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MARTIAL ARTS OF THE MIDDLE AGES

Interactive Qualifying Project Proposal

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Abstract

This team researched the traditions and techniques of medieval martial arts in Europe. After developing a detailed research document based on studying historical manuscripts and modern interpretations of the techniques for armored and unarmored combat, the team produced a videodocumentary for the Higgins Armory Museum. Approximately fifteen minutes in length, this documentary combines historical sources with modern reconstructions to present the purposes and techniques of wrestling, sword, staff, and armored combat to visitors at the Higgins Armory.

Introduction

The European medieval period of 1100 – 1500 is often regarded as one of the most tumultuous times in human history. Compared to the Renaissance, this period was marked with chronic feudal warfare and slow technological progression. However, underneath these apparent conditions there existed rich cultural traditions within developing nations that later shaped and influenced the coming Renaissance and the world we know today.

Of these traditions, none were as emotionally primitive yet culturally complex as the art of combat. From the violent struggles amongst forming nations to the ritualized social institution of the judicial duel, combat played an integral role in the warrior culture of the era. The entire political structure of feudalism was ultimately based on the medieval knight and his services to a lord. In return for land, the knight gave his military allegiance to a lord. This knight was not an ordinary soldier, but a highly trained and expensively equipped fighter who specialized in close combat. His combat expertise included numerous differing styles, including the iconic two-handed sword, the brutal pollaxe, and the sinister dagger.

In addition to combat's role in the political aspect of feudalism, it was also evident in many facets of the social environment. Combat training, including activities such as wrestling and archery, was practiced for both recreation and exercise. In the legal domain, the judicial duel served as a way that civil disputes could be solved through controlled fighting. Even the academic world was gripped by the warrior culture, as masters competed to produce the best treatises on martial arts. While the living tradition of medieval combat techniques has been lost in the annals of history, the treatises have survived into the present.

These works, originally transcribed from the masters of the time, provide today's scholars with invaluable insight into the fighting practices of the era. These masters, hailing from all over Europe, taught young men in the ways of combat and the weapons of war. Using the knowledge

passed along generations and garnered throughout their lives, they compiled treatises that circulated amongst many of the medial martial arts schools.

This project team from Worcester Polytechnic Institute in Worcester, Massachusetts has used these treatises as a stepping stone in an attempt to resurrect this knowledge in a modern context. The study and documentation of historical artifacts are an important part of modern society, and the presentation of these artifacts in an educational context is equally so. However, the field of history is not always the quickest to respond to recent changes in audiences and technology, and thus much of its effect has not been maximized. The project has worked to present the relatively unknown world of medieval martial arts in both traditional and modern contexts. In addition to the documentary, the project team created a companion website that serves to supplement and enhance the ideas presented in the documentary itself.

The videodocumentary, which constituted the bulk of the project, is intended to be shown along with professional documentaries daily at the Higgins Armory Museum in Worcester, Massachusetts. The presentation is approximately fifteen minutes long and provides the general public with a basic understanding on four different subjects of medieval martial arts: swords, daggers and wrestling, staff weapons, and armored combat. Filmed using the techniques of professional documentary directors, the project's video-documentary gives the layman a revealing look at the otherwise lost art of medieval combat. The video-documentary also features a cinematic medieval duel between two armored combatants. The ultimate goal of the documentary is to portray medieval martial arts through a modern, informative medium.

In order to manage the work effectively, the project's individual elements were divided amongst the team. The subject of daggers and wrestling was researched by Imran Malek, swords by Curtis Jerry, staff weapons by Michael DeCuir, and armored combat by Ryan Trunko. With

the medieval masters, Michael and Curtis researched the early and late German masters, respectively, and Ryan and Imran respectively covered the early and late non-German masters.

Chapter 1: The Masters

To understand fully the weapons of medieval combat, one must understand the techniques with which they were used. These techniques, cultivated through generations of careful experimentation and rigorous "trial and error", were meticulously catalogued, annotated, and illustrated by martial arts masters in the form of treatises. These works provide the modern scholar with valuable insight into the details of medieval combat.

The German martial arts masters of the Middle Ages are crucial to the study of medieval fighting techniques. What is known about these masters and the techniques taught by them comes chiefly from a literary genre the Germans called the Fechtbuch. The Fechtbuch, literally translating to *fight book*, was a well-developed literary tradition during the Middle Ages in the Germanic areas, textually describing combat sequences, often with pictures included.

The texts of these treatises are sometimes in poetic form and generally tersely describe complex sequences of techniques from the perspective of one combatant. While some treatises include basic guards and attacks, these books would be a cryptic and difficult way to approach fighting. Knowing this, one can infer that these books were not intended to allow one to teach himself martial arts in a vacuum, just as one cannot learn karate from a book today. The Fechtbuch was instead more a collection of a master's techniques for trained fighters to continue to study and practice.

The two earliest Fechtbuchs originated in Germany in the 1300s. The German masters of medieval martial arts were mostly anonymous up until the end of the fourteenth century. The few surviving documents that appear before then, such as I.33, show no indication who was responsible for the fighting styles being taught. This pattern of anonymity ended with the coming of Johann Liechtenauer and his followers. (Anglo, 2000, 12)

Although not much is known about Liechtenauer's life, later masters often refer to or build upon his works. His most influential contributions were to the longsword. His division of the human body into four main targets became a defining feature of German sword combat. Another commonly used trait for combat was the division of techniques into master and secondary. (Anglo, 2000, 128-129) While his technical skill in swordsmanship was presumably excellent, his choice in communication of these techniques leaves something to be desired. He considered himself quite the poet as seen in his rhyming verses describing the techniques. While this is one of his most distinguishing features it also makes interpreting his texts more difficult.

The influence Liechtenauer had on the German martial arts is most apparent by the inclusion of his works in the Starhemberg Fechtbuch, one of the most comprehensive martial art manuals before the 1500s. An anonymous commentary on his section on the longsword is the first and largest section of the Starhemberg. Commentaries on his works for armored combat and mounted combat round out the rest of his contributions to this document.

The Starhemberg Fechtbuch also includes the text of German masters Andre Lignitzer, Martin Huntfelt, and "Ott the Jew". Like Liechtenauer before them, very little is known about the lives of these men outside of their teachings. Lignitzer's major contribution to the document was instruction on fighting with a "half-sword". The term refers to longsword combat where the secondary hand grips the middle of the blade to give control to the sword's point and open up a variety of other moves. These techniques are meant to be used in full plate armor as a way to make the longsword more effective. He also teaches a small bit about combat with sword and buckler, dagger, and wrestling. Huntfelt similarly contributed his techniques for half-sword, wrestling, and dagger combat, and added in his take on mounted combat. Ott was considered one

of the greatest masters of wrestling in the time period. His contribution to the Starhemberg is his instruction on the art of wrestling. (Starhemberg,1-2)

Hans Talhoffer was a Swabian martial arts master in the mid 1400s who was responsible for six separate manuscripts. These have substantial visual instruction in armored combat, mounted, wrestling, dagger, sword and buckler, pollaxe, and the longsword to name a few, but lack advanced descriptions.

Johannes Leckuchner was a German master who followed the Liechtenauer School of techniques for the longsword, and applied them to the Messer. Leckuchner was a priest started studying at the University of Leipzig in 1455, got his baccalaureate in 1457, and, in 1459, was consecrated in minor orders in Bamberg. The Munich treatise is one of the most successful manuals for the art of falchion combat. Its style and writing technique is also very similar to that of the Liechtenauer school of combat. (Leckuchner (Intro),6-9)

While Germany best documented its martial tradition documented, most of Europe, in fact, was also experiencing a period of chronic warfare. Non-German martial arts masters studied similar techniques and recorded them in the form of treatises just as their German counterparts; however, few non-German treatises survive. Prior to the beginning of the 16th century, two major, non-German, masters of combat were Filippo Vadi and the anonymous author of Le Jeu de la Hache.

Filippo Vadi was a great Italian master. He grew up in Pisa and learned the art of combat from various masters in different countries. Vadi wrote a treatise called *De Arte Gladiatoria,* dated between 1482 and 1487. Vadi had dedicated the treaty to the Duke of Urbino. At the time, the city of Urbino was becoming a renowned center of the fighting arts. There have been speculations that Vadi was fencing master at Urbino, but nothing has been proven. (Porzio and Mele, 2003, 4-5)

De Arte Gladiatoria is 15cm x 25cm manuscript on parchment, bound by a heavy tooled leather. It is hand written, in a charming and poetic style of writing that is steeped in a love or ironic phraseology, characteristic of Italian writing. The treatise is broken up into three sections, the beginning, middle and end. The first section of 14 fol. contains the written treatise followed by two allegorical figures. 15r and 15v constitute the middle section, showing the "signo" plate and the cutting diagram. Starting on 16 fol., the end section depicts various poste and techniques showing Vadi's system. (Porzio and Mele, 2003, 6)

Filippo Vadi's treatise was extremely similar to the *Flos Deullatorum* by Fiore dei Liberi. Fiore was the earliest master on the Italian school of swordsmanship. He lived between 1350's to 1420's. It is very clear that Vadi's work was based off of Fiore's *Flos Deullatorum.* Vadi's treatise differs in only a few technical details and terminology, but has the same mode of

presentation and combat. Vadi's treatise shows the evolution of martial arts technique from Fiore. Vadi concentrates on the sword being the centerpiece of the art and pays little to no attention to wrestling and pole weapons unlike Fiore. (Porzio and Mele, 2003, 6-9)

Vadi's treatise is known for its emphasis on swordsmanship. He is the first to say that sword fighting is very mathematical, but does not go into details with the technique. Vadi includes 25 techniques in fighting unarmored with a sword, thirty-four techniques with fighting with daggers, and then another twenty-three techniques of fighting unarmed versus a knife. Some of Vadi's techniques are unique in that they start presumably after you have made the first thrust and your opponent parries. (Porzio and Mele, 2003, 6-15)

While Vadi worked on his treatise in Italy, an anonymous author penned a more mysterious and unusual manuscript, Le Jeu de la Hache. The Jeu is very important since it is the only surviving medieval treatise written in French. The treatise was originally written for some unknown prince or dignitary and was found in the collection of Francois I's library at Blois before it was transferred to Fontainebleau in 1544. It remained buried among the French royal manuscripts before it ended up in where it is today, at the Bibliotheque Nationale. The treatise is known for its exquisite detail and style in axe combat, an uncommon focus for such manuscripts. With only a few exceptions, detailed narratives of axe fighting were Burgundian in origin, so this treatise was unique in itself. (Anglo, 2000, 152-153)

The style of the Jeu suggests that it is a work of a professional master of arms. It is written to instruct knightly pupils and prepare them for judicial combat. There is a great emphasis on knightly conduct and a bold and confident demeanor when facing an opponent. There was a great deal of care in presenting oneself on a battlefield with honor. (Anglo, 2000, 154)

The Jeu's author believed that fighting with "light lance, dagger, great sword and small swords all depended upon knowledge of axe play." (Anglo, 2000, 152) The treatise was all based on axe combat because of his beliefs in the similarities of fighting styles of the other weapons. The treatise is broken up into two parts. The first section deals with combat between two right-handed people and the other deals with how to cope with a left-handed opponent. The treatise is organized into different modes of attacks but also emphasizes constant themes. There are clear descriptions of feints and distractions while emphasizing constant jabbing at the opponent's foot and face. The style of fighting is characterized by constant motion and ceaseless attacks, often preceded by feints to draw the opponent's guard, and a heavy emphasis on thrusting from a low position upwards. (Anglo, 2000, 154-155)

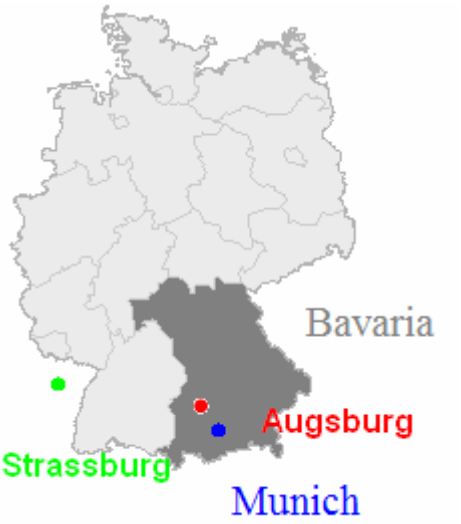
Though the Middle Ages ended with the period of enlightenment known as the Renaissance, the study of medieval combat continued both to suit the changing role of combat and to preserve national and cultural traditions. Once again, Germany was the most thorough and dedicated in documenting their historic fighting styles.

While it is accepted that the Middle Ages were over in Germany by the early sixteenth century, a great deal of our knowledge about medieval combat comes from Renaissance authors continuing the tradition of the German Fechtbuch.

While there were many Fechtbuchs composed in the Middle Ages, some of the best information about their combat techniques comes from the subsequent Renaissance period because of renewed interest in preserving knowledge and the more modern scientific approaches to sharing information.

Perhaps the single largest source on medieval martial arts is the Fechtbuch of Paulus Hector Mair, a highly placed civil servant in Renaissance Germany who lived from 1517 till

1579 (Forgeng 2004). He was involved with the city council of Augsburg and, though not a noble, was a citizen of some social and economic standing. Augsburg is located in southern Germany on the Lech River, west of Munich, and is the capital of the Swabia (Schwaben) region of Bavaria. Mair was greatly interested in the art and "knightly practice" of combat and swordsmanship. He was known to have purchased many detailed manuscripts on fencing, frequented a number of fencing clubs, and spent goodly sums in the pursuit of these and other hobbies. In the end Mair's position in the Augsburg civil service was not enough to accommodate his expensive hobbies and he turned to embezzlement for extra funds, which eventually led to his trial and execution in 1579 at the age of 62.



Map of Germany

In the sixteenth century, Augsburg, like much of the rest of Germany at that time, was experiencing the "Renaissance" or cultural enlightenment that began in southern Europe over a century before. This movement brought about a number of technological and cultural advancements, which took Europe out of its feudal era and into the more "modern" world. However, Mair feared that with the Renaissance also came the end of the chivalrous combat of the medieval era, due to vice, frivolity, and the importance of firearms. Knightly combat be it on horse or foot was on the decline, replaced by unromantic ranks of disciplined pikes and musketeers.

Color illustration from one of Mair's texts.

Mair's primary interest seems to be in preserving and defending the medieval forms of personal combat from the lazy and frivolous who he thought were corrupting "fencing". In doing so he first compiled a sizable collection of manuscripts for the connoisseur of knightly combat. Many of the collected texts were organized on such topics as long sword, dussak, staff weapons, dagger, wrestling, rapier, sword and buckler, dueling weapon, and armored combat (Forgeng 2004). One notable source acquired by Mair was the Fechtbuch of Antonius Rast of Nuremberg.

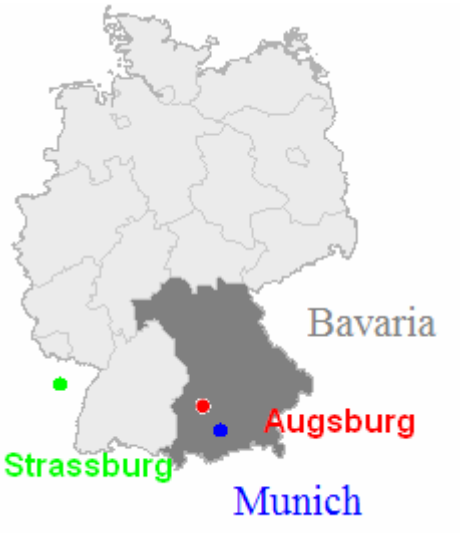
Mair's own treatise, which he never formally named, was composed around 1552 and runs about 1200 pages per manuscript and is divided into an introduction and seventeen sections, organized by weapon like earlier Fechtbuchs, with sections on particular occasions such as duels and tournaments (Forgeng 2006). In composing the work he employed a skilled painter to illustrate the many forms and techniques as well as a pair of expert fencers to aid in interpreting

the material. The illustrations are massive, full-color portraits that aid greatly in studying the fighting styles they present. Mair's impressive work does not however represent fighting practices used in Mair's time, but documents and compiles the work of previous masters of the medieval age. This makes Mair, though he writes well after the Middle Ages are over, an indispensable source on combat techniques before 1500.

The three manuscripts of the text were written in both German and Latin, the latter of which is thought to be a translation by Mair himself. The Vienna manuscript contains both the German and Latin texts, while the Dresden and Munich versions contain respectively only German or Latin; however, these three copies are not exactly congruent as sections from one does not always show in others. Also, the Latin wording and detail often differs from that of the German text. The translation is an excellent tool to clarify and understand the German text, but insufficient to use on its own due to omissions and errors.

It seems likely that Mair's reason for compiling and writing such an impressive review of the martial arts from before his time stems from his own admiration of the customs losing favor in the Renaissance, as well as his hope that by reviving the older ideals and styles he could inspire the elite to work collectively as a single Germanic people.

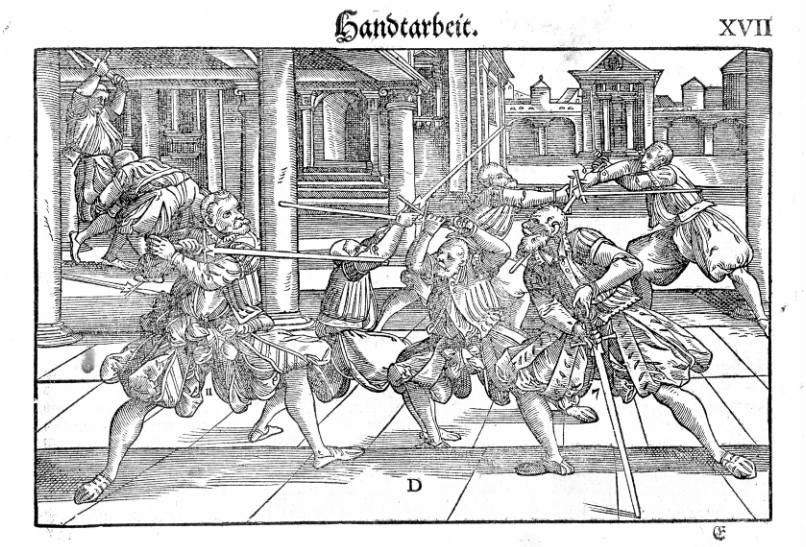
Map of Germany



While Mair is an excellent source because of the sheer quantity of material he presents, almost twenty years later another German became a notable author due to the modernizing techniques he applied to his Fechtbuch. The second of the most important Renaissance German martial

arts enthusiasts is Joachim Meyer, about whom we know very little. What can be ascertained of Meyer is that he operated in the Imperial Free-city of Strasburg, in the Alsatian area of Germany. According to his self-description, Meyer carried the title of Frei-Fechter, which can be considered something like a fencing master (Forgeng 2006)

In 1570, Meyer published his *Grundtliche Beschreibung … der Kunst des Fechtens* or *Thorough the Description of the Art of Combat*. While not as vast as Mair's treatise, Meyer's work stands out in a number of respects. First and foremost is the fact that Meyer's treatise is done in print with woodcuts for pictures, whereas the majority of other Fechtbuchs were copied as manuscripts with hand-penned illustrations. The *Art of Combat* is one of the few in its genre to be produced in this manner (Forgeng 2006)



Black and white woodcut from Meyer

This is not the only way in which the *Art of Combat* sets itself apart from other German martial arts literature. While still following in the German tradition, and inheriting techniques

from earlier sources, particularly Liechtenauer, Meyer makes great effort to modernize his approach to teaching weapons forms.

