives of this project came about when the project group opted to film an armored duel rather

than revamp the incorrect armored combat display in the Great Hall. This change came about solely due to time restrictions in the project schedule. While there were difficulties, the product of this project was both credible and authentic film clips of these primary text interpretations. Again, by taking the primary texts written work and pictures, a more organized form of conveying the essence of the written word was created in the movie clips created during this project.

As was stated above, the major restriction on the overall achievements of this project was time. This restricted the group to using only those texts readily available and it was not possible to look for further sources from which more sequences could be derived. Possible future projects based off of the research completed by this group could include mounted combat, correlations between armored and unarmored combat and expansion of the group's work using other texts. Such future projects could look at a variety of armored combat techniques and not simply base their studies on a text from a single region. Here a project group might be able to compare and contrast fighting techniques from several different regions, as well as compare techniques taught in the same regions but by different primary sources (different masters). More in-depth research could also be done on the history of the armor, and the section on tournament armor.

The research presented in this document could be used in a variety of different ways. Those who research medieval and Renaissance combat techniques could find this useful in their studies. This research could also be used by the Higgins Armory Sword Guild to develop presentations on armored combat or by any number of organizations interested in historical reenactments.

The major principles learned by the group during this project were those of organization and research. Due to the time constraints faced by the group, it was essential that the work be

organized so as meet the deadlines that were in place. In order to create the documents, the model CD on unarmored sword combat was a great help. This allowed us to follow a pre-existing format from which to structure our data, saving the group time. The research skills of the group also benefited due to the nature of the subjects studied. In order to understand the procedures of armored combat, it was essential that the group research those areas that pertained to their weapon and learn sources that would be of most use to them.

Though this project was difficult at times, it was also enjoyable. The interaction of the group members during filming of the sequences helped to make the project perceivably progress quickly. Overall, this was a positive experience for all those involved.

Armor Terms Glossary

A

Ailette

A flat plate of leather or parchment which tied to the point of the shoulder. Worn between 1250-1350 to display the owner's coat of arms.

Aketon

A padded and quilted garment with a high rigid neck, usually of linen, worn under or instead of plate or mail.

Armet

Originating in the fifteenth century, a helmet of Italian origin consisting of a skull, two hinged cheek pieces which overlapped and lock at the front by a stud, and a pointed visor. The face opening looked like an inverted arch. Also had a rondel of varying size. This helmet and the sallet were the main helmets used by knights in the 15th century.

Arming cap

Please see Coif

Arming doublet

Quilted garment worn under amour from the early fifteenth century, equipped with gussets. Better suited for wearing armor because of the specific ties for pieces of armor. Replaced the hauberk or haubergeon.

Aventail

A curtain of mail attached by means of vervelles around the base of a helmet (typically the bascinet), protecting the neck and covering the shoulders. *See also* bascinet, vervelles

B

Back Plate

Piece of plate amour protecting the back half of the torso.

Barbuta

An open-faced, usually shoulder-length Italian helmet, made in one piece, with a T-shaped face opening. The top was usually rounded.

Bascinet, Basinet

An open-faced helmet with a globular or conical skull enclosing the sides of the face and neck. It was usually worn with and aventail, and a visor. *See also* aventail, hunskull, visor.

Besagew

Defensive circular plate suspended over the wearer's armpit to protect the gaps in the armor.

Bevor

Plate defense for the neck and chin. They were cylindrical in shape and extended all the way up to the bottom of the nose. If incorporated with a helmet and visor would complete the face protection. Replaces the aventail.

Bracer

Early fourteenth century form of defense for the entire arm, generally including the shoulder. The vambrace and rerebrace combined was generally termed as the bracer.

Breast Plate

Piece of amour that protects the front of the torso.

C

Cannon

Individual plate amour defense, of tubular form, for the upper and lower arm. *See also* vambrace and rerebrace.

Chain-guards

Attached staples or pins to the armor so that when removed from the lance rest or visor was not lost.