One definitive method of modernization present in Meyer is his attempt to standardize vocabulary for certain techniques and stances; another is Meyer's attempts to keep his work organized and structured into comprehensive books, while still maintaining the broad variety of weapons forms available in traditional manuals.

While Mair's treatises are focused on documenting and preserving dying medieval martial practices, Meyer's treatise focuses on weapon use in fencing clubs and tournaments, based on techniques proven useful by medieval masters. One example of this is Meyer's section on the long sword. While much of Meyer's long-sword combat comes from sources such as Liechtenauer, there is an unusual scarcity of techniques requiring thrusting. While thrusting was an integral part of Meyer's predecessors' combat styles, the thrust in Meyer's day was banned from sport combat because of its deadliness. Because of this, Meyer has transformed many maneuvers that end in a thrust into feints or simply replaced the thrust with a slashing attack (Forgeng 2006). However, Meyer does include some forms for self defense and earnest combat for a handful of weapons. Examples of this include his rapier and dagger combat sections, which describe weapons still used for actual fighting in Meyer's time.

Though attempting to modernize, Meyer continuously makes specific reference to more traditional Fechtbuchs throughout his work. One possible reason is to foster the same feeling of Germanic tradition that Mair hopes to reignite while writing his treatise. By preserving the combat techniques, and more importantly cultural traditions, of the medieval era, Meyer hopes to inspire the diverse German peoples of his time to think of themselves as united people of the Germanic tradition. Meyer's other reason for pointing out his predecessors' work in his *Art of*

Combat was to point out just how updated his approach is. By reminding his readers of other Fechtbuchs, Meyer can contrast them against his innovations.

Meyer's *Art of Combat* was the last major original martial arts treatise out of Germany; however, his and Mair's work were studied, and occasionally plagiarized, by martial arts enthusiasts over the next century.

A variety of non-German sources after 1500 also document the use of traditional medieval weapons. Three of these are Giacomo DiGrassi's *His True Arte of Defence,* George Silver's *Paradoxes of Defence,* and and Joseph Swetnam's *The Schoole of the Noble and Worthy Science of Defence*.

Giacomo DiGrassi's *His True Arte of Defence,* first published in Italian in 1570, and published in English in 1594, is the first fencing manual to be published in English (Turner, 1990, 23). Digrassi himself was a fencing master from Modena, in Northern Italy. In his portrait, he is seen as a martial and fashionable gentleman with his arms and armor representing his social status (Forgeng, 2005). His work was originally published in Venice in the year 1570 under the name "*Ragione di adoprar sicuramente l'Arme si da offesa come da difese; con un trattato dell' inganno, et con un modo di essercitarsi da se stesso, per acquistare forza, giudicio et prestezza."* It was translated into English by Thomas Churchyard, who included numerous annotations that helped English readers interpret the translations. One such example of this annotation and modification is seen where Churchyard informs the reader that during the translation the Italian word for "sword" was replaced with "rapier". This was done to make a distinction between the old fashioned swords used in sword and buckler combat (still prevalent in the lower class at the time) and the rapier. One could also infer that this change also gave DiGrassi's teachings more

appeal to the upper class who were always looking for new ways to distance themselves from those below them. The change effectively turns the treatise into a "Gentleman's manual".

Since fencing, at the time, was a relatively new and rapidly growing style, DiGrassi felt morally obligated to write a kind of a modern disclaimer in a message to the reader:

> Moreover, because this art is a principal member of the Militarie profession, which altogether (with learning) is the ornament of all the World, Therefore it ought not to be exercised in Braules and Fraies, as men commonlie practise in everie shire, but as honorable Knights, ought to reserve themselves, & exercise it for the advantage of their Cuntry, the honour of weomen, and conqueringe of Hostes and armies.

Here DiGrassi is trying to affirm that swordplay should not be used frivolously (in brawls and frays) by common men, but should be used in honorable combat.

DiGrassi took a novel approach in explaining his techniques by scientifically breaking fencing down into logical units. In order to facilitate this approach, DiGrassi took Camillo Agrippa's treatise of 1553 and reduced the number of guards to three (Turner, 1990, 23). Also, Digrassi was one of the first to divide and label elements of a blade into different parts in order to create his own easily understandable vocabulary that the reader could follow, because DiGrassi also had to deal with a problem that many medieval masters had to deal with at the time – taxonomy. He had to take all the teachings from various instructors and try to distill it down to common terms so that he could establish a common logic for his own text.

Following this path of logic, DiGrassi begins his treatise with the fundamental principles of his technique and steadily proceeds to increasingly complex techniques and variations of those

techniques. Accordingly, he makes a point to remind his readers to read the manual slowly and carefully in order to steadily develop their techniques iteratively.

DiGrassi states that the art of fencing requires two basic notions: judgment and force. “Judgment is timing - knowing when and how to act. But the end is not found in reasoning, but in the doing. Doing - applying force - requires a body with strength and agility, so do not neglect this in your training. (DiGrassi, 1594, Introduction)” Digrassi then specifies that in order to obtain the skill of judgment, one “must study diligently with sound guidance” and part of that guidance is summarized in his five “advertisements”: 1) The right or straight line is the shortest and fastest. 2) The nearest hits soonest. 3) The longer the arc of the blow, the greater the force. 4) A man may more easily withstand a small than great force. 5) Every motion takes time to accomplish.

Once DiGrassi’s treatise had been translated to English, his simple and methodical way of describing the art of swordplay combined with examples of technique applied to real combat situations, became wildly popular amongst Elizabethans in England. This, combined with the rapier’s rise in popularity, created many exciting possibilities for it “made solid dueling techniques attainable to any man willing to practice,” (Turner, 1990, 26). DiGrassi recognized this interest from the English and made a point to note that his procedures were so logical and methodical that they could be applied to strictly English styles as well. Despite that statement, the increased interest in rapier combat was not met with unanimously open arms. Even the Queen of England authorized regulations that limited the type of sword being carried by citizens, hoping to achieve a kind of cultural homogeneousness. One significant supporter of the call for the preservation of English styles was George Silver.

George Silver, probably born around 1555, was a descendant of Sir Bartholomew Silver, who was knighted by King Edward II (Turner, 1990, 79). He was married on March 24, 1579 to Mary Haydon, daughter to George Haydon of Laugham, Norfolk (Aylward,1956, 63). Silver was actually granted letters of patent with his colleague, Sir Arthur Aston on August 22, 1604 to finance an experiment in logwood. These patent letters and other bits of his past don't seem to suggest that Silver would have had much interest in swordplay. Silver himself states that he "never dreamed of being a professional teacher of the sword." (Turner, 1990, 79)

Silver, like many of his contemporaries, had an unbridled sense of patriotism and nationalism. It is because of this English nationalism, combined with Silver's own personal sense of arrogance, that the *Paradoxes of Defence* actually comes off as quite hostile towards Italian methods of swordplay. One of Silver's most famous exploits was to challenge the Italian swordsmen Jeronimo and Saviolo to a multi-weapon contest as part of the Bell-Sauvage competition. George Silver and his brother Toby both knew that a direct challenge of Italian styles would be a great way to bring alternative, older, styles back into the forefront; this arrogance helped define the content of his treatise.

Silver's apparent arrogance is well expressed in his introduction:

> *I, George Siluer, hauing the perfect knowledge of all maner of weapons, and being experienced in all maner of fights… admonish the noble, ancient, victorious, valiant, and most braue nation of Englishmen to take heed how they submit themselues into the hands of Italian teachers of Defence, or straungers whatsoever.* (Silver, 1599, Introduction)

Silver found that the cult of the rapier was only the latest mistaken attempt to replace older standards. He even writes “we, like degenerate sons, have forsaken our forefather’s virtues with their weapons and have lusted like men sick of a strange ague, after the strange vices and devices of Italian, French, and Spanish Fencers, little remembering, that these Apish toys could not free Rome from Brennius’ sack, nor France from King Henry the Fifth his conquest” (Turner, 1990, 80). Silver even relates the swordplay of classical characters Ajax and Achilles as the true model of English swordsmanship while he compares rapier fighting to pygmies fighting with bodkins. He even went as far to claim that rapiers encouraged lawless fighting during peacetime, because in wartime soldiers would choose more traditional weapons.

Essentially, *Paradoxes of Defence* is Silver’s way of addressing the Italian rapier styles and pointing out their (purported) weaknesses in relation to English styles (i.e. broadsword). Silver states that the best type of sword is a sword that is well suited to both offence and defense, and claims that the rapier lacks defensive capabilities because of its “inconvenient length and unwieldinesse”. He notes that the rapier’s hilt, of bars and hinges, does not adequately protect the hand from both cutting and thrusting. Thus, a fight with a rapier is commonly decided by who gets the first hit. The Italian offensive-only styles might pass in Italy where duelers wore equipment consisting of mail-shirts and gauntlets, but this would not work in England where protective equipment is not worn. Silver even claims that many Englishmen were slain because they were “led astray by ‘false teachers of an imperfect weapon.’” (Aylward, 1956, 65)

Because of this offensive/defensive difference, Silver implored his countrymen to use a broadsword. As for finding the proper size for a broadsword, Silver recommended a

measurement based on one's arm length, making the size of a broadsword dependent on the proportions of the user.

Also in opposition to the practices of Italian fencing, Silver states that *both* the cut and the thrust are vital moves in combat. For this, he blames the English "Master of Defense" for stating that both the edge of the rapier and the point of the sword should not be used. He even goes as far as stating that the notion of the thrust being faster than a blow was a fallacy. (Aylward,1956, 65)

The reception of Silver's treatise could be best described as disappointing. Although he presented many great arguments, Silver's damning of the rapier style was too late to influence the majority of swordsman of his time. After all, if regulations set by the Crown itself could not stop people from using rapiers, what good would a few words from a gentleman do? Silver's work itself would have disappeared into obscurity, had it not been for his personal recollections of Rocco Bonetti, Jeronimo, and Saviolo, which were simply pieces of gossip echoed from the school of arms. Silver himself was never declared to be a master. In fact, according to his marriage license and introduction, his formal title was that of gentleman.

If Silver was a diehard proponent of traditional styles, he would not have gotten along well with Joseph Swetnam, author of *The Schoole of the Noble and Worthy Science of Defence* (1617). Swetnam, a former tutor to Henry Prince of Wales, wrote *The Schoole* as a means to understand the rapier style. Despite their different viewpoints, Swetnam regarded Silver with great respect because of Silver's ability to preach a lost cause. In many ways, Swetnam is an opposite of Silver, as seen through his support or the rapier as opposed to the short sword, saying that in combat "the shortsword is little better than a tobacco-pipe" (Aylward, 1956, 80).

Swetnam offered three different ways to hold the rapier: 1) one with the thumb on the blade. 2) one with a whole hand on the grip and the thumb locking the forefinger and 3) one with the forefinger and thumb on the grip and the rest of the fingers on the pommel. These grips made for an unsteady hold on the weapon, and Swetnam acknowledges this by saying "if thy rapier fall from thy hand, take thy dagger by the point and offer to throw it." (Aylward, 1956, 82)

Swetnam acknowledged that the rapier might break when used in a strike, telling the reader "not to strike with thy rapier, for thou mayest break it". He even acknowledges the typical Englishman's temper, saying "it is the nature of an Englishman to give blowes, especially if in anger". He extends this idea by saying "Better no blowe at all, but thrust upon thrust, for he that striketh in fight giveth his enemy a great advantage." Swetnam also proposed a change in the way people trained with the rapier. He said that instead of giving students blunted swords that were so dull that a thrust did no damage, it would be better to use fully sharpened swords and leather armor (Aylward,1956, 83). He was also the first master to advocate a modern rule of keeping in a straight line instead of traversing in a circle or semicircle.

Swetnam offered a look into the life of a Master of Defense as well, saying that it wasn't a very profitable profession and that the best advice he could offer to a regular man was that he should learn a regular trade, become a serving man, or become a soldier.

Swetnam also made a claim that many masters of the time weren't exactly model citizens, saying that "Many skilfull Men of Profession delight in Ungodliness, drunkenesse, and being to Triall in their Art and Profession." He supports this by telling the stories of Furlong, who drank and fell dead, of Westcoat, who hung himself, of Caro, who died of a disease caused by "intemperate living" and Henry Adlington, who killed his master, John Duell and was hanged for the crime. (Aylward, 1956, 83)

Although he said that a second part of his treatise would be made if his first was received well, there is no known "sequel" to *Schole of Defence*.

The three masters DiGrassi, Silver, and Swetnam represent some of the most knowledgeable fencers of their time. Their texts illustrate that they not only knew a lot about both their styles and the fundamentals of combat in general. Their treatises, along with the treatises of other masters, allowed for the preservation and subsequent resurgences of medieval martial arts throughout history.

Chapter 2: Wrestling and Dagger

Throughout recorded history, the use of the human body itself as a weapon in combat has been regarded as both utterly barbaric and almost poetic. To most untrained eyes, the sight of unarmed combat seems random, disconnected, or even savage. However, to those that have dedicated their lives to mastering not only the technique of fighting but also the art of fitness, the same sight of unarmed combat seems more like a well crafted set of techniques and less like a jumble of disorganized attacks and reflexes.

The act of hand-to-hand combat ranging from standing to ground stances is most commonly referred to as wrestling. When the word 'wrestling' is mentioned, most people think of one of two things. The first is Olympic, or amateur wrestling – where competitors attempt to pin their opponents to a mat in order to reach the final goal of earning the most points. The second is the poorly labeled "professional" wrestling where competitors participate in staged matches that follow a predetermined narrative, more like a dramatic production than an actual test of athletic ability or technique. Amateur wrestling, on the other hand, represents the most apparent link to wrestling's long history.

If one were to ask a layman to elaborate on the history of wrestling they would probably reply describing an image of ancient Greeks competing during the Olympics (According to many sources, the first recorded wrestling match was during the Olympics of 708 B.C.). This type of ancient wrestling is often confused with a modern day form known as "Greco-Roman" wrestling. However, Greco-Roman wrestling is derived from a 19th Century French form of show wrestling. The actual ancient wrestling form is referred to as "pankration".

Greece wasn't the only ancient nation to recognize the recreational, health, and entertainment benefits of wrestling. Wrestling was in fact very popular in Ancient Egypt as well,

as suggested by its frequency in the art of the time. Beginning in the Old Kingdom tomb of Ptahhotep (2300 B.C.) and extending all the way through the time of the New Kingdom (2000-1085 B.C.), wrestling is featured in multiple 'scenes' on a variety of artifacts. Within these 'scenes' there are multiple examples where Egyptians are seen fighting foreigners, including Nubians. In addition to Egypt and Greece, wrestling styles were also developed in Iran, India, Iceland, Romania, Sweden, and more famously in the orient, where styles such as Judo and Jiu Jitsu enjoy worldwide fame to this day.

One of the most important historical eras in the history of wrestling is the medieval era, where wrestling served as a vital component of a typical battle where the weapons have been discarded and the fight is taken to the ground. Anglo elaborates on the role of wrestling in the medieval era by describing it as a "combination of two interrelated and legitimate assumptions" the first assumption, labeled as *Prese* , describes "close quarter tricks" in combat where both parties have weapons and wrestling is used to gain leverage on or to disarm an armed opponent. The second assumption illustrates wrestling as a valid means of defense for an unarmed combatant against an armed counterpart. Over time these assumptions were forgotten and discarded, much to the chagrin of a number masters at the time. George Silver, an English gentleman of the late 16th and early 17th centuries even complained against the fencing schools of his time in saying that a concentration on "fancy play" is ineffective in preparing students for realistic combat scenarios. Silver stated that these students needed to learn how to close the distance between their opponents and act appropriately, as well as utilize their primary weapon's hilt in addition to daggers and bucklers. Silver advocated that all students needed to be ready to strike with "the foote or knee in the Coddes"

The type of dichotomy seen between Silver and the fencing schools is a small portion of the numerous options regarding wrestling as either serious subject or a “brutal and useless pastime”. In 1768 when Baron von Biefeld wrote about the mental benefits of physical exercise he stated that “since man’s natural lot is to live amongst his fellows, one must acquire not only social skills such as dancing and riding, but also the ability to defend oneself against enemies.” Despite the fact that Biefeld endorsed activities such as fencing and shooting, he reviled wrestling. Despite wrestling’s high regard in ancient cultures Biefeld described it “violent and dangerous” and so unsavory that “a wrestler by profession, and a spectator who is pleased with such encounters, are commonly two persons equally despicable.” This sentiment is opposed by Baldassare Castiglione, who, in *Il Cortegiano,* advised that the ideal all-rounder would be well advised to acquire a knowledge of wrestling because of its usefulness in foot combat with all types of weapons. Castiglione praised Galeazzo da Sanseverino for ‘practicing wrestling, vaulting, and handling sundry kinds of weapons’. Sanseverino himself was taught by Pietro Monte, a master who regarded wrestling as the foundation of all combat skills. Celio Calcagnini and the English Sir Thomas Elyot were also supporters of wrestling with Elyot saying that wrestling was “excellent training for youngsters” provided that they were appropriately matched for strength and that the surface they would fight on was soft so injuries could be minimized. On the opposing end there was Elyot’s contemporary, Ulrich Zwingli, a Swiss reformer who, despite suggesting that wrestling be included in exercises for “ingenious youths”, advocated only seldom instruction because “often times it turneth into ernest”.

Within the medieval “warrior class” it is easiest to trace the opinions on the value of wrestling from the learned. In this group, wrestling was generally labeled as unchivalric. However, as Anglo points out, “knights were not averse to using throws, trips and holds when

fighting on foot within the lists." Even in Olivier de la Marche's description of Hervé de Meriadet, Marche notes Meriadet's "strength, agility, coolness, and dexterity 'in arms and in wrestling'". Even no-holds barred wrestling, or "all-in fighting" carried some chivalric acceptability at the highest social level. Emperor Maximilian I commissioned tournaments where he would fight unarmed and on foot with combatants and of course, would always win.

One of the problems with at least the labeling and cataloging of wrestling was when writers attempted to discuss wrestling in their treatises and manuals, they realized that the vocabulary of wrestling had not been established as a standard. There were many different labels for similar techniques, and such techniques would be categorized differently themselves. This sense of differing taxonomies continues to this day and was only exacerbated by the rise in popularity of Asian martial arts. Despite these problems, wrestling continues to be an enormously popular activity, whether it derives from Western, Ancient Greek, or Oriental roots.

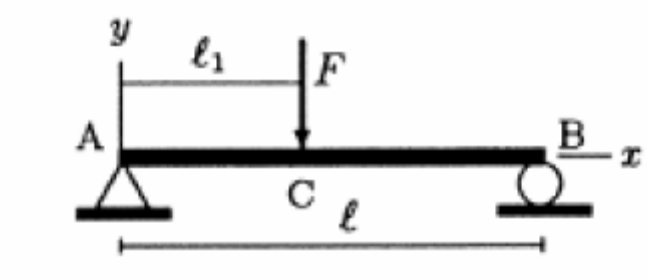
When describing the artifacts of wrestling, there really are no historical pieces to look at or analyze in a conventional sense. After all, how can one analyze the arms of unarmed combat? In order to pursue the idea of "artifacts" in unarmed combat, we have to look at the human body itself.

The human body, unlike conventional medieval weapons, is a constantly growing and changing thing. The body is composed of various types of tissue including skin, bones, muscle, and fat. In wrestling, the primary sources of power and movement for techniques are the skeletal systems and muscular systems. These systems, when signaled by the brain, act together to produce all the wrestling techniques ranging from the clinch to the finishing blow. Naturally, one would assume that those with stronger skeletal and muscular structures are at an advantage, however, through the use of proper technique, one can exploit a system of intricate levers,

angles, and balances to overcome sheer physical power. This system exposes wrestling in its deepest sense in that techniques and motions of wrestling are established on physical principles. These physical principles, when applied onto the human body, create the field of Biomechanics.

Biomechanics is a field of science that applies the notions of engineering mechanics to the human body. Using simple mechanical devices such as ball and socket joints, cantilever beams, and hinged components, one can easily explain the movements of body joints, bones, and muscles.

For the sake of simplicity, let's choose a standard reference for describing the "artifact" of the human body. This reference is a male, with a center of mass slightly above the hip region. (Of course, as the stances in unarmed combat change, the center of mass changes with it, but for simplicity's sake we should retain this notion of a constant center of mass). For a basic wrestling technique like suppressing and breaking an arm, the analogy of a beam can be used.



Freebody Diagram of a beam subjected to a force F (Özkaya,1999, 180)

Assume that point **B** represents the hand of the person being subjected to the breaking with point **A** representing the point where the arm meets the shoulder. A force is being applied by his opponent onto the elbow joint, represented by **F** at point **C.** Using elementary physics techniques in conjunction with the material properties of the beam (or, in this case, the bone), one can figure the exact amount of force, or strength, required by the opponent.

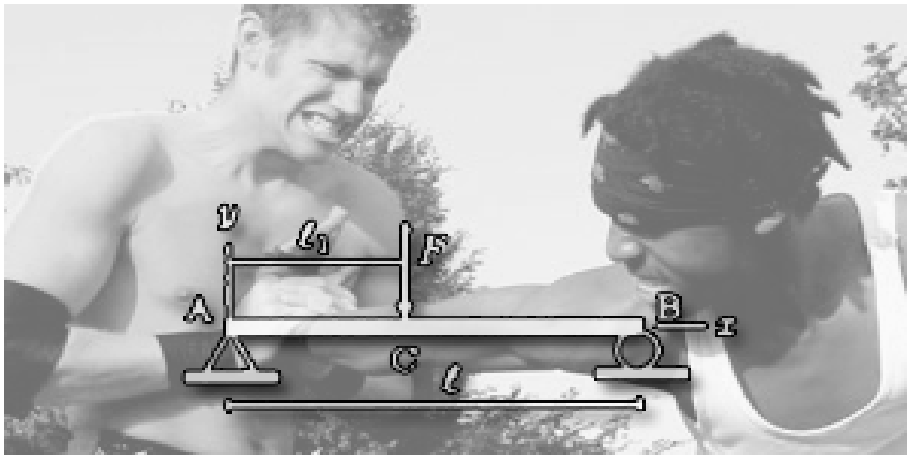


Diagram from Figure 1 over a wrestling "arm bar"

It is through biomechanics that one can “pull back” and see how the techniques of wrestling are built upon physical and scientific principles that have existed since the beginning of time. The motions associated with grappling and wrestling are directly connected to both the physics of the combatant and his opponent. The study of wrestling illustrates that the human body is not only the oldest weapon of war, but also one of the most powerful.

A relatively close chronological cousin to the weapon of the human body can be seen in the dagger. Although modern perceptions of the dagger portray it as an elegant, finely crafted, and precise weapon, the earliest artifacts of daggers can be best described as primitive tools that are a small step away from everyday rocks and stones. Often made of flint, ivory, or bone, these rudimentary tools were the hunting weapons of choice for many prehistoric men.

The first instance of an actual dagger (as in, a weapon crafted for extremely close combat warfare) can be found in the 3rd millennium B.C. during the Bronze Age. Even at its beginning, daggers were considered as secondary weapons, only being used when a soldier’s battle axe or spear could not be. Even the dagger’s descendent, the sword (essentially, an oversized dagger), eventually became the most effective weapon of choice. In addition to combat purposes, daggers eventually became ceremonial objects, often being presented as rewards to noble warriors and

gifts to royalty. This use of ceremonial daggers has continued to this day, where modern politicians often give daggers with gilded or jeweled hilts.

In the medieval context, daggers were used primarily in wrestling and other close-combat situations. Almost every male carried some form of a dagger at the time because of the weapon's utility functions and concealed protection. Daggers were not used in a military context until the middle of the 13th century where it eventually became the standard for knights until the early 16th century (Blair, 1962, 12).

The term "dagger" is generally used as a catch-all for many different weapons that are deemed too short to be a called a sword. Generally, the nomenclature of daggers falls into two categories: "Those that were designed as utensils but which could be used as weapons if necessary and those that were designed to be used exclusively as weapons." (Blair, 1962,,1962, 13) If one desires to be as accurate as possible, only weapons in the second category should given the name "dagger".

A typical dagger would be around 1 foot in length with features similar to a sword including a hilt, blade, pummel, and hand guard. Although most true daggers had double edged blades, some did posess either a single edge or a false edge, which were primarily used as utensils and tools, not as weapons (Blair, 1962, 14). Under this general criterion, a variety of daggers existed and despite their differences in appearance, their function remains the same.

One of the most heavily used types of daggers during the middle ages in Flanders, England Scotland was the ballock knife. The ballock knife, a weapon used mostly by civilians, had a guard that was shaped with two rounded lobes (much like the dagger's profane namesake). The weapon itself is an almost blatant example of the popular notion that the dagger was seen by

many as an extension of one's manhood, especially when holstered. The ballock knife is also sometimes regarded as the precursor to the Scottish Dirk (Blair, 1962, 13).

Ballock knife (http://www.maryrose.org/ship/armimages/ballockknife.jpg)

Another dagger which features an interesting resemblance to a part of the human anatomy is the Spanish "ear dagger". The dagger's pommel is formed by two disc shaped features that splayed outwards from the bottom of the grip. The weapon was widely used in Spain from the 14th to the 16th century.

Pommel from "Ear Dagger"

(http://www.humanities-interactive.org/medieval/chivalry/768/ex018_15e.jpg)

German and Swiss Landsknechts of the 16th century used a weapon that is appropriately labeled as the Landsknechts dagger. With a hilt entirely made of steel, the diminutive dagger was a far cry from the **Landsknecht's** primary weapon, the pike (Blair, 1962, 15).

Landsknecht dagger (http://www.antiqueswords.com/images/gld1-1_small.jpg)

In rapier and dagger play, a left-handed "maine gauche" dagger was the weapon of choice for parrying. These types of weapons were often shaped like miniature versions of their rapier counterparts and there are even variants of the dagger with hinged sections so that one blade could be split apart into three (Blair, 1962, 15).

Trident main gauche dagger reproduction (http://www.gothicfantasy.com/dagger/13Z1031.jpg)

In addition to the varying physical features of daggers that have been shown throughout history, daggers have also been known to maintain a type of symbolic ambiguity. Some saw daggers as the weapon of thieves and murderous assassins, while others saw them as noble weapons that symbolized the courage of a warrior. Regardless of the differences in artifact or opinion, one idea remains true: the dagger is the only weapon for those who truly desire their battles to be up close and personal.

In any type of battle, combat at distance can close rather quickly. Within the close combat phase the combatants must rely on both brute force and, more importantly, the techniques of wrestling and daggers in order to subdue or eliminate their opponents. It is through these techniques, cultivated by masters of the art, that the outcome of a battle becomes dependant on skill, not strength. Many of these fighting techniques were recorded with detail and illustrations, with some masters even documenting the transitions from other styles (like the sword and staff) to close combat.

Medieval techniques of close combat were sophisticated, effective, and violent (Anglo, 2000, 177). Wrestling and dagger techniques were not taught as benign methods of disabling the opponent, in fact, there are many moves that utilize limb breaks and fatal strikes. This violence seems uncharacteristic of the popular conception of the medieval era, which dictates that all forms of medieval combat must involve swords and suits of armor.

Breaking the arm of an opponent armed with a dagger (Fiore)

The earliest existing documentation of these techniques is from Fiore de' Liberi's *Flos duellatorum*. In this treatise from 1410, Fiore catalogues a series of combat techniques that, as he describes it, are about "the art of fighting man to man." Fiore also emphasizes that the focus of his treatise is on deadly encounters where damage is inflicted "in the most painful and dangerous places" (Anglo, 2000, 177) including the eyes, chin, and flanks. Fiore also included illustrations in his treatise and it can be inferred from the number of illustrations devoted to wrestling

techniques (be it with or without daggers) in comparison with those devoted to other techniques that Fiore held a very high regard for wrestling itself.

Another important treatise in documenting the techniques of both medieval wrestling and dagger combat is the *Starhemberg Fechtbuch*. The *Starhemberg* manuscript, from 1452, is also referred to as the von Danzig manuscript and is based on texts by Johannes Liechtenauer and other masters. The manuscript's section on wrestling was composed by Ott the Jew (an Austrian wrestling master) while the sections on dagger techniques were composed by Martin Huntfelt and Andre Liegnitzer. Both Huntfelt and Ott describe their techniques using a method similar to Fiore where the techniques are documented as attacks followed by appropriate counters (Anglo, 2007, 178). Ott himself stated that in wrestling, there are three basic principles: quickness, skill, and strength (Tobler & Forgeng, 2003).

It is through the techniques outlined in both the *Flos duellatorum* and the *Starhemberg Fechtbuch* that we can establish an overview of the techniques of medieval wrestling and dagger combat. For the sake of simplicity, these techniques will be labeled according to my own taxonomy.

The following is a technique overview, organized by combat scenario and separated into different techniques. The identification numbers represent a method for identification that is a specified below:

Code	**Description**
UA	Unarmed attack
UC	Unarmed counter
DA	Dagger attack
DC	Dagger counter
XA	Unarmed attack against dagger
XC	Unarmed counter against dagger

Unarmed Combatant vs. Unarmed Opponent

This section covers technique where both fighters are unarmored and unarmed. The techniques in this section all originate from a starting state where the left hand of the combatant is placed on the right bicep of the opponent and the right hand of the combatant is placed on the outside of the opponent's left arm.

The following techniques are meant to be executed after the initial set up. All of these techniques were adapted from the Starhemberg translation by Christian Tobler and Jeffrey Forgeng, and their original references are documented as written.

Identification # and Original Reference #s	**Technique Label**	**Description**
UA1 S 101r.1 Sp 119v.1 T43: 220.1	Push/Pull wrench	Move left arm to below opponent's right elbow, grip the opponent's right hand with your left and push it away from you.
UA2 S 101r.2 T43: 220.2	Overhead back throw	Lift opponent's right arm up with left hand, slide neck under opponent's right armpit and pull arm over. (You should now be at a 90 degree angle from your opponent, facing towards his right) grab the opponent's left knee (behind the knee, at the crook) and then throw the opponent over your back.
UA3 S 101r.3 T43 220.3	Touch the sky, hit the ground	Lift the opponent's left arm with your right arm, and then grab the opponent's armpit with your left. Pull the arm towards you and then spring forwards while simultaneously pushing his arm up towards the sky putting your left leg behind his right side. Your opponent will trip and hit the ground.
UA4 S 101v.1 T43: 221.1	Right arm lockdown	Get a firm grip on the right arm with both hands, while holding the right arm, turn through the opponent's right side. You may

		now execute a technique from his back.
UA5 S 101v.2 T43: 221.4	Left lockdown to break	Get a firm grip on the left arm with both hands, turn through opponent to his left side. Pull his left arm over your right shoulder and pull down forcefully, breaking his arm.
UC1 S 101v.3 T43 221.2	***Counter*** – Turn through (Counters # UA4 and UA5)	Whenever an opponent attempts to turn you, follow them through the turn so that you return to the initial position at the end of the technique.
UC2 S 101v.4 T43 221.5	***Counter*** – Multi-counter (Counters # UA1-UA5)	Using your right hand, push the opponent's left hand towards his right side and close distance. Then quickly seize his waist and trip him with your right foot by placing it behind his left and throwing him over it.
UC3 S 102r.1 T43 222.1 U3Cb S 102r.2 T43 222.3	***Counter*** – Push away (Counters # UA1)	a) When the opponent has a strong grip on both your arms, move your right hand to grab the opponent's left hand, once the opponent's left hand is grabbed, grab your own right hand with your left hand and push up from the chest. b) If the opponent's hand is pressed against your chest, spring forward with your left foot behind his right foot and then grab the opponent's left leg at the knee and lift. The opponent will fall.
UC4 S 102r.3 T43 222.2	***Counter –*** Hand grab and destabilize (Counters # UC3b)	When you are pressing from the chest, If the opponent has an open hand with his fingers extended, then grab him with the fingers of your left hand, raise his arm (like UA3) , and then knock him off balance by pushing on his right elbow.
UA6 S 102r.4	Double-arm and destabilize	When the opponent has a loose double-arm grip on you, grab

T43 222.4		the opponent's right arm with your left arm, rotate the arm left and use the right arm to push the elbow and knock the opponent off balance.
UC5 S 102v.1 T43 223.1	***Counter*** – Right hip throw (Counters # UA6)	When the opponent grabs you with his left hand and attempts to knock you off balance with his right, force your right hand under his right arm and force your right leg between his two legs by stepping through. Then throw the opponent over your right hip by pushing him about your right leg.
UC6 S 102v.2 T43 223.2	***Counter* –** Elbow to Push/Pull counter (Counters # UA6)	Sink down, use your left elbow and thrust it into the opponent's side. From there, spring forward with your left foot and move it behind your opponent's right foot (between his legs). From there, grab the crook of the opponent's left foot with your right hand and place your left hand on the opponent's left shoulder. Then, simultaneously, push the opponent's shoulder away from you and pull his knee towards you. The opponent will lose balance and fall.
UC7 S 102v.3 T43 223.3	***Counter*** – Flank strike to right hip throw (Counters #UA6)	Strike the opponent with your right hand to his right flank, then force your right foot behind his left foot and throw the opponent over your right hip.
UA7 S 103r.3 T43 224.2	Deflection to reverse hold and throw	When the opponent has a loose dual arm grip, deflect his right arm by pushing it downwards with the left hand, then move your left hand under his right arm, pull his arm to move to the opponent's rear, grab the crook of the opponent's knee, and throw to either side.
UA8 S 103v.1	Throat Crush to release hold	When an opponent has you in an over-under grip (where you

T43 224.4		have one hand under his arm and another hand over) there is little room to maneuver. One way to release this grip is to use your upper arm and force your elbow into his throat. Instead of using your elbow to crush the opponent's throat, you can also force both thumbs into the eyes , under the chin, or onto the throat of the opponent.
UA8b S 103v.2 T43 225.1	Eye gouge/pressure point/throat pressure to release hold	
UA9 S 103v.3 T43 225.2	Hold release to throw	In an over-under grip, use the upper arm to force the opponent to loosen his grip by pushing the elbow up into his throat and then use the lower arm at the crook of the opponent's knee to throw him.
UC8 S 104r.1 T43 225.3	***Counter*** – Elbow jab to throw (Counters # UA8-UA9)	If the opponent attempts to counter UA8-UA9 by trying to unbalance you by your elbow, drop down and use that same elbow to jab into the opponent. With the remaining hand, grab the crook of the opponent's knee and throw.
UA10 S 104r.2 T43 225.4	Over-under to push/pull throw	Using the arm that is below, grab the outside of the opposite knee, pull back while simultaneously pushing the neck of the opponent away from you. The opponent will fall.
UA11 S 104r.3 T43 225.5	Over-under to double over hold escape	When in an over-under hold, reach the hand that is under around the outside of the opponent's arm around to where the upper arm is. Then, using both arms, you force turn yourself away from the opponent.
UA12 S 105r.2 R 79v.2 T43 227.3	Double hand grab reversal	If the opponent has your left hand held by both of his hands, move your right hand above his left arm and turn around so that you can grab the opponent's

		right side with your right hand (the opponent's arm should have been bent in a painful way, thus allowing you to free your left arm. be trapped). Now, drop down and grab the opponent's knee with your now free left hand.
UA13 S 105r.3 R 80r.1 T43 227.4	Chest grab reversal	If your opponent is seizing you by pushing your chest away from him, you can loop your right arm inside of the grip and above his left arm (effectively securing his arm) and then use your left arm on his elbow. Drive forward with your left leg and simultaneously push with the left arm and pull with the right.
UA14 S 105v.2 R 80v.1 T43 228.1	Double knee grab to knockdown	Dive down into the opponent, grab both of his knees and pull back while pushing forward with your head on his chest. If this is done at the proper angle (pulling the knees up and back, as opposed to just back) the opponent will fall.
UC9 S 105v.3 R 80v.2 T43 228.2	***Counter*** – Double knee counter (Counters #UA14)	If the opponent is attempting to grab your knees in a dive, hook your arms under his armpits step back so that he cannot reach your knees. Using the opponent as a balance, push down upon him to force him to the ground.
UA15 S 105v.3 R 80v.3 T43 228.3	Ankle strike to throat pull down	If the opponent's right leg is forward, pull his right arm with your left and strike his right ankle with your left leg. The opponent will then be disoriented enough so that you can grab his throat and push (while still pulling on his right arm) so that he falls backwards.
UA16 S 106r.1 R 81v.1	Rear hold reversal to overhead throw	If the opponent attempts to grab your belt from behind, sink down to lower your center of

T43 228.5		gravity and then maneuver so that you are behind him. Once behind, throw your opponent above you.
UA17 S 106r.4 R 82r.1 T43 229.1	Counter for half nelson	When the opponent has his arms under your armpits, but not behind your neck for a full nelson, you can wrap your arms outside and around your opponents arms, close your arms under his elbows, and then lift upwards to break his arms.
UA18 S 106v.1 R 82v.1	Full nelson break	With your arms under his armpits, grab the back of the opponent's head and push down as hard as possible, breaking the neck of your opponent.
UA19 S 106v.3 R 83r.1	Full nelson left to back break	If your opponent is easy to lift, lift him up and throw him to the ground. Once on the ground, pull back and break the opponent's back.
UC10 S 106v.4 R 83r.2 T43 229.3	***Counter*** – Nelson counter (Counters #UA19)	When your opponent is pressing himself to you, plant your elbow on his chest and push quickly while stepping back with your left foot.
UA20 S 107r.1 R 83v.2 No T43	Overhead throw from rear hold	If an opponent grabs you from the rear, jerk nimbly forward and throw the opponent over your head.
UC11 S 107r.2 R 84r.1 T43 229.5	***Counter*** – Half nelson finger counter (Counters # UA18, UA19)	With your opponents arms under your armpits, grab the opponent's fingers and bent and twist them until the opponent is forced to let go.
UC12 S 83v.1	***Counter*** - Thumbs under jaw (Counters # UA18, UA19)	When an opponent has you in the half nelson, thrust your thumbs upwards into the opponent's jaw.