Chainmail

Incorrect Victorian era term for mail armor. *See also* Mail.

Chausses

Mail protection of the legs, either in the form of mail pants or strips of mail laced round the front of the leg.

Coat of plates

Also called a pair of plates or simply plates. A cloth or leather garment lined with large metal plates riveted, or sewn into, worn in the fourteenth century.

Coif

A close fitting hood that leaves space only for the eyes and nose area, usually of mail, sometimes of cloth. Later known as the arming cap.

Couter

Plate defense for the elbow.

Crest

A heraldric recognitive device fixed to the top of the great helm, introduced in the second half of the thirteenth and in wide use by the fourteenth century. The purpose was so that a knight could be identified more easily.

Cuirass

Also called pair of curates. A backplate and breastplate designed to be worn together.

Cuir Bouilli

Leather hardened by immersion in boiled water or wax, and then dried over a form. Earlier armors meant to supplement mail defenses were made of such leather.

Cuisses

Amour for the thighs.

Culet

A defense for the rump, comprised of overlapping lames. Basically the other half of the fauld protecting the buttox.

D

Demigreaves

See greaves

F

Fauld

Apron like, or skirt like, armor composed of horizontal lames, attached to the bottom edge of a breastplate to protect the abdomen.

Flat top Helmet

Some flat-top helmets had the knights' crest painted on it for better identification. This was used in the early 12th century, and then again in the 13th century, becoming more common in the 14th century.

G

Gambeson

usually made of a richer material and decorated with the knight's coat of arms. A quilted doublet of cloth, stuffed with tow, wool, or other materials. Worn as a type of surcoat, or on its own as a type of defense. There is also evidence that shows the gambeson worn over the aketon. There is confusion and ongoing debate over the exact meanings of this word and the related term aketon.

Gamboised Cuisses

Padded, quilted thigh defenses of the late 13th and early 14th Centuries. Sometimes covered over the chausses.

Gardbrace

Reinforcing plate shaped to fit over and augment the pauldron on Italian 15th Century armors. They were attached to the pauldron using staples and a pin.

Gauntlet
Armor for the hand, initially of mail and other protection. It was later developed into a plate defense of either laminated fingers or mitten style.

Gorget
Piece of armour protecting the throat. May be a simple collar or a more elaborate design composed of several pieces.

Gothic
German armour of the late 15th Century, characterized by a slim angular line, cusping, fluting, and fan-shaped designs. It was also known as High Gothic.

Great Bascinet
See Bascinet .

Great Helm
See Helm.

Greave
Also called earlier a jamber or schynbald. A defense for the lower leg, originally only defending the shin, but later wraps around the hole lower leg, using hinges on the front and back plate, fastened by straps or buckles.

Guard chains
Chains which affixed the sword, dagger, and helm to the breastplate, to prevent them from being lost in battle. These seem to be popular only in the 14th Century.

Gusset
A 15th Century piece of mail, sewn or pointed to the arming doublet, used to cover the armpit and portions of the arm left exposed by the plate armor. Also, a 16th Century laminated defense for the armpit of a breastplate.

H

Harness
A suit of armor.

Haubergeon
A short type of hauberk. The terms are often used indiscriminately.

Hauberk
A mail shirt reaching to somewhere between the knee and hip and including sleeves.

Helm, Great Helm

An all-enveloping helmet which enclosed the entire head and face, reaching almost to the shoulders or chest. Originally cylindrical in form. Arising in the early 13th Century, by the late 14th it was primarily restricted to the joust.

Hunskull

An English corruption of the German *hundsgugel* (dog head), a nickname for a pointed visor found on bascinets of the late 14th and early 15th Centuries.

J

Jamber

Also called jamb, jambart, or jambiere. An early medieval term for leg armor (schynbald). *See also* greave.

K

Kastenbrust

A modern term describing a type of angular breastplate popular in Germany between 1420 and 1450.