Combat with daggers is, as a whole, much more dangerous than unarmed wrestling. The dagger is a weapon that can finish a fight in ways and at speeds in which wrestling simply just does not compare.

In this section, I've decided to label two different types of grips:

Grip A – The dagger is held with the thumb touching the hand guard, the dagger is held like a screwdriver.

Grip B – The dagger is held with the base of hand touching the hand guard. This grip is ideally suited for downward stabbing movements.

Identification # and Original Reference #s	**Technique Label**	**Description**
DA1 S 85r.1	Downward thrust defense w/ grip B	If your opponent comes at you with his dagger from above, use your left hand to block and then wrap your left hand around the wrist of the opponent. Pull the opponent's arm away and then follow through with a thrust using the dagger in your right hand.
DA2 S 85r.2	Fake side thrust w/ grip B	The opponent takes his dagger and makes a motion as if he were coming for an attack from above, instead he quickly jerks around attempts to attack from the side. To deflect this, orient your body to catch the thrust with your left hand and then secure the opponent's arm to your chest. Now attack the opponent in the chest with your own dagger.
DA3 S 85r.3	Downward thrust defense with armpit hold and grip A	If the enemy is coming down with a downward thrust and he is holding the dagger so that his thumb is touching the hand guard, use your left hand to grab the dagger from the inside and then pull the dagger under your armpit. From this point of control, you can now attack anywhere with the right hand.
DA4 S 85v.1	Side thrust w/ grip A	The opponent attempts to attack the side or groin, you use your left hand from above to grab and

		stop the thrust, then you thrust forward with your right hand so that you are touching your opponent's body with your own. Keeping the opponent's arm bent and secure, attack with the dagger by swinging into his right side.
DA5 S 85v.2	Downward thrust w/ grip B to a lock	When the opponent attempts a downward thrust, you can do the same and thrust above the opponent so that your dagger arm is over his. Then you take your left arm and hold your right wrist so that your opponent is locked. Jerk the lock backwards quickly to make your opponent drop his dagger.

Unarmed vs. armed combat

Identification # and Original Reference #s	**Technique Label**	**Description**
XA1 S 85v.3	Counter to downward thrust	When your opponent thrusts from above, grab the back of his dagger wrist with your right and the elbow of that same arm with your left. Then pull that arm over your left arm to knock your opponent off balance.
XA2 S 86r.1	Alternative counter to downward thrust	Catch the thrust with your left arm, move from the inside out while holding his arm and then break it over your left shoulder.
XA3 S 86r.2	Block	Simply block the technique, close distance, and overwhelm your opponent with brute strength.

Chapter 3: Staff Weapons

While wrestling was a fundamental skill for close combat, students required education in a range of weapons in order to become well rounded fighters. One such weapon, which serves almost the exact opposite function of the short ranged dagger, was the lengthy staff weapon.

Staff weapons are one of the more neglected areas of medieval martial arts studies, both in the Middle Ages and today. Part of this is due to the contemporary feeling that the sword was more a gentleman's weapon than the staff weapon; hence the immensity of literature from the period on sword combat. Many authors only included staff weapons almost as an afterthought, and even then only to make the documents seem more complete. While this scarcity of material is a problem for modern historians, perhaps a greater hurdle is the lack of a naming convention (either then or now) for staff weapons. In an attempt to circumvent this dilemma I will preface my history and evolution of staff weapons with a short glossary of terms as I have defined them.

Glossary of Terms

Staff Weapon Parts

Bec (de faucon): The curved fluke opposite the axe (or hammer) head of a halberd or pollaxe.

Croix: A round disk mounted at the base of the head on a pollaxe.

Dague: The long dagger-like spike at the top of a bladed staff weapon.

Demihache: The staff section of a pollaxe.

Eye: Cylindrical rings that attached a head to a staff on some weapons.

Garde: The end of a staff on which the head is mounted

Head: The forged, metal component mounted on a staff weapon with eyes or a socket.

Langets: Strips of metal that run from the head down the garde to prevent severing.

Staff: The wooden shaft of a staff weapon.

Tassel: Small strips of cloth attached at the garde, below the head of a staff weapon.

Queue: Also butt - The end of a staff opposite that on which the head is mounted.

Types of Staff Weapon

(Staff Weapons have shafts of about 7-8 feet unless otherwise noted)

Bardiche: A long handled axe.

Bill: Also billhook – A staff weapon with a head dominated by a large curved hook. May also contain a variety of flukes or a short dague.

Glaive: Also spiedo – a staff weapon with a head that resembles a sword socketted to the staff. Often with a reverse spike opposite the blade.

Guisarme: Staff weapon between a halberd and glaive. Can contain a bec and dague and is usually fixed to the staff with eyes.

Halberd: Staff weapon that contains a heavy cutting blade, dague, and bec socketted on the staff.

Long spear: Also half-pike – a spear in the range of 9 to 15 feet.

Partisan: Staff weapon resembling a spear but with a much wider, heavier head.

Pike: Staff weapon with a shaft from 15 to over 25 feet, with a metal tip.

Pollaxe: Also la hache - Staff weapon with a modular head that can contain a hammer or small axe, dague, and bec. The demihache is generally shorter than the shafts of other staff weapons.

Spear: Staff weapon with a point or small leaf-shaped blade. Later spears contained triangular wings.

Vouge: Staff weapon with only a heavy axe blade attached to the staff by eyes.

Quarterstaff: Staff weapon without a head, but sometimes with blunt metal caps at the garde and queue.

The family of artifacts known as staff weapons, also referred to as hafted or pole weapons, all involve long, wooden staves, usually of ash, oak, hazel, or hawthorn. Aside from this, there are only a few general features that hold true for all of the staff family. One is the inclusion of some sort of metal headpiece, either socketted or attached by eyes. This head can be made in a variety of shapes and is usually what defines each particular weapon. Another two general features are langets and tassels. Langets were strips of metal that ran from the head down the sides of the staff, to prevent severing of the head from the rest of the weapon. Tassels, while seemingly decorative, hide a more sinister purpose. After stabbing of cutting with the weapon's head, blood would often run down the staff making it slick and harder to grip. Hence, a red tassel, attached at the base of the head (where it meets the staff), was often added to soak up the blood before it could reach the user's hands (Blair, 1962, 21).

The spear, the oldest of all staff weapons, is little more than a staff, between 6 and 9 feet (though up to 15 in the case of the long spear), with a point on the end. This weapon, because of its simplicity and ease of use was universally made and used by all cultures going back to times when the tip was simply the sharpened and fire-hardened end of the shaft. Even before the Middle Ages, spears had evolved from simply pointed heads to iron leaf shaped blades socketted onto the staff (Waldman, 2005,64.). In the 14th century, triangular wings that extended past the socket were added below the blade to give the spear better parrying potential and also minimize the problem of getting stuck in an opponent after thrusting. This type of spear is often referred to as a "Bohemian Ear-spoon" (Blair, 1962, 30).

A Spear Tip

Despite these innovations, by the Middle Ages the spear's use on the battle field was beginning to drop. The decline of the simple spear's usefulness in combat was due to the development of plate armor which was made to easily deflect the attacks of straight forward sword and spear attacks (Waldman, 2005, 67). However, the concept of the spear would live in on in a number of manners, both on and off the battlefield. The winged spear remained a popular hunting weapon for years until the widespread use of firearms. Giacomo DiGrassi, a sixteenth century author and master of arms, notes that the spear was also a favorite amongst the knightly class because of the style required to use it in singular combat, emphasizing strength and valor with little deceit.

Many historians claim the spear is the ancestor of the stronger, longer, and more elaborate staff weapons that eventually took the spear's place on the battlefield. Most direct of these descendants is the pike. Though in some later texts the spear is referred to as a "half pike", these two weapons are in fact separate weapons, with the term pike not emerging till about the 14th century (Waldman, 2005, 70). The pike was however a natural evolution of the spear, both longer and with a reinforced metal head much stronger and larger than the spear's tip. In the beginning the pike varied in length from 16 to 22 feet, and narrowed as it approached the tip possibly to prevent bending (Digrassi, 1594). The tapering may also have served to improve balance. Interestingly, from the standpoint of modern engineering these concepts holds true. By reducing the mass of the front of the pike, the resultant force of the weapon's weight is shifted further back, counteracting the massive torque of the 20 foot weapon, and keeping the weight of the garde from creating excessive bending stress on the staff. This not only keeps the tip from sagging and puts the resultant closer to the weilder, making the weapon easier to control, but also lightens the load the pikeman must support.

Though the pike (then called a sarrissa) was in use as far back as the Macedonian phalanxes of Alexander the Great, the golden age of pikes did not begin till the 15th century, after the Swiss had began to use this weapon to change the entire structure of warfare in medieval Europe (Blair, 1962, 29,).

Many Swiss towns consisted of freemen, men of non-noble birth who were subject to no feudal lord below their king. These men, unlike most European peasants, were allowed weapons of war to defend their townships. However, not having the wealth to equip armies of cavalry in armor, the burly Swiss developed a style of warfare which focused on the use of pikes and a new weapon, the halberd, to tackle better equipped feudal armies. Like the ancients before them, the Swiss used masses of pikemen in strict formation to both stop the charges of enemy cavalry and pierce the thick armor of mounted knights. The effectiveness of this new style of medieval warfare was brought fully home in 1368 when a confederation of Swiss towns was able to defeat the Austrian cavalry, sounding the death knell of feudal armies in the face of large, well organized, professional armies (Edge and Paddock, 1988, 30.).

The pike remained one of the most popular weapons in Europe for centuries until the rise of firearms. At this point pikemen often felt more like targets than soldiers, and were replaced with the invention of the bayonet, which allowed a soldier to change from a musketeer to a pike-man in a few moments.

The Swiss made one other major contribution to the evolving medieval battlefield, the halberd. This weapon generally consisted of a one-piece metal head, weighing on average 11 pounds, attached to a 7-8 foot wooden staff. The head, originally fixed to the staff with eye holes but later socketted, almost always featured a broad axe blade for cutting, a dagger-like spike for piercing, and a curved fluke for catching the edges of a suit of armor. On the bottom

end, or butt, was a conical iron or steel shoe to plant into the ground in case of a charge, or conversely to stab at opponents behind when surrounded (Gamble, 1981, 43). In trained hands the halberd was a fierce battle-field weapon which allowed lightly armored infantry to contest heavily armored knights.

While it is easy to see how the evolution of the spear took place, that of that halberd is much more complex. DiGrassi theorizes that the halberd was a Swiss evolution from two weapons which were created to tackle cavalry: the partisan, a slashing weapon, and the javelin (Anglo claims that "javelin" here is a mistranslation for spiedo or glaive) designed for thrusting. Many felt that these weapons were not offensive enough, so the halberd was created, which could both thrust and strike. However, while Digrassi is an excellent source on contemporary ideas and practices, his historical accounts are often less accurate.

Many modern historians choose to trace the evolution of the halberd not with spear-like weapons at all, but to the axe family of hafted weapons.

Aside from Frankish, Viking, and Saxon cultures in the Germanic tradition, axes were not a predominant weapon. However, with the improvements in armor and the subsequent decline of the shield in the fifteenth century, two handed weapons were becoming more common on the battlefield. (Waldman, 2005, 56). Blair states that prior to the 13th century the "Danish axe", or mordaxt, was a popular weapon in Switzerland and that over the next century the Swiss began to experiment with its shape and size until the halberd came into being.

The first mention of the word halberd or “hallembart” is in a poem by Konrad Von Wurzburg in 1287. This word comes from the Swiss German halm (shaft) and barte (axe) and probably refers more to its ancestors than to the halberd as defined today (Blair, 1962, 25). Through the 13th century the Swiss made improvements on their two-handed axe, flattening the cutting blade, adding a second eye to distribute forces to the shaft after a powerful cut, trimming the top of the blade concave to a jutting point at the top, and eventually socketting the head onto the shaft. Both Blair and Waldman agree that during this period between the mordaxt and the halberd these evolutions produced hybrids and proto-halberds such as the gisarme and the Swiss-vouge, although there is some degree of contention as to what the defining characteristics of each weapon are.

Halberd Head

Either way, all sources agree that by 1400 AD the Swiss had created what is now considered a halberd and were using it alongside their masses of pikes to revolutionize warfare. Its length allowed the halberd to reach opponents and pull them from their saddles; its weight, historians theorize, could cleave helmets or armor plates (Waldman, 2005, p. 57). The dagger-like end could find its way between armor sections, or under a strong enough arm pierce through the protective plate or mail, making the halberd an excellent weapon to defend pikemen from more heavily armored men-at-arms. Halberd heads could also be produced en masse and shipped to backwater localities to be attached to staves. All these reasons made the halberd one of the most influential combat weapons over the next centuries.

In particular, the Swiss and Germans quickly adopted this new and powerful weapon. Lower-class men of both regions formed mercenary armies of halberdiers, such as the Landsknechts, who would sell their loyalties to feudal lords looking to turn the tide in decisive battles. This was the beginning of European professional armies, trained and paid as units, not levied or assembled of independent vassals.

Another descendant of the Danish axe is the pollaxe. This weapon was not what is generally considered an axe in modern times, but was about 6 feet tall with a modular head mounted at one end, “the garde”, and an optional point at the butt, or “queue”. The stave itself, referred to as the demihache, was usually reinforced with iron or steel strips to prevent sundering of the weapon. The head usually consisted of a hammer or axe blade, balanced on the opposite side with a bec de faucon and a dague at the top. These parts could be removed and replaced according to the user’s preference. Under the head is the “croix”, a metal disk where the head meets the staff, that if sharpened could be used as an “underblade” (Anglo, 1991). Some authors insist that head did not in fact include an axe head as does the taillant or bardiche, often

mistakenly referred to as “pole axes.” However, there is much interuse of the the terms pollaxe, poll hammer, bardiche, and hache to describe sometimes the same weapon.

Anglo, who insists that the pollaxe refers to the weapon with a hammer’s head, states that it was hard to actually kill someone with a pollaxe and points to records of knights fighting for rounds with nothing but dented armor to show for it. He feels that the pollaxe does not handle like a combat weapon, but it more suited to showy tournament fighting. Conversely, Edge and Paddock maintain that the pollaxe was a deadly and elegant weapon which frequently caused serious injury and fatality in both combat and sport. Edge backs up his claim with the example of Richard Beauchamp Earl of Warwick who severely injured Pandolpho Malatesta in a pollaxe competition (Edge and Paddock, 1988). In all, there seems to be a great deal of confusion between historians as to what exactly the the pollaxe was used for and defined by.

Pollaxe

Aside from the staff weapons often seen on the battle-field was the quarterstaff. While generally associated with England, this weapon was also studied in the German schools and was considered a traditional weapon in both regions. Popular references to the quarterstaff include Robin Hood “With a stout [friar] I met, And a quarter-staffe in his hande” (Play of Robin Hood 7 in Child Ballads III. 127, c. 1550). (OED)

This simple weapon was generally an ashen staff of 6 to 9 feet, sometimes with blunt metal ends. Because of its versatility and simplicity this weapon was often used as a training weapon for knights or as a tournament weapon to stress technique but avoid serious harm. In

fact, Anglo, in his introduction to Jeu de la Hache, implies that many pollaxe maneuvers were adopted from quarterstaff fighting (Anglo, 1991). However, not much else is agreed on about the quarterstaff, including the origins of its name. Some claim that its name originates from a process from which it was made out of a fourth of a tree trunk while others imply that the name comes from the staff's non-lethal uses and the term "giving quarter".

Most of the authors who documented medieval staff weapons grouped this family into one thematic section. The first weapon covered here, especially in the German and English treatises, was usually the quarterstaff. This is because mastery of this simple staff helps towards greater understanding of the more complex headed-weapons. Indeed, as later sections will show, the precepts laid down in the learning of the quarterstaff are repeated time and again in the usage of pikes, halberds, and pollaxe.

Quarterstaff:

The most basic concept in weapon combat is the stance, or guard. While each author varies his staff guards somewhat, there is a consensus towards at least two basic guards: high and low. In addition, Meyer includes the middle and rudder guards, though the rudder guard is not included much in his techniques. Mair has a slightly different method of classifying the guards and prefers to start his section demonstrating a number of binding positions and how one should attack out of them. These are often little more than combinations of guards the two combatants can be in at the start of an action and hence are not radically different from the approach of other authors.

Because a guard involves the entire body and not just of the weapon, one must literally describe it from the ground up. From their illustrations, Meyer and Mair teach that for each stance there is a proper forward-facing foot with which to lead, with the other foot a shoulder's

length behind and facing outward. For example, in a low guard, one should always stand with the left foot facing forward and the right foot back. This posture resembles that of a modern left-handed fencer. Swetnam does not insist on the left foot being first, but urges the reader to match his leading foot to his opponent's, hence both with right forward or both with left. The stances as described by Meyer follow, each stance can facilitate attacks and defense from both the right and left.

High Guard [Oberhut]

In the High Guard position yourself thus: stand with your left foot forward, and hold your staff with the tail at your chest, so that the point stands straight up toward the sky. Now as you execute this straight before you, so you shall also do it on both sides. And although you shall always keep your left foot forward, yet you must not let your feet get too far apart, so that you can always have a step forward with the left foot.

Low Guard [Underhut]

Do it thus: stand with your left foot forward again, hold your staff with the butt on your flank, and with the tip extended before you on the ground. If you hold the butt on your right flank, then it doesn't matter whether you hold or send the tip extended to the left or right or straight before you: you can vary how you extend it, either according to how he attacks, or according to what techniques you intend to use.

Side Guard [Nebenhut] and Middle Guard [Mittelhut]

For this, position yourself thus: stand with your right foot forward, hold your staff with the midpart on your left hip, so that the butt extends toward the opponent,

and the tip behind you; thus present your right side fully to him, as shown by the figure on the lower right in Image

The Middle Guard is the Straight Parrying before the opponent, from which one mostly fights.

Rudder Guard [Steürhut]

In this one, position yourself thus: stand with your left foot forward and hold your staff with the tip on the ground in front of your left foot, and the butt up before your face with your arms extended, as you can see in the other figure on the left in the same image [A].

You can also do this guard thus: stand with your right foot forward, and hold your staff behind you, again with the tip on the ground; thus you are positioned for the stroke.