Klappvisier

A modern term for a globular visor worn in Germany in the 14th Century on bascinets. It was hinged at the front of the skull of the helmet and covered only the area unprotected by the aventail. Later models could be removed from the helm by the removal of pins just like on the lance rest.

L

Lamellar armor

Armor consisting of small plates laced together to give a rigid defense. It was of Eastern origin, and was used throughout the Middle Ages in Eastern Europe, but was not common in the West.

Lance rest

A support for the lance when couched; it was either bolted to the right side of the breastplate and hinged, or there were staples on the breastplate with a removable spike so that the lance rest could be removed during ground combat.

Legharness

Refers to covering the whole leg including the thigh and, in some instances, the foot.

M

Mail

Mail is made up of small metal circular rings that are either closed by rivets or are made solid. The solid mail was always found in every other row, surrounded by riveted rings. Riveted rings are connected by overlapping each side of a ring and riveting them shut. The aspects of chain that did change over the years were the thickness, size, and arrangement of the metal rings.

Manifer

A plate defense for the lower part of the left arm and hand. Usually constructed in one piece so that the left arm is rigid and unmoving. It was designed for the joust to help eliminate injury.

Muffler

An extension of the mail from the hauberk over the back of the hand with a separate insert for the thumb. The inside of the hand was usually covered by a layer of leather with a slit in the hand to take off the mufflers if so desired.

P

Pauldron

Piece of armour covering the shoulder. Usually large, covering the upper 1/3 of the torso. Also covered over part of the front and back chest plates

Plackart

Plate reinforcement attached to the breastplate, which at first covered the lower half but latterly, especially on Italian armors, covered nearly the entire breastplate.

Plate amour

Armor made of rigid iron or steel plates.

Poleyn

A cup-shaped plate defense for the knee, usually equipped with a side wing of heart shape.

R

Rerebrace

Characterized as shoulder armor.

S

Sabaton

Piece of armor that consisted of overlapping horizontal lames that only covered the top of the shoe and were sometimes shaped with a pointed toe.

Sallet

A light helmet fitted with a visor or open-faced, varying in form, having a tail to protect the neck. Known in England as a salade. The armet and sallet were the main helm knights used during the 15th century.

Scale armor

Armor made of small, overlapping scales or plates sewn or laced to a cloth garment.

Schynbalds

A plate defense for the lower leg which protected only the shin and was strapped over the chausses. *See* Greave. It did not wrap around the lower leg.

Spangenhelm

A modern term for conical helmets constructed of a number of bands and segments riveted together; descended from Late Roman prototypes.

Spaulder

Piece of armour covering the shoulder joint. Not as large as a pauldron.

Stop rib

Small metal bar riveted to plate amour to stop the point of a weapon sliding into a joint or opening.

Surcoat

Flowing fabric garment worn on the outside of the mail in 12th Century. Its main purpose was to display the knights' coat of arms. Sometimes sleeved, sometimes sleeveless, it usually reached to mid-calf. Later, it was shortened and in the 14th Century developed into the jupon.

T

Tasset

A defense for the top of the thigh, hung from the fauld by straps to cover the gap between cuisses and breastplate. They first appear in the 15th Century.

Tonlet

Also called a base. A deep, hooped skirt of steel worn on foot combat armours in the late 15th and early 16th Centuries.

V

Vambrace

Complete arm armor excluding the shoulder.

Vervelles

Staples attached to the base of a bascinet so that the attachment of an aventail was possible. *See also* bascinet, aventail.

Visor

Protection for the eyes and face; a plate defense pivoted to a helmet's skull so that it could be raised when a breath of fresh air was needed.

W

White armor

A modern term for plate armor of plain, polished steel. White armor refers to the knight in shining armor.

Wrapper

Reinforcement for the armet or other helmet that protected the lower face.