Interestingly, the medieval quarterstaff techniques taught by Mair, Meyer, and Swetnam all have the combatants holding their staves near the queue, or butt, and not in the center, as seen in most modern demonstrations and Asian martial arts. This could be because of the later European emphasis on thrusting as opposed to slashing. In fact, in quarterstaff combat, every treatise is preoccupied with thrusts to the face and how one should trick his opponent to drop his guard to facilitate this. Swetnam explains the overall concept of staff fighting thusly:

Now, if your enemie do charge you, either with a blow or thrust, you lying in the guard, as above showed, then your defence is this: and if he charge you above the gerdel-steade, wither with blow or thrust, strike yourself against it, keeping up the point of your staffe, so high as your head; but so soone as you have defended, whether it be blow or thrust, presently answer your enemie againe with a thrust,

> and hastily recver your guard againe, and in giving of a thrust, you may let goe your fore-hand from off your Staffe, but hold the butte end fast in one hand: and so soone as you have discharged your thrust, pluck bak your Staffe, and clap both your hands on him againe, and recover your guard.

The basics of the technique are to break your opponent's guard by forcing him to parry or allowing him to attack, then, while he is committed to another motion, to parry his staff and jab at his face. Because the staff is not a particularly deadly weapon, and because wide strokes are too easy to come under and block or counter-thrust, straight thrusts to the head are the most popular goal, some authors even recommending being less protective of one's legs so as not to accidentally expose one's head.

However, as important as they are, thrusts to the face are not the only trick in the medieval arsenal. Often swings from the butt end are used to set up other attacks or follow up after running in. Occasionally more delicate tricks are used to accomplish this, such as striking the enemy's hands, use of misdirection, or even taking hold of the opponent's staff.

Here are some more interesting quarterstaff-specific techniques from Mair, Meyer, and Swetnam. Even though these include a number of strokes and binds, notice the abundance of thrusts or intended thrusts in the authors' techniques and counters.

Mair:

The second two high binds from the left side

> Conduct yourself as follows in the onset in the high bind from your left side. If he stands also against you in the high bind from his left side, then step in with your left leg. Instantly feel whether he is hard or soft in the bind. If he is soft, then step

up with your right leg, and jab to his face. If he takes that away, then instantly wind through from your right to his right side.

Two breakings in leading to a throw

When you come to the opponent in the onset, step in with your left leg, and jab your staff to his face from your right side. If he parries this, then set your right leg back, and let your staff shoot through your hands, and strike with the long point to his head.

If he strikes to your head this way, then parry it between your hands on your staff. Instantly step in with your right leg, and jab your tip to his face.

If he sets this off, then change through on his staff, follow up with your left foot, and jab your butt to his right side.

If he jabs to your right side this way, then parry it, and step in to him with your right leg. Instantly jab your butt to his face.

If he jabs to your face this way, then parry it, step in to him with your right leg, and with the setting off, fall onto his neck with your tip, and with your right foot behind his left in the leg-hook; push away from you above, and pull toward you below, so that he falls backwards.

Meyer:

The second device from the High Guard

In the Onset, position yourself in the High Guard; if he thrusts in at your body, either below or above, then as he thrusts in at you to one side, step out from his thrust toward the other side, and at the same time as you step out, strike down

from above at his forward hand. And note diligently as he pulls it back, and thrust straight in before you at his face.

A taking of the staff

It often happens that both staves are bound together in the middle; now when this happens to you, then remain with your staff on his; release your left hand, reverse it, use it to grip both staves, and then go through with the butt under his. Jerk with your right hand up toward yourself; thus he must let go of it, or fall, if you step behind him with your right foot.

Swetnam

A false blow:

Now if you would hit your enemie on the head with a blow, you must proffer a false blow at the head, as if you would strike him downe at the first, but when it is come halfe way, stay your hand, or checke your blow before it meet with his staffe, for he will beare his staffe against your blow, thinking to defend it strongly, before it come to endanger him: but the checking of the first blow will be an occasion, that he will over-carry his staffe beyond the compasse of true defence, so that you may presently come with a second blow, and strike it home over the point of his staffe, so by this determined blow, you may hit him in the head or face.

As one can see by the variety of techniques, there is a wide selection of methods to achieve the two primary goals of staff fighting, jabbing or striking the head and face. The use of all of the more complicated staff weapons derives from these techniques, to a

degree that some authors stop writing after quarterstaff, or, in the case of Swetnam, claim that the staff, because of its simplicity and speed, can best any of these seemingly more deadly weapons.

Pike:

Though one generally considers the pike a battlefield weapon and not one suitable for single combat, the latter is the intention of the various authors describing the medieval techniques. DiGrassi, who gives a proper introduction to pike combat in his treatise, specifically says that the pike is diversely handled, but that he will leave out instruction for mass battlefield tactics. He, like the other treatise writers, seems to be more focused on a style of one-on-one pike-fighting that must have featured in fighting schools, tournaments, or judicial duels.

Like the quarterstaff, pike combat has a number of stances, including the high, low, and middle. Meyer attributes a full 5 guards to this form. The high and middle are the same as with a quarterstaff and the side guard is basically the low guard of the quarterstaff (DiGrassi in fact calls this the low guard for pikes). Meyer then adds three more unorthodox stances. The "high guard for thrusting", which has the wielder carry the pike over his left shoulder, Meyer's "low guard", which is practiced with the pike resting on your left knee, and the suppressing guard, which has the butt under the right thigh so that one can apply his weight and pull down his opponent's pike.

Within the primary stances, DiGrassi notes that there are a number of methods to hold the pike. He says that a man of much courage might hold the pike in the middle, for better control, or a man with much strength hold it at the butt to maximize his distance from his opponent, but that the best grip has the back hand an arm's length from the butt and the fore hand an arm's length past that. This placement gives good control without being too close to one's opponent.

The front hand should be loose, to slide the pike forward and back, but the back hand should be clamped tightly.

Mair gives another guard called the “half pike” in which a combatant holds the pike with both hands near the center of the weapon, letting only half the usual length extend to the enemy. This technique is usually used to parry and charge in closer where the full length of the opponent’s pike can become a disadvantage to him. A possible defense against this half-pike stance is called a plant, in which the defender stands his weapon vertical and plants the butt firm against the ground, stopping and swinging attacks from the opponent in half-pike. Most defense against this technique centers around using distance and thrusts to not allow one’s enemy the chance to advance.

Pike combat is conducted much like quarterstaff combat and the majority of its techniques are just extensions of the staff’s principles with a longer weapon. Due to the head on the pike, thrusts are even more important to a pike-man, while because of the pike’s great length, attacks from the butt of the weapon are almost unheard of. Another pike technique that differs from quarterstaff is the concept of bearing down on or using the force of your weight against the staff of one’s opponent to control his weapon. However, despite these few differences, as with the quarterstaff there are a number of combinations of guards, steps, parries, and feints to achieve that one crucial result. The basic concept of pike fighting is still to beat, parry, or trick one’s opponent’s pike into a position from which he cannot quickly defend, and follow with a quick thrust to his head.

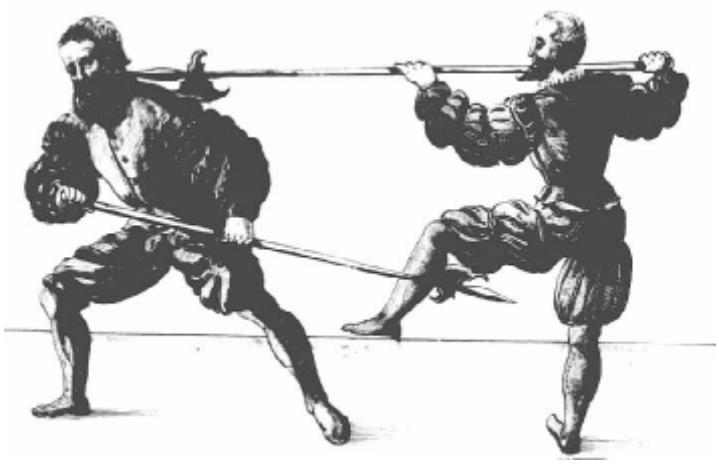
Halberd:

Again, the basic stance and grips for the halberd are very similar to those of the quarterstaff. One generally stands with his left foot forward, holding the staff near the butt at his right hip with the head out in front either up, down, or straight ahead. One can also perform many of the quarterstaff's techniques with a halberd, due to the similar length, so many of the parries and thrusts still apply, although the halberd is somewhat heavier and has a tendency to get the head caught on other weapons (either an advantage or a disadvantage). Yet, however similar the quarterstaff and the halberd may be, the complex head of the halberd gives its techniques a new dimension that the simple staff cannot match.

Because the halberd has a cutting edge and a fluke, innovations the last two staff weapons lacked, it also has a wider variety of techniques available to its user. Chief among these new moves is the cut. Both Mair and Meyer start their halberd sections with descriptions of the basic halberd cuts. While Mair only describes the high and low cuts from either side, Meyer again systematically claims to lay out six fundamental cuts from which to start one's study of the halberd. Meyer actually only describes four cuts (the cross cuts from above and below and two methods to drive diagonally through one's opponent) and it is thought that the cross cuts are meant to be performed with the halberd from either side, making a total of six. These cuts usually consist of two motions such as in the upper cross cut, which consists of a cut of the blade from the left up across the opponent's face and then a slash from the right with the hook back to the starting position.

Another important new technique with the halberd is wrenching. Wrenching is accomplished by hooking one's halberd on his opponent's and pulling, either disarming him or throwing him off guard. Mair also shows how to wrench an opponent's limbs with the hook of

the halberd to trip or throw him. In fact, many of Mair's halberd sequences end with trips or throws, some using the standard quarterstaff techniques, other utilizing the specific strengths of the halberd.



A low wrenching against a power jab

Though the halberd accommodates the new techniques of cutting and wrenching its basics, once again, lie in the simple quick thrusting attacks of the quarterstaff and pike. This is why, though the least intimidating section, the dague is perhaps the most deadly and oft used part of the halberd. However, overall, typical halberd combat was more complex, allowing the user a greater variety of maneuvers to get his opponent's guard down. Barring the chance to thrust the dague in the opponent's face, a halberdier could still win with a powerful well timed cut, able to crash through bone and armor, or a wrenching throw or disarm either of which could leave an opponent confused and defenseless.

Mair's final halberd sequence demonstrates the many unorthodox strengths of the halberd and is of great interest:

A leg-break against a jab to the nape of the neck

Item, when you come together with the onset, and have simultaneously bound each other, then hold your halberd toward his face. Instantly change off on[57] his halberd, and jab to his face. If he sees the jab and parries it, then step in with your right foot, and wind your butt from below at his left arm.

If he winds at you below this way, then quickly *change your left hand on your halberd, and jab your tip to his chest. If he parries this, then strike your butt to his head.

If he strikes in at you high this way, then step back with your right foot, and take his cut away with your tip. Instantly bind strongly under his halberd, and shove upwards.

Instantly step in to him double, and drop your halberd. Grasp with your right hand below on his left foot, and with your left hand powerfully on his kneecap, so that you can break his leg, or throw him.

If he has caught you this way, then set your halberd on the nape of his neck, and press strongly downwards, thus countering his work.

Pollaxe:

About the pollaxe, there is not a great deal of material, with the exception of the Jeu de la hache. Anglo, who does not believe the pollaxe is formidable weapon, translates and gives commentary on this material.

The Jeu author recommends that the pollaxe combatant employs an *en garde* position from which one can easily attack or defend and, according to Anglo, stresses the use of the queue much more than the head of the weapon. Though the Jeu is unillustrated, from the author's sequences and terminology one can infer that right handed axe wielders were to fight with their right foot forward and vice versa. Interestingly, because this is the only system that recommends using whichever side one is most comfortable with, it also is the only one that gives techniques for combat against same and opposed handed opponents. While most of the Jeu deals with combat between two right handed axe-men, there is a definite second section about how a right hander should approach a left handed opponent.

The Jeu's techniques focus heavily on beating and thrusting with the butt of the weapon, as well as catching attacks on the demi-hache and croix. Occasionally the Jeu mentions thrusts with the dague to the head or chest. However, only rarely does the author say that the bec de faucon should be used, and in these situations usually only as strikes to the knee, or for wrenching moves as with a halberd. Why the author of the Jeu does not recommend the use of the head is a question of interest, for it seems that this would obviously be the "business-end" of the weapon. Perhaps this is a precaution against getting your head caught on your opponent's, leading to a possible disarm, or perhaps by keeping the queue forward one can perform high cuts easier with the blade/hammer. Yet again, many pollaxe techniques are grounded in the basis of staff combat.

Chapter 4: Swords

As important as staff weapons were in medieval combat, their usage was almost always secondary to that of the sword. During the medieval period in Europe, swords were one of the most used weapons. The quality and quantity of swords owned by an individual would rise with the wealth of that owner. The lower class could rarely afford one, and the ones they could afford tended to be used or of poor quality. (Connolly, 1989, 1989)

Toward the middle of the thirteenth century, the average length of the sword in Europe was 36 inches. By the beginning of the fourteenth century, its length grew to 50 inches. This was the beginning of the popularity of two-handed swords. Its length continued to grow till the end of the Middle Ages. (Connolly, 1989, 1989)

The best source of artifacts is in ancient armories across Europe. Battlefields of the time period have few intact swords due to how prized and valued the swords were. From the artifacts that have been recovered we can see a quick change in the shape of the sword about the time that plate armor came into use. The swords were commonly more rigid and had a diamond shaped point after the combat styles began it emphasize stabbing to combat plate armor. (Connolly, 1989, 1989)

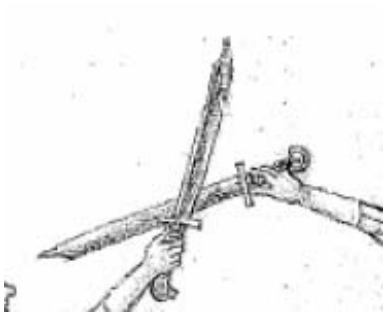
Falchion

The falchion has existed in some form for many ages. The origins of the weapon are unclear due to the limited number of surviving texts and artifacts. The term is given to one-handed swords with a single edge that is weighted toward the point. Although the form of the falchion varies from region to

Falchion artifact from the Higgins

region, the fact that it is made as a cleaving weapon made it a useful tool in daily life. This is a likely reason that there are so few surviving artifacts since its usefulness in everyday life resulted in its use until it was destroyed. (Connolly, 1989)

The goal was to make it thickest at its optimal striking point in order to maximize its cleaving power. This form of the falchion resembles the modern machete. Another popular form of the weapon was the German Lange Messer. This form of the falchion had a broad, slightly curved blade, usually tapered at the end. This form is similar to a saber with a slight but sharp broadening at the end of the blade. A popular form in Italy toward the end of the Middle Ages was a straight or slightly curved, one-sided blade of uniform width. As opposed to other versions of the falchion that widened to enhance the striking point, the metal toward the tip was made denser. The blade of the falchion varied greatly between makers and regions. Texts and artwork depict many forms of the weapon that combine certain characteristics of these forms.



Messer combat depicted in

As with most swords from the era, it was common to have a cross shaped guard on falchions. Toward the renaissance, falchions could be seen with knuckle guards that extended around the grip to protect the fencer's hands. (Connolly, 1989)

Recreation of a German Falchion

The falchion's place in combat was mainly to be used on lightly armored enemies. This made it ideal for foot soldiers and civilians who would likely be faced with unarmored opponents. This isn't to say that it was a peasant weapon. Although the longsword was the favored noble weapon, the falchion

was a popular second choice. For example, it was traditional to present each new bishop of Durham with a falchion as a symbol of his devotion to the land. (Connolly, 1989)

Sword and Buckler

A common misconception of the Middle Ages was that a shield was the most common companion of the one handed sword. If you look closer at the art of the period, you will see that bucklers were the most commonly used off hand for a fighter with a short sword. A buckler differs from a shield in many ways. First, the buckler is smaller then a shield. Bucklers were commonly 8-16 inches in diameter. Second, a shield is usually strapped to the swordsman arm where bucklers where held in the swordsman's hand. This gives the user a wider range of motion in which to guard. For example a blow toward the users right side could be blocked with the sword, then held by the buckler, freeing the sword for an attack. Finally, where a shield has very few offensive abilities, the buckler can be an effective weapon. It was common to have spikes on the center of the buckler to increase the damage dealt from a blow. (Clements, 2002)


Buckler artifact from Higgins


"Dark Lantern" buckler could be used for attacking


Image of Sword and Buckler from I.33

The buckler paired up almost any one handed sword. There are many art pieces from the period that show falchions used with a buckler. On the other hand texts on combat describe many techniques that would be

ineffective with most forms of the falchion. Most techniques call for a straight edged sword with the weight focused closer to the fencer's grip. The fact that a falchion's weight is focused more toward the tip would result in slower wrist movements against gravity. Another reason double edged sword would be preferred is that countering techniques make good use of both edges by allowing the wielder to move to a killing blow without turning the wrist

The sword and buckler combination was popular for a few reasons. It was lightweight and easy to carry. It was easy to make and very inexpensive. It was also versatile enough to be effective against most weapons and armor. These are the factors that most likely led to it being the choice armament of an army's foot soldiers and of civilians. (Clements, 2002)

Longsword

Common grip used on longsword

The longsword was the knight's sword of choice in the latter half of the Middle Ages. Early examples appear around the year 1250. This is no doubt due to its versatility as a knight's weapon. Weighing from 2-5 pounds with a 35-40 inches long blade and an oversized handle, usually 10 inches, it could be used with one hand or two. When fighting one handed the hand would grip the sword just below the guard. Switching to two handed combat placed the bottom hand around the pommel. This feature proved useful for switching between mounted combat to combat on foot. (Forgeng, 2003,12)

When the sword is used in armored combat, the secondary hand would be used to grip the blade, giving the wielder more control over the tip, and absorbing more shock from an opponents strike.

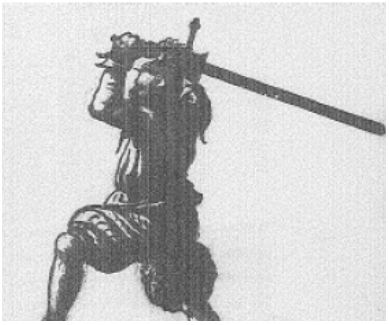
Half sword grip

Being that the longsword was developed after plate armor, most armored combat techniques revolve around disabling one's opponent or getting around the armor to deal a fatal strike. Disabling an opponent was a matter of disarming or forcing an opponent to the ground. For unarmored combat, slashing and cutting strikes were chief techniques, though slicing and thrusting techniques were practiced as well. The context of unarmored combat with this sword is unclear. The development of the rapier and later thin swords made the longsword an ineffective tool against the quicker sharper blades. Some experts believe that its practice in this time period was a form of general melee combat training that was used to strength the body and hone tactical skills. (Forgeng, 2003,12-13)

Longsword artifact from the Higgins Museum

The fundamentals of unarmored longsword fighting in German schools revolve around aiming strong strikes toward four main areas on the body. These areas are the upper and lower left and right of they body. The basic strikes require the user to "charge" the sword by bringing it behind the body. These results in the blows being stronger and forcing the opponent either block the strike or step out of countering range. Against an inexperienced opponent, this would force a one sided offence. To counter this, the longsword would block the opponent's strike in the "charged" position, allowing the user to take the offensive. (Fiore dei Liberi)

After a series of blows, guards, and counters (revered to as "devices") the combatants would separate and prepare for the next device. It is recommended that you try to start a device before your opponent sets up a guard and attack while he is not ready. Fighting dirty was often encouraged as a means of victory. (Forgeng, 2003,25-26)



The guard system for the longsword consists of four main. The first guard is the High guard. This guard places the longsword over your head in position to swing straight down. An alternate form of this guard places the blade on your shoulder instead.