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Project Particulars

1. This document

2. A DVD containing the individual reports of each section and videos of each combat technique described in those sections (unarmored). Lastly on the DVD are sequences of combat techniques in armor. The sequences were performed by Brandon Vogel (black undershirt) and Jonathan Longabucco (red undershirt). They are:

   Armored Poleaxe Sequence

   Cross block of swinging blow: Anglo [7]

   Master swings at the students head.

   The student, in the lower reverse guardant, pivots on his left foot bringing the cross upward to engage it crosswise with the master's cross.

The student pushes the master away.

Mid-shaft block of swinging blow: Anglo [9]

The student steps with his right foot and delivers a swinging blow.

The master in a lower reverse guardant steps out to the student's right side with his left foot while raising his mid-shaft to block the cross of the student's axe in an upper guard. The master then steps through with the right foot, and places the foot behind his front foot while rotating the left arm so that the shaft end is now under his chin.

Counter to the mid-shaft block: Anglo [11]

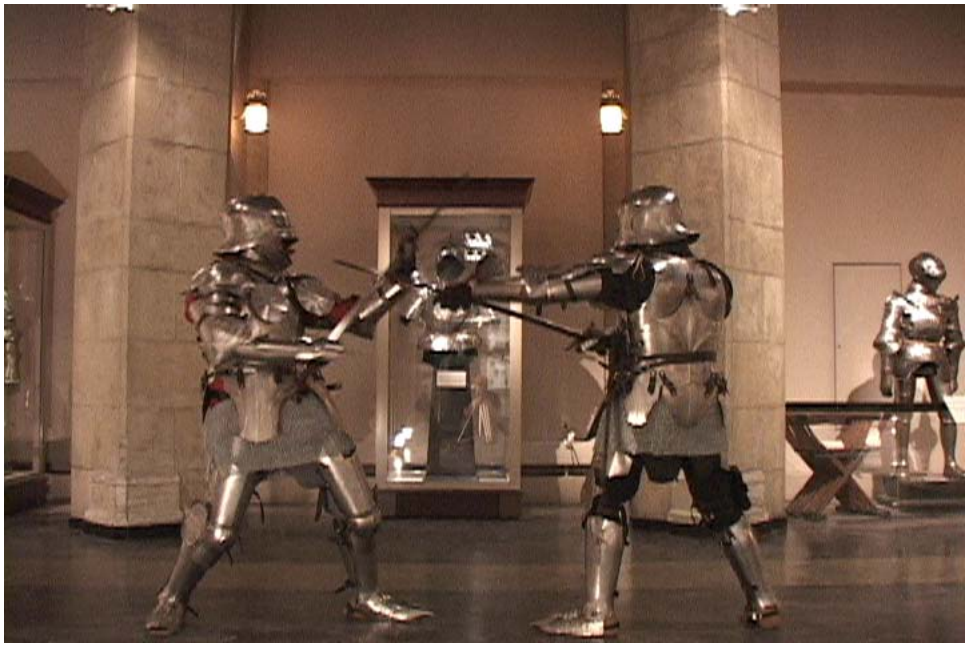
The student then has to recoil his axe and step back with his right foot, placing the point under the master's arm to push him away.

Mid-shaft throw: Anglo [12]

The student tries to hit the master with a mallet blow to the head.

Without moving the master blocks the student's blow with the mid-shaft in an upper guard with the arms fully extended. He then steps right, brings his left hand down and hooks the student's exposed shaft end with his shaft end and again raises his arms and pushes forward to make the student become out of position. The master then can put the point of the axe to the student's neck. He penetrates the armor and kills the student.

Armored Combat Sequence



Throwing the Spear: Tobler S 55r.1; R 91r.1 (page 81)

The master grasps the spear in his right hand, raises it above his head and throws it at the student. He then draws his sword and rushes the student.

Technique 3: Tobler S 58r.1; R 94v.1

The student has the spear in the high guard with the tip extended away from his body. He thrusts at the master.

The master in a guard knocks aside the thrust with his left hand, and then quickly gets back into position (putts his left hand back on his blade) to strike at the student.