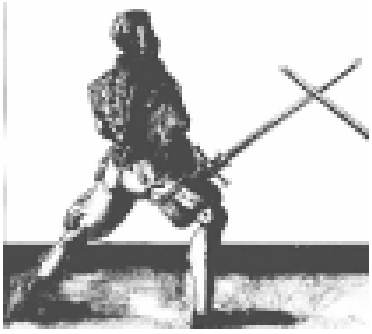
Example of a High guard

This guard was likely the most offensive of the four guards. This guard leaves the wielder open to attacks to low attacks and thrusts. Although these attacks can be defended from this position, it would be better to try to launch the first attack from this position. (Forgeng, 2003, 31)

The Ox is the second guard, which holds the longsword near the side of the face with the blade pointing down toward the opponents face. This is an effective guard to start with since it balances offense and defense. From this position the wielder can

Example of Ox guard

effectively block most straight cuts and thrusts, while being able to deliver strong cuts and thrusts as well. The only weakness in this guard is that it can't make cuts to the opposite side of the stance. (Forgeng, 2003, 32)



Example of the Plow

The Plow guard is held near the waist with the blade pointing up toward the opponents face. This guard appears to be used as a defense against cuts aimed at the body by threatening one's opponent with a thrust. From this position, a thrust could be delivered faster then any cut. The disadvantage to this defense is that it limits leverage on the blade and range of motion for the arms. (Forgeng, 2003, 33)

The fourth guard is the Fool's guard. This guard could be considered to be the opposite of the High guard since the position of the sword is held at the end of a straight down strike. This guard was used to bait your opponent into attacking you first.

Example of the Fool guard

After the opponent moves in to attack, any of the other guards can be quickly assumed and the user can switch to offence. The only disadvantage to this is that it is impractical if the opponent is unwilling to attack first. (Forgeng, 2003, 33-34)

The most basic cuts are straight and powerful. The High cut is delivered from the High guard and swung straight down. This cut is one of the strongest and has the best reach. The Wrath cut is swung diagonally down and to the opposite side of the guard. This is one of the strongest cuts and can be used to parry the High cut. The Wrath cut also has the added benefit of being executable from the Ox and High guard. The Middle cut is a horizontal swing from the High guard and the Low cut is an upward cut delivered from the Ox guard. Thrusting in longsword combat tends to follow an initial cut. The thrust is a difficult opening move since it is easily diverted and difficult to recover from quickly. (Forgeng, 2003, 42-43)

The Master cuts are the five most used cuts in longsword combat. The High and Wrath cuts are included among the Master cuts. The Thwart cut is a horizontal cut that counters a High cut and strikes the head of the opponent. This cut simultaneously catches your opponent's blade on your guard and following through on the strike. The Crooked cut is a counter to a High cut, Low cut, or someone in the Ox guard. The move consists of sidestepping to the right and crossing your arms in a strike toward your opponent's wrists or blade. The Squinter is a

technique that involves stepping out, raising the sword to parallel the face, and bringing the tip of the sword to the opponents face. (Starhemberg, 26-49)

A similarity between the Thwart, Crooked, and Squinter cuts is that they provide opportunities to use a thrust as a follow up technique. If the opponent tries to withdraw during a Thwart, thrusting to their face is a good way to land a critical strike. If a Crooked cut lands on the opponent's blade, moving to the Plow and thrusting can prove effective. If a Squinter is avoided by stepping out, a thrust is the most natural way to press the attack. The key to all these thrusts is being quick enough to strike before a defense can be mounted. (Starhemberg, 36-49)

After one of the combatants starts a technique, the other has many options on how to react. These options can be divided into dodging and parrying. Dodging techniques are most effective against sweeping blows where the momentum of the sword creates an opening. One such technique is called chasing, where you cut to the opponents head while stepping out. Another example is thrusting after stepping backwards out of the opponents range.

German masters discourage traditional parrying in longsword combat. Instead, students were taught to either use a cut that would cancel out their opponents cut, or to use a parry as the beginning of a technique. Binding, an example of the later, involves parrying a strike and forcing the opponents sword and forcing it in a direction. The problem with this defense tactic is that the instigator of the attack can use it as well. Binding can lead to multiple attack techniques. Slicing is a good follow up to a bind. While in a bind if the edge of the sword touches the side of the opponent, drawing away quickly can slice the opponent. Another good use of slicing is pushing the blade against the opponent's arms if he tries to pull away from the bind. Binds also allow rare opportunities to disarm, disable, and engage in wrestling techniques.

Since defense techniques attempt to turn the tables of who's attacking, there are also many techniques to keep the attacker on the offensive. One example is winding a straight cut so that it goes around the opponent's defense. Another example is called pulling, where you horizontally attack one side and then the other in rapid succession, or rebounding where you fake a pull and attack the same side again. (Forgeng, 2003, 59-75)

Falchion

The German school of falchion combat closely mirrors that of the longsword. Some strikes and guards share the same name as their longsword counterpart. One reason for this could be that it makes it easier to learn a secondary weapon if the techniques between the two weapons are very similar. Another reason might be for the purpose of using one weapon to fight the other. The German school of falchion combat, which focuses on the messer, differs from conventional falchion combat since stabbing is emphasized much more. This can be seen in Leckuchner Fechtbuch, where stabs follow most slashes. The reasons for this are open to interpretation but one likely reason is that a thrust leaves the wrist and arm at their most vulnerable. (Lecküchner, 2005)

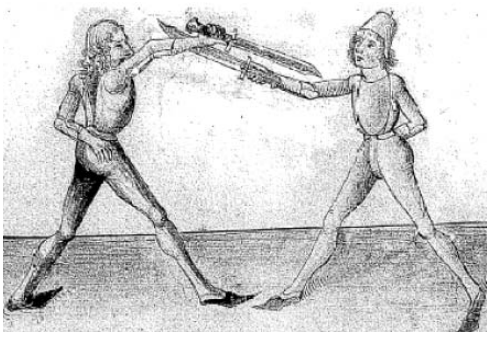
The four guards are quite similar to those of the longsword. The Bastion guard is similar to the Fool guard. It places your right foot forward with your point on the ground. This guard seems more functional in falchion combat then longsword combat since one-handed swords have a higher degree of freedom in regard to movement. In longsword this guard requires a guard change in order to make any offensive strikes. This does not apply to messer combat where a simple twist of the wrist allows for an upward cut.

The Watchtower guard places the right foot forward with the falchion with the pommel straight out from your face with the long edge pointed toward the opponents head. This guard is

comparable to the High guard in longsword combat. Like longsword combat, it is the starting position for all downward cuts. With a messer instead of a longsword, the reduction of leverage disallows the overhead horizontal components but the freedom of movement gained allows for stabbing techniques from this guard. (Lecküchner, 2005)

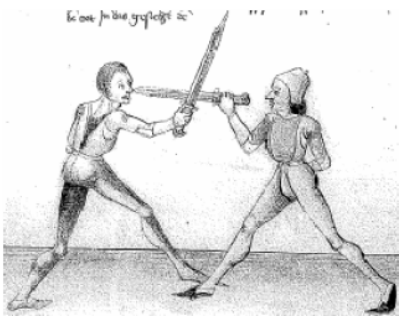
The Boar guard places the left foot forward with the falchion at either side of your waist with the point toward your opponents face. In terms of its place in combat and use, it is the same as the Plow in longsword. It functionality is expanded in that it can guard against horizontal attacks by slicing at the opponents wrists.

The Steer guard is similar to the Ox guard. This guard places either foot forward with the falchion straight out with the point facing the ground. Unlike the Ox guard this position seems the most defensive of the four. Most cuts and thrusts to the body can be parried from this guard and all cuts aimed to the messer or wrist can be easily dodged and moved to a counterattack cut. (Lecküchner, 2005)



Example of Wrath cut and counter

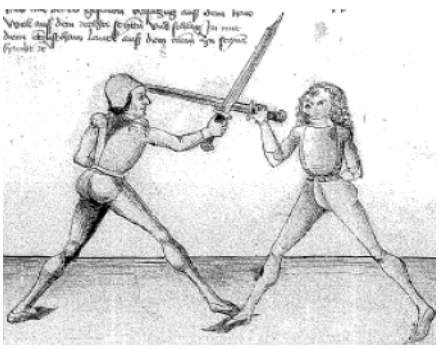
In the Munich document, the first technique described is a variation on the Wrath cut often called the wrath thrust. The technique counters a standard Wrath cut by making a Wrath cut, and then rotating your wrist till the point is being stabbed at your opponent. This is known as "taking off". The counter to this technique is to aim your cut at your opponent's wrist. The use of the Wrath cut is so varied that the number of devices that result from is quite large.



Example of the Waker

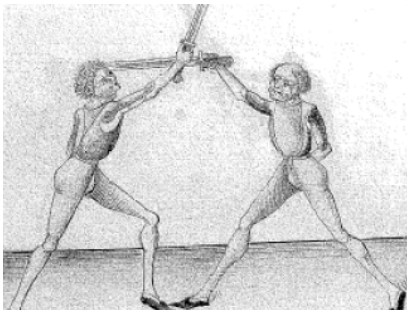
(Lecküchner, 2005)

The next technique described by Leckuchner is the Waker. The Waker is used against any guard where the falchion is in front of your opponent. The move had you start with your left foot forward and a horizontal swing at your opponent's falchion. When the cut makes contact, step forward and rotate your wrist clockwise so that the flats of the blades are touching and follow with a stab to the face. (Lecküchner, 2005)



Example of the Anger cut

The Anger cut is a counter to downward cuts. It requires the user to hold the falchion on his lower right side with the left foot forward. When your opponent starts his cut you step forward and bring the falchion around so that the blade is facing upward and point is aimed at the opponents upper body. A parry and a stab follow this to the head. If you make it to this position before the opponent's cut is near you, simply follow through with the cut toward the upper left target. (Lecküchner, 2005)



Examle of Danger cut

The Danger cut is used when your opponent is preparing to slash. Hold your sword in the Watchtower guard and use your wrist and legs to cut at your opponent's head. This technique requires no charge and must be preformed quickly to avoid being attacked. (Lecküchner, 2005)

Many general counters are the same as that of longsword combat in terms of dodging and parrying. Messer combat on the other hand emphasizes the use of disarming, wrestling, and grabbing techniques much more. Advanced fighters make good use of both hands by attempting to take away their opponents sword, grabbing their main hand in an attempt to land a finishing

strike, or outright wrestle the opponent to the ground. Each of these mechanics is so adaptable that it would be easy to believe that a swordsman would focus on one. (Lecküchner, 2005)

Sword and Buckler

Examples of First and second guard respectively

Unlike the Longsword and the Falchion, there are very few intact manuals that teach sword and buckler combat. The most complete guide to sword and buckler techniques is known as the I.33 document. A common thread throughout this document is that the buckler should rarely move too far from the hand gripping the sword. This suggests that the wrist was a popular target against inexperienced combatants. Most strikes are executed with the left foot forward due this positioning since having your right foot forward would leave your right side more open. (I.33, 1-)

Example of the Sixth Guard

There are seven basic guards for sword and buckler combat. The First guard or "Near" guard places the sword under the left arm and the buckler guarding the right arm. The Second guard is a variation on the Wrath guard, as it has the sword in the standard Wrath strike charge, with the buckler out guarding the front. The Third guard is the same as the previous but over the other shoulder and the Fourth guard has the sword held over the head. The Fifth guard depicted in I.33 is cut off but the part that is visible shows the sword held down the right side, possibly preparing for a horizontal slash. The Sixth guard has the buckler forward with the sword's point facing the opponent, possibly preparing for

a thrust. The Seventh guard is the equivalent of the Fool guard with the point facing the ground and the buckler covering the wrist. (I.33 2-10)

The goal of combat for the sword and buckler is to bind with the buckler and move in for a killing blow with the sword. This makes sword and buckler combat different from longsword or falchion combat where the blows are almost always aimed at the body. The techniques for sword and buckler tend to aim more toward the weapons or arms.

While I.33 has many sets and counters, it doesn't name many of its main techniques. There is a segment in the Starhemberg document that gives six main attacks. The first technique delivers a High cut toward the opponent then has you wrap your left thumb over the pommel and thrust upward. The second attack goes against a High cut by delivering a Low cut with the buckler next to the sword. The buckler blocks the strike and then has you attack at the same time. (Starhemberg, 80r-80v)

The third attack goes toward the opponent's sword and then toward the head. If this is blocked, jab at your opponent's head and cut to his leg. The fourth attack does a Thwart cut to each side and follows up with a thrust to the groin. The fifth technique is a faint stab above your opponents buckler and with a stab below followed by a Winding cut to his right. If this is blocked, cut to the leg. The sixth technique has you hold the sword and buckler in your left hand, then attempt to take his buckler away. (Starhemberg, 80r-80v)

Chapter 5: Armor

The art of war has been at the forefront of technological advances. Traditionally, knights have been the ultimate soldier on the battlefield during the middle ages in Europe. It was essential for the knights to keep up with technological advancements in armor to keep them protected. The knight could fight longer and defeat more adversaries if he was wearing more advanced defenses. The crafting of new armor developed quickly to support the need of the knights as superior armor was the key to winning wars.

Mail Armor:

The most widely used and typical form of metal armor in the Middle Ages was "European mail". "European mail" is defined by its arrangement, consisting of a series of circular rings, each interconnected with 4 other rings to form the armor. Most soldiers and knights wore mail starting from the 12th century, and mail continued in use through the 17th century.

(Pfaffenbichler, 1992, 4-5)

Mail armor was prized for its flexibility. Since the armor was made from an intricate pattern of rings, it was not rigid and did not hinder any movement of the person who wore it. Mail armor was also relatively comfortable to wear, and became even easier to wear once padding started being worn underneath the armor to cushion the body against chafing and to act as a shock absorber against blows. (Pfaffenbichler, 1992, 8)

In combat, mail armor provided great protection against slashing or cutting weapons. The mail could protect the wearer against sword cuts and low-velocity missile weapons. The mail did not protect the wearer from heavy blows since the armor was so flexible. A heavy blow to a person in mail armor could easily leave the person with broken bones and severe bruising.

The mail armor could also be punctured by crossbows, longbows and any other sharp pointed weapon with enough force behind it, like a spear. (Pfaffenbichler, 1992, 8)

The crafting of mail armor became a fast process to support the demand. Mail was relatively simple to make so it allowed for a division of the work in the shop. Early laborious stages were given to apprentices and assistants, while the final linking of the armor was left to the master craftsman. (Pfaffenbichler, 1992, 56-62)

There were two different types of rings used in the construction of the mail. An open-ring arrangement was most common. These rings were crafted from wrapping iron or bronze wire around a rod of the desirable thickness and then cutting up one side of the spiraled wire to make the rings. The ends of the rings were closed using iron rivets once they were fitted into place. The second type of rings was closed rings. These rings were punched out of a sheet of metal, either by a double-punch process, or just a single punch and trimming the outside. The closed rings were then used in alternation with open rings. The closed ringed armor was less likely to be pieced, due to the added strength of the closed rings. (Pfaffenbichler, 1992, 56-62)

The mail shirt, also known as a hauberk, was the first piece of mail armor that became commonly used. A mail cap, called a coif, was used to protect the knight's head and neck. The coif was either a separate unit or attached to the hauberk as a single piece of armor. The muffers were added to the end of the mail sleeves. Mufflers were the equivalent of mail mittens to protect the knight's hands in combat. Mail leg coverings called chausses were developed to protect the knight's legs and ankles.

Hauberks were commonly worn with belts to take some of the weight off the shoulders. A complete set of mail armor could weigh anywhere from 20 to 30 pounds. In addition to a belt, a surcoat was also commonly worn with a set of mail armor. A surcoat was a fabric garment worn

over the armor, mainly to display the knight's coat of arms. Other possible reasons for wearing this garment are for water resistance, sun resistance during summer, and as an extra layer during winter. This arrangement was the typical style in the 1200s, with the addition of a plate helmet. (Blair, 1958, European armor 23-32)

The Evolution of Armor: Plate

Even though mail armor provided some protection on the battlefield, there were many weak points in the armor. Metal pieces started being added to mail armor by 1250 to protect the critical spots on the body that the mail did not protect well. The earliest of these metal pieces was the poleyns, reinforcing plates attached to the knees of the chausses. The knees were regularly targeted on knights, especially when they were on their horse. Couters, disc shaped plates attached to the elbow, were also adapted into the mail armor after the poleyns. These two pieces led the way into the evolution of mail armor into full plate armor by the 1300s. (Blair, 1958, European armor 39)

Plate armor was first seen in use during the mid 13th century, but was not used commonly 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 work or artists from this age, and it is very hard to tell what is being worn under a surcoat in paintings. (Blair, 1958, European armor 37)

Making plate armor was a long tedious task. It first started with billets of steel or wrought iron. These billets were then hammered into flat sheets of metal. The flat sheets were then hammered over the appropriate metal formers or stakes and trimmed to form the desired shape of plate. Workshops had dozens of different metal formers and stakes as well as

specialized hammers to be used on the appropriate piece of armor. The edges of plate armor were originally left sheer but later they were finished by wrapping the edge around a piece of wire of the desired thickness. All the pieces of plates were then put together with rivets and straps. (Pfaffenbichler, 1992, 62)

Plate armor was created by a number of different specialized craftsmen. There was an armorer, who forged the plates. The plates then went to the polisher, who smoothed out and polished the armor. All the polished plates then went to the finisher. It was the finisher's job to put all the plates together to create the full suit of armor. It was also the finisher's job to fit the armor with straps and lining as well as internal padding. The most important job of the finisher was to fit the armor properly to the person wearing it. The fitting of the armor was crucial to comfort and mobility of the armor. When the finisher was done, the armor could go to the artists, etchers, gilders or painters to make the armor elegant. (Pfaffenbichler, 1992, 62)

There was a great deal of skill in the crafting of the plate armor. Great care was taken to make the vital points on a human thicker on the corresponding armor piece; the center of the breastplate, front of the helm, and in general the left side of the armor was made thicker for extra protection. Plate armor was also case-hardened, which made the outside stronger and more durable. (Pfaffenbichler, 1992, 63)

Iron plate armor had two common methods of case hardening. The first method involved smearing the iron with hog's lard, then wrapping it in strips of goatskin, covering it in clay and heating it for a long time. The carbon from the organic materials diffused into the iron turning it into steel. The second method involved surrounding the iron with crushed charcoal and packing it tightly in an iron box. The box was then placed in the forge and kept red-hot for a long period.

This method was more effective in diffusing carbon from the charcoal into the armor. (Pfaffenbichler, 1992, 63)

Steel armor had only one commonly used method of hardening. Steel by definition is iron that has a higher carbon concentration and therefore is already stronger than iron. The craftsmen used a technique of quenching to harden the steel armor. Quenching involved taking red-hot steel and quickly cooling it off, most commonly in water. Quenching with water made the steel extremely hard but also brittle, so it took many centuries to find the best technique to quench the steel, and this also meant that it was the knowledge and skills of the craftsmen that determined how good the armor came out. (Pfaffenbichler, 1992, 64)

Plate Armor

There were three different kinds of plate armor that were developed in the Middle Ages. One consisted of large plates articulated only where necessary for the movement of the body and limbs. This set of armor consisted of larger pieces of plate covering vital areas, with mail armor underneath to protect the areas not covered by the plate. The second type consisted of smaller plates riveted or sewn to fabric to produce a flexible defense. This was most commonly called a "coat of plates." The third set consisted of small plates joined together by a complex system of lacing. This style is called "lamellar construction" and allowed for great protection while not hindering the movement of limbs. (Blair, 1958, European armor 37-41)

The largest plate piece most commonly worn was the breast and back plate. This piece of armor covered the midsection of the person wearing the armor. Originally evolving out of the "coat of plates," as the size on each individual plate increased and the front plate became increasingly globular, the breastplate was fully formed by 1360 or so, but was not in wide use

until the 1380s. This globular design provided an effective glancing surface that deflected both hand and missile weapons. The left side of the breastplate was often thicker since it was the side most commonly facing an opponent. (Blair, 1958, European armor 39-41, 61)

The next piece of plate armor that developed was the leg harness in he 1300s. The leg harness included all the pieces of plate that protected the wearer's legs. It consisted of: the cuisse (the thigh plate); the poleyn (the knee plate); lames (the connecting plates); and the greave (the plate that protected the lower legs). Special care was given when constructing the lames. These small joint plates were riveted to a leather strap running along the edge of main armor plate on the inside. The lames allowed for the bending of knees and as well as the elbows without losing protection for the wearer. The sabatons also become a common piece of plate armor that protected the feet. The sabatons originally started out as pointed plate shoes. Later a boxed toed design became popular. (Blair, 1958, European armor 42)

The arm defenses developed soon after leg defenses. The arm defenses started with pauldrons covering the shoulders. During the 13th century, ailettes were commonly worn by crusaders. These were rectangular plates laced to the sides of the shoulders and projecting up on either side of the head. The ailettes served to protect the head and neck from side cuts from enemies. The rerebrace covered the upper arm and was connected to lames that covered the elbow and then to the vambrace that covered the lower arm. The hands were covered by gauntlets. The gauntlets, which were used as early by 1296, were the most complex piece of the arm defense. They incorporated many plate pieces linked together, allowing free motion of the hand while also providing protection. (Blair, 1958, European armor 44)

Another noticeable change to armor for jousting and combat armor was the addition of a lance rest to the right side of the breastplate as early as the 1380s. The lance rest helped the

knight balance his lance and gave him more control with aiming the heavy lance. The lance rest also allowed the knight to hit harder with his lance. The lance rest allowed the energy from the horse and the knight to add to the force of impact he inflicted upon his opponents. (Blair, 1958, European armor 61)

One piece of plate armor that has had numerous designs and changes has been the helmet. The first plate helmet commonly worn during the medieval ages was during the 12th century. This head protection was called the great helm. Often called the barrel helm, it had a cylindrical shape with a flat top, with openings for the eyes and sometimes nose and mouth. However, the flat top was an easy target for the sword or other weapon to hit. A new shape of the helm was called for. (Edge and Paddock, 1998, 53)

The basinet helmet style was developed to provide better protection from slashing weapons than the great helm. It became very popular during the 14th century. This helm had a conical shape that deflected blows from the helm. The basinet had a fan-shaped curtain of mail hung off the back of the helm to protect the wearer's neck, called an aventail. The basinet also had a movable visor that usually had a guard chain attached to it. (Edge and Paddock, 1998, 55)

From the basinet came similar helms with slight variations. There was the "dog-head" basinet. This helmet had a long coned-shaped visor. There was also the great basinet. The great basinet had a firm plate defense in the back of the helm instead of a mail aventail. The plate defense provided much better protection to the wearer. (Edge and Paddock, 1998, 72-73)

In the 15th century, the sallet helm was developed. It had a deep skull shape that was either all one piece or sometimes with a visor. It had a short tail that went down the wearer's neck, either made as part of the skull or of smaller pieces riveted together for flexibility. In some

cases the helm was used with a bevor, a cup shaped plate to cover the wearer's chin. (Edge and Paddock, 1998, 89-100)

Also in the 15th century, the barbute helmet became popular in southern Europe. It had a rounded skull with a keel-shaped comb. The helm had a heavily flared tail and cheek pieces. The front was either an open face, or had a "T" shaped opening for the eyes, nose, and mouth. (Edge and Paddock, 1998, 99-100)

In the 16th century, the armet became the predominant type of helmet. This had a one-piece hemispherical skull truncated at the level of the tops of the ears except at the rear. The cheek pieces were shaped to fit the wearer's cheeks. The helm then had a pivoted visor bluntly pointed and passed over the sides of the cheek pieces. (Edge and Paddock, 1998, 105-106)

Full plate armor, also called white armor, became the standard apparel for a knight in the 1400s. It offered great protection during combat, but there were also drawbacks. For one, the armor itself was very heavy and cumbersome. A full set of field armor could weigh anywhere from 40 to 70 pounds. (Blair, 1958, European armor) Wearing all that plate armor also kept heat trapped in the suit and many knights suffered from heat exhaustion. Lack of air could also be a problem. White armor was also subject to structural failures and it was a common practice to attempt to induce failure in your opponent's armor. Many battles were as much a combat of endurance as well as of with your weapon. Nonetheless, plate armor was a knight's best defense if he was strong enough overcomes its weaknesses.

Tournament Armor

It was very common in the Middle Ages for knights to practice fighting in tournaments. These tournaments often centered on jousting with a lance, but they also included armored sword, pollaxe and spear combat as well as others. Over time, these tournaments transformed themselves into more of a sport than a means to practice skills of combat. Variations of armor soon developed to adapt to the sport aspect of these tournaments.

There were many changes to armor to allow a knight to joust better in medieval tournaments. In jousting, mobility became less important than safety. Suits were designed specifically for jousting, heavier and more elaborately reinforced to protect the knight from a lance blow. Special armor specifically designed for tournaments can be seen as early as 1280. A typical suit of jousting armor could way upwards of 90 pounds. Suits of armor with reinforcing plates on the left started being commonly worn in France in the 1450's. Webbing on the left arm that held the elbow in place called a pasguard also became popular. A one-piece guard for the hand and lower arm called a manifer was developed to protect the knight's left hand in jousting. (Blair, 1958, European armor 158-159)

In the 14th century, a new style of helmet was designed specifically for jousting, called the frog mouth helm. It had a low skull and curved up and out at the front to form a flattened point along the line of sight of the knight. This helmet was unique in the fact that the wearer could not see unless he was bent over, as he would be bent over in his saddle for jousting. This design greatly protected the knight's eyes, and its shape allowed lances to be deflected off of it. (Blair, 1958, European armor 157)

The Decline of Plate Armor

The sixteenth century starts the decline of the knights as the ultimate fighting force in battle. The major cause for the decline in plate armor was due to the development of firearms. By the 1500s these could pierce through plate armor, defeating the purpose of wearing armor. To compensate, armor started being made thicker to stop the bullets. Armor in the 16th century is regularly seen with a dent in the breastplate from where it would be test fired upon after it was made. (Pfaffenbichler, 1992, 9)

By the 1560s, fire arms had been well developed causing plate armor to be made thicker to compensate. It got to the point that the breastplate became so heavy that other pieces of armor were not being worn to reduce weight. Towards the later part of the 16th century, only a breastplate was worn and it was so thick that it became impossible to wear for any length of time. This inevitably led to the declining demand for plate armor. (Pfaffenbichler, 1992, 9)

While still in use in the Middle Ages plate armor created entirely new fighting techniques. Armored combat was a technique that took a lot of knowledge to master. The armor provided a high degree of protection and therefore made it harder to win a fight. Therefore, many unconventional techniques developed from armored combat as a way to defeat your adversary.

Armored combat duels had a common sequence of events. This sequence started with both contestants fighting with staff weapons, and then moving into combat with swords. Eventually the fight would end with wrestling and dagger fighting. 'Now you should know that, for the most part, all dueling in harness [armor] comes in the end to dagger fighting and wrestling.' (Starhemberg 71v-71r) This shows that there was a great emphasis in technique

towards wrestling. Armored combat is based on targeting vital points on the opponent's armor to hurt him and allow a combatant to win once wrestling begins.

There were not too many vital points in plate armor to target. The best places to attack on an armored man were under the face, under the armpits, the palms of the hands, on the arms from behind into the gauntlet, hollows of the knee, below on the soles of the feet, inside of the elbows, and between the legs. Many of these spots are only covered with mail, which was easier to pierce than plate. These points on the armor are best hit with a dagger but should be targeted as much as possible with any weapon. Other goals in a fight would include disarms, limb breaks or dislocations and throws. (Starhemberg 58v-58r)

The typical armored fight, as described in German sources, starts off with lance verses lance. You can deliver a fatal thrust to your opponent and win the fight. You can throw your lance and move into sword combat, or you can get close enough to your opponent and move directly into wrestling. If you end up fighting sword versus sword, the object is still the same as with the lance; penetrating your opponent's armor and win the fight or get close enough to wrestle. The entire time of using weapons, you are also trying to hurt your opponent or his armor to allow you to stab him easier or win in wrestling. The battle ends when you have delivered a fatal blow from one of your weapons or pinned your opponent and delivered the fatal blow from a dagger.

Fight Sequence:

When the fight starts with you and an opponent wielding spears, there are two different stances to take. You could hold your spear to your right in a low guard position. This stance is meant for immediate thrusts to your opponent's head before he thrusts first. If your thrust is

parried, then go into a high hanging stance and thrust down on your opponent. In the second stance you could start holding the spear above your head with your right hand, and throw it at your target. This should be immediately followed with the sword against the opponent's lance. The goal of fighting with spears is to either plant a blow to your opponent's head or armpit, or to get in close enough to wrestle him. (Starhemberg 55r-55r to 55v-56r)

You now could be stuck facing an opponent who has a lance while you have a sword. It is important to note that in armored combat, a knight holds a sword with his right hand on the pommel and his left hand on the blade itself. This gives the knight more control of the tip and additional force for puncturing armor. With a sword, you can either use a high guard or low guard depending on the guard of your opponent. You should then try to go after your opponent's face but expect to parry the opponent's attack. You can parry with the end of your sword and then swing the pommel around to the opponent's face. You can also use your left hand to swipe away a thrust and then quickly grab your blade again as you thrust at your opponent. If you can, you should grab the opponents spear and either break it or use the opportunity to thrust at your opponent. In most cases, you should drop the lance and take up your sword if your attacks get parried or you are in danger of getting hurt. (Starhemberg 57r-57r to 58v-58v)

The next stage in fighting is sword versus sword combat. There are four different guards that are used. Each guard has a unique set of attacks and parries depending on your opponent's actions. Being able to switch between the guards to counter your adversary's actions allowed you to prevail in the fight.

The first guard is a high guard technique. Hold your sword with your right hand on the hilt and left hand holding the middle of the blade, above your head on the right side with the point down at your opponent's face. The high guard is used to counter any lower guard. It also

allows you to make quick attacks to the face. There are also many techniques that allow you to parry and hook your pommel around your opponent's neck and pull him to the ground over your knee. (Starhemberg 61v-62r to 63v-63v)

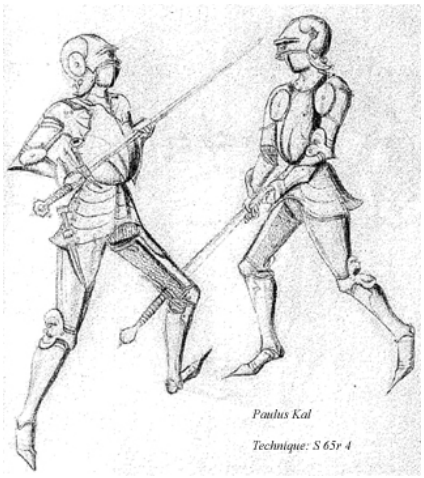
The second guard is a low guard technique. Hold your sword in the same manner as the other guard but hold the pommel near your right knee and the point raised towards the opponent's chest or head. The second guard has a more defensive type of technique that lands blows from counters to a high guard. The second guard also has many techniques to attack the legs and knees to knock your opponent down. The low guard also allows you to counter attacks from a high guard with an arm break. (Starhemberg 63v-63v to 67r-67r)

The third guard is purely a defensive guard. The sword is held by the right hand on the hilt and left hand on the middle of the blade, while positioned horizontally over the left knee in a guard. This guard is purely meant to counter attacks made from your opponent. From the counters made in this form you can counter attack your opponent. (Starhemberg 67r-67r to 67v-67v)

Defensive Low Stance 1

The fourth guard is used only when you are trying to pierce a piece of mail on your opponent's armor, usually at the armpit. After you have gotten the point of your sword against your opponent's mail, you move into this guard and hold it under your right armpit and set the one quillon in front right on your chest to hold your point into your opponent. This is to prevent your opponent from thrusting or striking you and to keep your sword tip firmly against the mail to burst through it. (Starhemberg 67v-67v to 68r-68v)

There are also techniques, described in Liegnitzer's treatise on half-swords, which are called Murder-blows. These murder-blows include looking to attack your opponent's head but then moving your right hand down to your left and swinging the pommel of the sword around to strike your opponent. The strikes from the pommel are to the head, arms, knees, ankles, or any weak point in the opponent's armor. (Starhemberg 78v-78v to 79r-79v)



Low Murder Blow 1

The rest of the fight involves wrestling techniques. The goal with wrestling is to pin your opponent so you can make the final blow with a dagger. It is stressed heavily in treatises to never pull out a dagger unless you have pinned your adversary. There are different pins used depending if you opponent falls on his stomach or back.

When your opponent falls on his stomach, you have an easier chance of pinning. One technique is to fall with your right knee behind his pelvis, and then grasp the helm and either pull up or twist the neck. You can also sit on the back of the opponent and grasp one hand and pull it behind your foe's back, thus preventing him from getting up. Then use the free hand to work the dagger. (Starhemberg 59r-60r to 61r-61r, 91r-91v)

It was more common for a person to fall on their back, thus there are more techniques for wrestling when your opponent's on their back. An immediate technique that can be utilized quickly is to fall full force across your opponent's face and then reach around the neck with one arm and work the dagger with the free hand. You can also fall with your right knee between the opponent's legs and land the left hand about his throat, then use your right hand to work the dagger. There are different variations of the form where you pull your opponent's arms underneath you or inside the crook of your knee as you fall down upon him. Pinning your opponent will give you enough time to finish him off with a dagger. (Starhemberg 59r-60r to 61r-61r, 91r-91v to 92r-92r)

Many times, it was difficult to overpower an opponent into a pin, thus a style of dirty fight was used. The anonymous commenter on Liechtenauer writes about the "Forbidden Wrestling" techniques. He says the "'Forbidden wrestling' techniques were forbidden by all wise sword-masters; so that they are not learned or seen by combat students in open schools

because they are used in armored dueling." (Starhemberg 59r-59r) He's saying that the tricks in the forbidden wrestling technique are kept secret to surprise any opponent.

Pinning Technique 1

Pinning Technique 2

Forbidden wrestling utilizes techniques to hinder an opponent and make it easier to pin them or kill them. Some of the moves include: arm breaks, leg breaks, knee-jabs, genital-jabs, finger-prising, and eye-gouges. If an opponent comes at you with an outstretched hand, grab a finger and pull up hard to break his fingers. You can also cut or rip a piece of his opponent's arming coat, the dirtier the better, and thrust it into his opponent's visor with a dagger. You should attempt to use any of these moves as often as possible to hinder your opponent. (Starhemberg 58v-58v, 92v-93r)

An arm break can be a great advantage in wrestling. In many of the pins described earlier where an opponent's arm is pulled back, a hard pull upward from the elbow will dislocate your opponent's arm. If your opponent has fallen on his back, drop down with your knee on his elbow and then yank up hard on his hand to break his arm. Breaking your opponent's arm or dislocating it prevents him from maneuvering himself and gives you a power advantage. (Liechtenauer 60v-61r to 61v-62r, 92r-92r)

The final move in a fight is done by the dagger. You should always try to take your opponent's dagger, making it harder for him to get a dagger since he would have to go after yours, where you can then thrust at his open palm. The dagger ended the fight with a stab to the throat. If you are having difficulty working your dagger, you can stab the opponent in the armpit, groin, or any of the other vital points on in the armor to weaken your adversary. The fight was over once the opponent's throat was pierced. (Starhemberg 91r-91v)

Conclusion

Through over a year of work, the team has finally reached a product that they are proud to show to museum patrons and to scholars of the medieval martial arts.

In the study of documentary filmmaking, the project team viewed many documentaries and highlighted their strengths, while maintaining focus on three important aspects: establishing a cohesive narrative, utilizing proper photography techniques, and exploring fundamentals of documentary editing. These aspects were carried into the post-production phase where the team used studio-quality editing tools to achieve their desired results.

Despite long hours in front of editing computer, multiple issues with borrowed equipment, and the ever so dreaded software crash, the project's videodocumentary was completed in a form that not only met, but exceeded the project team's expectations.

The inherent strength of a wiki is customization, and it is through the simple process of adding, deleting, or modifying individual pages where subsequent project teams and experts in the field can build upon the foundation created by this team.

The team also received valuable assistance from a variety of sources. From research experts in the WPI library to modern day medieval martial arts practitioners, this team was afforded many benefits which were reflected in the final product.

We hope that this project provides a modern understanding of the historical context and that this project acts as a resource that is both universally accessible and easily comprehensible.

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Appendix A: Team Biographies

From left to right: Michael, Ryan, Curtis, and Imran

Michael DeCuir

Michael DeCuir grew up in and fell in love with New Orleans, Louisiana. He considers himself one of the strongest writers in the group, often jokingly referring to himself as the project's poet laureate. Michael is an aspiring rocket scientist, a competition fencer, and an avid traveler, who tries to spend at least one week a year in a place he's never been before. In his free time, he enjoys classic literature, foreign rock, and fine cream soda. Michael's contribution to the project included all staff information as well as guidance and delicate phrasing of all group written sections.

Ryan Trunko

Ryan Trunko, a bright-eyed civil engineering major, plans on concentrating in transportation engineering. Throughout his life, Ryan has loved the preservation of history; thus, he decided on this project. To continue his passion, he works at the George C. Gordon library at Worcester Polytechnic Institute in repairs and preservation making sure that the manual method of cutting and pasting goes on for generations to come. His main focus on the project was researching and documenting Armored combat.