Master throws away his spear and draws his sword

Technique 1: Tobler S 57v.1; R 93v.2

The student is holding the spear close to the head in the high guard.

The master is in the left knee guard leaving his head open to attack

The student thrusts his spear at the master's head.

The master parries the thrust going into the high guard. From there he unsuccessfully strikes out at the student. He then releases his grip on the sword and begins wrestling the student.

S 64v.3 Student thrusts at Master's face.

Master counter-thrusts from Low Guard to parry Student's blade.

Student moves up into High Guard and thrusts to Master's face.

S 63r.1 *Alternately:*

Student attempts to place his pommel at Master's neck.

Master releases his grip on the blade with his left hand. Master then grabs the Student's right elbow with his left hand and pushes Student forward. Master then regains his grip on the weapon with his left hand and thrusts at Student from behind.

S 59v.3; R 96v.2 "Another Wrestling Technique"

Student and Master are standing up and grappling.

Student grabs Master's right arm with Student's left hand above the wrist and pulls Master to Student on his left side.

Student throws his right arm above Master's right arm at the crook in the elbow wrapping his arm around Master's arm and holding it tight.

Student pushes down with his left hand on Master's arm breaking it.

Student moves his right foot behind Master's right foot and throws Master over his right hip.

G 58V (Reversed):

Student throws Master and Master is lying on his stomach on the ground.

Student sits on Master's back and grabs one of Master's arms pulling it on to his back and holding it with one hand so that Master cannot get up.

To break Master's arm Student lifts up hard on Master's arm at the elbow with the other hand.

Armored Dagger Sequence

G 39V: Thirteenth Technique

If you and your opponent both thrust from the left, and you have parried each other's thrusts, meaning you are touching at the right wrists, bring your left foot forward and place it outside of him, while reaching under both your arm and his arm to grab your blade so that your little fingers are the closest together, creating a triangle lock. Pulling back will either disarm him or throw him.

G 36V (variant): Seventh technique

If your opponent thrusts at your face from above, you can parry his attack by gripping the blade of your dagger with your left, while continuing to hold it in your right, and raising your dagger to catch the blow. Once the blow has been parried, grab his elbow from below with your left hand and step behind him with your right foot. By raising your left arm and pushing with your right hand on his shoulder you can throw him to the ground.

G 33V: First Technique

If your opponent thrusts down from above at your face, catch his right hand at the wrist with your left hand upside down. You can twist his arm outward and now you are in control. You could either thrust your dagger now, or release your dagger and grab his elbow from underneath, and push forward, this will either break his arm, or he will fall

3. The website contains small excerpts from each weapon form and the armor section as well as the videos for the armored combats and the unarmored sequences.

- Home
- Armored Combat Sequence
- Armored Dagger Sequence
- Armored Pollaxe Sequence
- Armor Summary
- Longsword Summary
- Pollaxe Summary
- Dagger Summary
- Wrestling Summary
- About Us

Dagger summary

By Tom Rosborough

The dagger is the shortest of all hand weapons, but is also the most lethal. Dagger size can vary from as small as ten inches to as large as two feet, blurring the area between a dagger and a short sword. In armored combat, the dagger was often used for solely for the death blow, but techniques also exist for dagger against dagger combat and empty handed defense against an armed assailant.

In the Starhemberg manuscript of 1452 it is noted that nearly all single combat ends with wrestling or dagger combat, and that it is advisable to pin and secure one's opponent before working with the dagger. The dagger is obviously an important part of armored combat, but is often overlooked in movies and other mediums.

Two major manuscripts were studied for this project. The *Gladiatoria* manuscript of 1400 to 1450 was translated specifically for this project. The "Starhemberg" Fechtbuch techniques were not necessarily conceived for the purpose of armored combat, but the similarities in many of the techniques in the manuscripts reinforce the decision to study the Starhemberg Fechtbuch as a credible armored dagger source.

Armored dagger combat can be broken down into thrusts, parries, and grappling moves. The techniques that focus on grappling show the similarity between wrestling and dagger combat, which in many cases overlap.

G36r:
If he thrusts at you from his left shoulder to your neck, catch his right arm at the wrist with your left hand and again reach around

About Us

Brandon Tom John Jason Ian

Jason Heller

I worked on this project my junior year at Worcester Polytechnic Institute in the school year 2004-2005. I was immediately interested in working on this project after reading the description. I've always been interested in medieval warfare and the chance to work with primary sources, in the form of the master's fighting books, was exciting.

I was born in Greenfield, Mass. on October 12th 1983 and have spent nearly my entirely life in Massachusetts. I went to Deerfield Elementary school for grades one through six and to Frontier Regional High School in Franklin County Massachusetts for grades 7 through 12. At Frontier I was a three sport athlete in football, wrestling, and track, earning eight varsity letters. I was captain of both the football and track teams my senior year, having left wrestling my junior year due to injury.

I was a founding member of the Community Service Club, on the debate team for two years, the National Honor Society for two years, and treasurer of the Student Advisory Council for two years. I was also on the Prom Committee and Chorus for one year. In addition to this I was very active in my class' student government.

I came to WPI in the summer of 2002 to play football and pursue an engineering degree, while on scholarship from Air Force ROTC. During my freshman year I pledged and was accepted into Sigma Phi Epsilon fraternity, where I took bit jobs from year to year. I eventually dropped football after my first year and became more involved on campus, running for and being elected to the student senate.

I will graduate from WPI with a bachelor's degree in Aerospace Engineering in May of 2006. At that point I will be commissioned into the US Air Force as a 2nd Lieutenant. I hope to either go straight to graduate school at the Air Force Institute of Technology to pursue my master's degree, or go into research and development.

Jonathan Longabucco,

I'm a junior attending Worcester Polytechnic Institution. My major is Mechanical Engineering with a Material Science concentration. I have a fascination with ancient history and that is why I decided to work with Higgins Armory for my IQP.

For six months of the year I am an Alpine Skier. This year I was the president for the WPI Ski Team. Thinking of ski racing keeps me sane during the long and tedious hours of study at WPI. There is nothing like the feeling of adrenaline pumping through your system as your cruising down the slopes at sixty-five miles per hour, because you are on the verge of success, but also the edge of disaster.
During the off-season I like to hacky sack, play soccer, and swim. In my humble opinion the only place to be when not on the slopes is at the beach having fun with your buddies. The only thing I have left to say is that Massachusetts needs to create a culinary arts school. New York pizza rules!

Tom Rosborough:

Tom is a member of the class of 2006 and is a Chemical Engineering major. His area of focus for this project was the dagger and he also directed the armored combat sequences. Tom loves athletic activities and is also a member of WPI's premiere sketch comedy group, Kilroy. He enjoyed working on this project immensely and has recently become interested in many styles of hand-to-hand combat.

Ian Ruscak:

Ian was born and raised in Maine, New York. He graduated from Maine Endwell Senior High in June of 2001 with honor and distinction. He attended several colleges before coming to WPI in the fall of 2003. He will be graduating in the fall of 2005 with a major in Mechanical Engineering Design as a member of Tau Beta Pi. His hobbies are mostly centered around working on, and riding, motorcycles and just hanging out with his friends.

Brandon Vogel:

Brandon Vogel lives a life of sketch comedy, Ultimate Fighting, and video games. He took a break from this busy schedule during his junior year to complete his IQP at Higgins Armory in Worcester, MA, just minutes away from his college. He is a Mechanical Engineering major, and is not entirely sure if he'll be pursuing a Materials Science concentration. One thing is certain though...he looks damn good in armor, especially with that red arming doublet underneath. Be sure to check the bonus features on the DVD for his exhibition of a flying roundhouse kick in full plate.