Curtis Jerry

An Aerospace Engineering major, Curtis worked on this project throughout his junior year. Curtis is an amateur inventor and pyrotechnic who aspires to create the coolest explosions this side of the 4th of July. He was responsible for the sword section of the research, documentary, and website.

Imran Malek

While not slaving away in front of his computer screen patching together video clips and munching on high fiber organic cereal, Imran enjoys working on any other aspect of media production while spending his "school time" figuring out how to engineer a better prosthetic ankle. Imran hopes to keep the historical tradition alive through all types of media. Imran was the man to see about wrestling, daggers, and video editing.

Appendix B: Budget/Inventory

Item	Price	Quantity	Total
Cameras	**FREE**(ATC)	3	$0.00
Tripods	**FREE** (ATC)	3	$0.00
Steady Camera: Used to capture dynamic shots without shaking the camera.	**FREE** (Provided by Bill Short)	1	$0.00
Lapel Microphones	**FREE**(ATC)	1	$0.00
Color Matching Charts: Used to match color settings on cameras	**FREE**(Provided by Bill Short)	1	$0.00
Dry Erase Boards	$5.00	2	$10.00
DV Tapes: Used to record video footage.	$5.00	9	$45.00
Adobe Premiere Pro: Video editing software	**FREE**(WPI Movie Lab)	1	$0.00
Snack Bars: For craft services	$6.00	3	$18.00
Water bottles: For craft services	$9.00	2	$18.00
Blank DVD Media	$0.20	10	$2.00
20 Yards of Fabric: For set dressing	$20.00	1	$20.00
Practice Swords, Armor, and Weapons	**FREE**(Provided by the Museum and/or guild)	1	$0.00
Costumes	**FREE**(From guild) and $5.00 (for tights)	2	$10.00
TOTAL			$123.00

Appendix C: Recommendations to subsequent projects

As more teams utilize the resources of WPI and the Higgins Armory Museum, it becomes important for these teams to take the work done by previous groups and expand upon their successes and learn from their mistakes.

The project team offers these recommendations for subsequent teams

1. Acquire a budget well beforehand, no matter how cheap you think the project will be, there will be many resources that may be overlooked, such as:
    a. DV Tapes
    b. Set decorations
    c. Printing costs
    d. Costumes
    e. Rewritable DVD Media
    f. Lighting equipment
    g. Food and drinks for people on the set.
    h. Any type of compensation for the actors and/or others involved in the project .
2. Always maintain both a physical and electronic paper trail and bring both a USB drive and all relevant documentation to every meeting.
3. If working with any outside organizations, do not expect them to immediately fall under schedule, plan *well* in advance and always accommodate your schedule to theirs.
4. Do not forget to use WPI's academic technology center, they provide DV tapes at a discount as well as cameras, tripods, and microphones. We recommend that you rent camera "1997", it is a professional-quality 3 CCD DV camera.

5. If no one in your group has video editing experience, do not expect to learn it in a span of 2 weeks. Video editing is a complex and intricate process that requires much foresight as well as training and instruction into the nuances of the software.
6. Do not film the techniques that you have written out to be performed for your video, let the professionals handle it, they have much more experience with the fundamentals of medieval combat.
7. Familiarize yourself with copyright law, and get acquainted to creative commons licensing, the worst possible outcome of your project is being sued.
8. Budget a lot of time for weekly meetings, and meet more than once a week.
9. Be prepared to revise your work often, it is very rare for something to be correct the first time.
10. Inter library loan is your friend, however, make sure that you budget enough time for the books to mailed to the school.
11. As soon as you start working on your project, establish a connection to the Higgins Sword Guild so that they can offer their knowledge of techniques and point you to expert sources.
12. Always maintain a sense of camaraderie between group members and make sure that everyone has their “eye on the prize”.

Appendix D: Documentary Credits

Cast

J. Morgan Kuberry
Eli Huebner
Andy Volpe
Don Kindsvatter
Mark Millman
Resa Nelson
Jeffrey Forgeng
Ryan Trunko
Michael DeCuir

Camera

Imran Malek
Ryan Trunko
Bill Short

Lighting

Bill Short

Choreography

Michael DeCuir
Ryan Trunko
Curtis Jerry
Imran Malek

Research Consultant

Jeffrey Forgeng

Music
Matti Paalanen
"Celestial Aeon Project"
http://www.mikseri.net/artists/?id=48147

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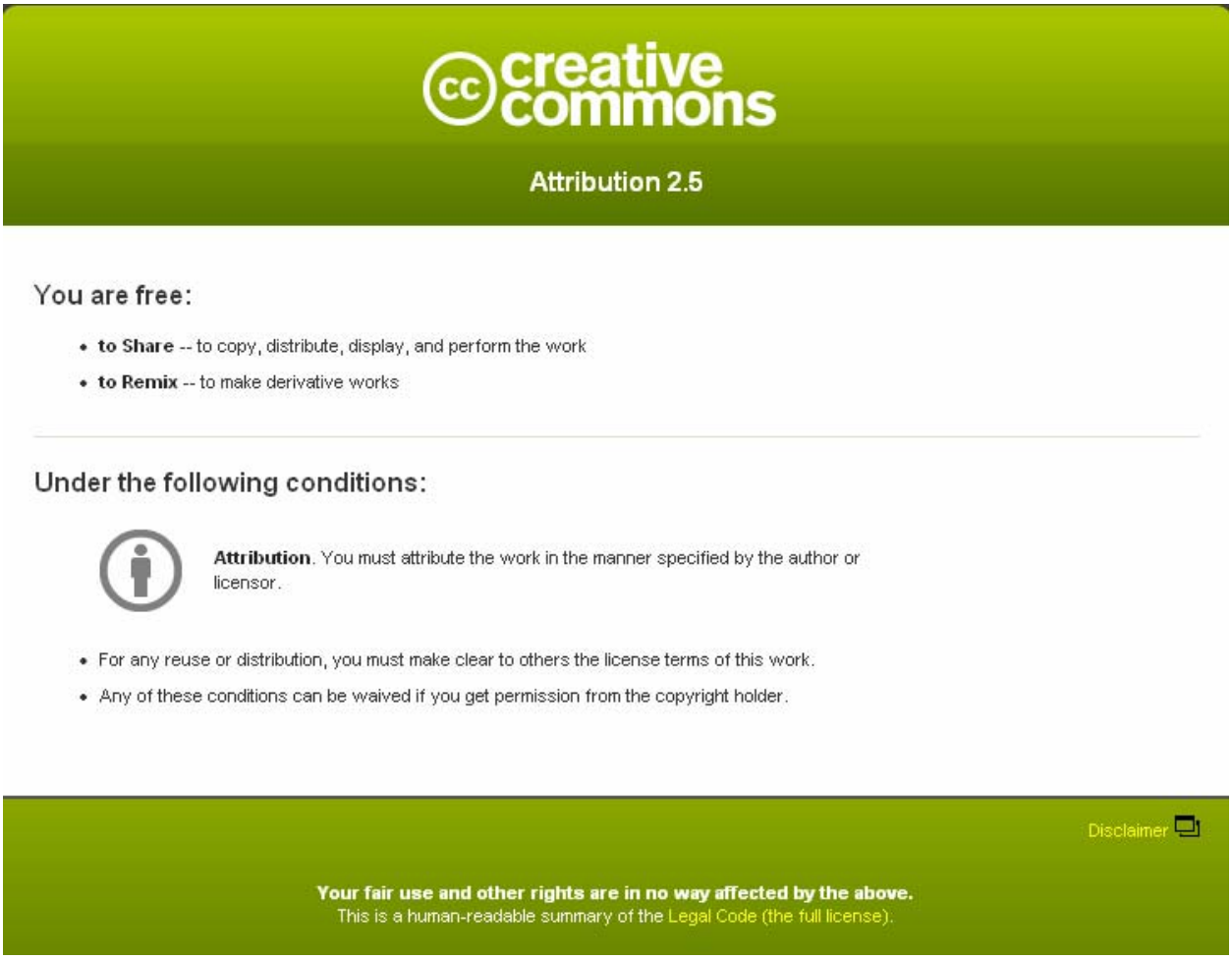

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Appendix E: Documentary Script

INT. MODERN MARTIAL ARTS DOJO

Camera pans around students practicing their technique at the instruction of their teacher, while the narrator speaks.

NARRATOR

The students here are practicing a method of East Asian hand-to-hand combat that has been passed down through many generations and has seen a growing level of interest in the western world since the 1960s.

Show image of Bruce Lee and clips from eastern martial art movies.

This is the scene that comes to mind when most people hear the term "Martial Arts".
Most people are unaware of the complex traditions of martial arts that existed in Europe during the Middle Ages.

Show clips from previous IQP’s armored combat.

Show footage of Europe, portraits of kings, and paintings of

knights.

The height of the European Middle Ages was from around 1100 to 1500 AD, a time characterized by feudal kings and armored knights. Throughout western Europe, these warriors dedicated their lives to the art of combat.

LAME MEDIEVAL COMBAT FOOTAGE

Footage from public domain films with medieval knights hacking away at each other.

NARRATOR

Hollywood has traditionally portrayed medieval combat as nothing more than contests of brute force.

Footage of Knights fade into still pictures of medieval

masters and students (from Tallhoffer)

But in reality, privileged youths of the time were taught refined fighting techniques by experienced masters.

(MORE)

NARRATOR (cont’d)
These masters were well versed in a number of weapons and combat styles.

DESCRIPTION OF THE SETTING

Scroll over manuscripts that have illustrations.

NARRATOR
Aside from taking on students a few of these masters documented their techniques in handwritten books. These manuscripts, sometimes written in poetic couplets, included elaborate illustrations and detailed discussions of the techniques of combat. While it is still unclear **wh**y these manuscripts were written, it is evident that they were an integral part of the martial tradition, particularly in Germany.

EXPERT ON MASTER/STUDENT RELATIONSHIP

JEFFREY FORGENG

interviewee talks about the relationship between student and teacher, as it comes from Talhoffer

INT. FIGHTING SCHOOL -SET-UP FOR 4 TYPES,

Insert shot of Millman talking to all of his "students"

NARRATOR

A martial arts teacher in late medieval Germany had to pass practical tests of mastery, much as craftsmen had to prove their skill to a craft guild. The master could then take on students, teaching them various forms of both unarmed and armed combat. Practice of the martial arts was recognized as a healthy form of exercise, but it could also serve a practical purpose in preparation for judicial duels, self defense, and warfare.

Pan to two students who are fighting unarmed.

UNARMED COMBAT W/ BRIEF ARMOR

NARRATOR

One of a knight’s most essential skills was wrestling, a discipline built on balance, leverage, and timing -- principles which make up the very fundamentals of all forms of combat.

Footage of hold and knockdown moves

"QUOTE GUY" is someone reciting the following quote from Ott.

QUOTE GUY

"In all wrestling there should be three things. The first is skill. The second is quickness. The third is the proper application of strength. "

Show Talhoffer footage.

NARRATOR

Medieval wrestling involved techniques that parallel those from all around the world. Wrestlers exploited balance,

timing, and leverage led to achieve a
single goal: total control
of the opponent.

Student A throws Student B to the ground

NARRATOR
By any means necessary.

Student A throws Student B using the axle wheel throw.

NARRATOR
One of the greatest benefits of
wrestling was that it taught
principles and techniques that
could be applied to all weapons.

The students reset, and then they pull out practice daggers.

NARRATOR
Dagger combat was very similar to
unarmed combat, with the dagger
essentially acting as an extension
of the arm.

Technique shot with dagger thrusts.

NARRATOR

During the Middle Ages, virtually all men carried daggers, serving both for self defense and as multi-purpose tools.

Show close-up shot of dagger

More shots of students practicing their thrusts.

NARRATOR

In a typical dagger contest, the individual who was able to land the first blow was the victor, often with a fatal outcome.

Shots of various daggers continue. Fade the shot back to technique fighting.

NARRATOR

Despite the advantages offered by the use of daggers, unarmed combatants were not defenseless against attackers wielding daggers.

Shot of an unarmed vs dagger move

POLE COMBAT

NARRATOR

While wrestling was a fundamental skill for all forms of close combat, students required education in a range of weapons in order to become well rounded fighters.

Camera moves to two students practicing with quarter staffs. Technique 1.

NARRATOR

Quarterstaff combat was another basic style taught by masters. Staff weapons such as the spear, halberd, and pollaxe were based on the techniques of the simple quarter-staff.

Cut to a shot of a full weapons rack with many staff weapons, focusing on a simple staff. Still shots of quarterstaff combatants from Meyer.

NARRATOR

The quarter-staff was basically a

wooden pole about 8 feet long with
blunt ends. This weapon was
favored in training due to its
simplicity and its ability to inflict
non-lethal injuries.

Camera goes back to students fighting with quarterstaff.
technique 2/4

NARRATOR
Quarterstaff fighters typically began by
keeping their distance and jabbing
with the tip of the staff at the opponent’s
face. This was often accomplished
by prompting the opponent into an
attack, then parrying and attacking
to his face.

Combatants do Technique 3a and counter

NARRATOR

When this was not enough, one could
use a variety of follow-up techniques,
including throws and attacks with
the butt-end of the staff to get the chance for that
winning strike.

Students perform move 4 ending with one falling.

SWORD COMBAT

Camera pans over to students practicing with longswords.

NARRATOR

The emblematic weapon of the knight was the sword. Like staff weapons, medieval swords had many different forms. The sword favored most by knights toward the end of the Middle Ages was the longsword.

Pictures of plates cycle across the screen.

NARRATOR

The average blade length of the longsword was around 3 feet and the weapon
weighed from 3 to 5 pounds. The longsword was one of the most versatile weapons of the period as

(MORE)

NARRATOR (cont’d)

it could be used on horse or on
foot, with one hand or two, and
could be used like a spear,
warhammer, or even a dagger
depending on the way it was held.

Pictures of plates cycle across the screen.

NARRATOR
The most basic attacks in sword
combat consisted of cuts, slices
and thrusts.

Scene of students practicing cut

NARRATOR
Cuts were sweeping attacks aimed at
the mid to upper body.

Students practicing slice

NARRATOR
Slices used the base of the blade against the lower
arms and wrists of the opponent and
either attempted to make cuts on
the arms or push through the
opponent’s defense.

students practicing thrusts

NARRATOR
Thrusts were mostly aimed at the opponent’s head and served as both an opening attack and a counterattack.

cycle through other attack

NARRATOR
A skilled swordsman would use every other part of the weapon. A pommel bash could be executed to stun an opponent. The so-called murder stroke turned the sword around to use the crossguard as a warhammer.

ARMORED SWORD COMBAT

show pictures of plate armor and people wearing it.

NARRATOR
All of these weapons forms converged in armored combat, which

incorporated elements of sword and staff fighting, dagger, and wrestling.
Fighting in plate armor altered some of the basic parameters of combat.
A person wearing plate armor was protected against cuts and slashes but vulnerable in the gaps between the plates.

QUOTE GUY

"The best places to attack an armored man through the harness, are under the face, under the armpits, in the palms of the hands, on the arms from behind into the gauntlets, into the hollows of the knee, below on the soles of the feet, in the insides of the elbows, and between the legs, and anywhere the harness has its articulations."

Show a person in plate mail in a low guard holding a longsword and zoom in on how he’s holding it.

NARRATOR

Because of the increased accuracy needed to hit these openings in the armor, longswords were held with

the main hand on the hilt, and secondary hand on the middle of the blade. The armored combatant was essentially taught to use a longsword as a spear.

Zoom out to show a second person in armor holding a longsword in a high guard facing the other person ready to duel

NARRATOR

Students would be taught to attack from either a high guard or a low guard. They would use a series of thrusts and parries to get in close and penetrate a weak point in the armor.

Masters would also teach students how to attack with the hilt of the sword, delivering a powerful jab or a crushing blow.

NARRATOR

All of the knowledge acquired in these schools was put to the ultimate test in an armored duel.

DUEL BETWEEN TWO ARMORED KNIGHTS, ONE WITH A spear, THE OTHER WITH A SWORD

A duel proceeds, they fight according to established technique, the fight ends in wrestling and a fatal dagger blow.

After the big finish, the surviving fighter walks away in slow motion, the narrator then speaks:

NARRATOR

With the rise of firearms at the end of the Middle Ages, the interest in the close combat styles taught by the medieval masters began to fade away. However, in dozens of surviving manuscripts, the masters' teachings have been preserved into the present.
Today, modern schools like the Higgins Armory Sword Guild study these manuscripts in order to reconstruct historical fighting styles.
Through these long-forgotten texts contemporary scholars and practitioners can once again study these lost martial arts and journey along the path of the medieval warrior.

Appendix F: Original Proposal

Mandate Statement

The four of us are tasked with the ventures of updating and upgrading previous work conducted by other groups as well as incorporating newly acquired research into a website, a video documentary, and a report. The project will focus on Martial Arts techniques of the medieval period, with emphasis on techniques of swords, daggers, staff weapons in both armored and unarmored combat.

Introduction

The study and documentation of historical artifacts are an important part of modern society and the presentation of such artifacts in an educational context is equally so. Our team of four is charged with the task of researching and documenting pieces of history and presenting those pieces in a professional quality videodocumentary to be shown at the Higgins Armory Museum in Worcester, Massachusetts. As a team we will cover martial arts in the medieval period. In addition to the documentary we will expand upon work conducted by previous teams in the form of a website. All of our work will be designed to appeal to a public audience.

The videodocumentary will be approximately twelve to fifteen minutes long and will provide the general public with a basic understanding on four different subjects of medieval martial arts: swords, daggers, staff weapons, and armored combat. The website and documentation will provide a much more detailed account of our research and will include a searchable database of sources.

Using information acquired from libraries across the country, including the Higgins Armory Library, we will research both martial arts of the medieval period and the techniques of professional documentary filmmakers. In our research of the martial arts we will focus on four basic areas: artifacts, in order to understand the specific weapons used in combat, context, in order to get an understanding of the settings in which the weapons might be used, technique, in order to see how the combat was executed, and sources, in order to identify the primary source materials of the field. When studying documentary-making we plan to focus on three important aspects: establishing a cohesive narrative, proper photography techniques, and fundamentals of documentary editing.

In order to accomplish these tasks we will divide our work into three terms, within each of which we have developed seven-week plans that will guide us in our three general phases: Research and writing, filming the documentary, and compiling and editing.

We hope that the project will provide a modern understanding of this historical subject and that the project will act as a resource that is both universally accessible and easily comprehensible.

Overview of Medieval Swords

Swords were the single most versatile weapon and possessed the highest status during the medieval era. There were also many variants of the sword ranging from small one-handed weapons to large two-handed swords.

The *Messer*, or falchion, was a small single-handed sword with a single edge toward the base which commonly had a sharpened notch on the back near the tip. It was specific to Germany and adjoining areas, but is important to modern study because of the survival of a fully illustrated treatise on the weapon from 1482, the most substantial medieval source on any single weapon.

Knights of the Middle Ages are popularly known for use of the longsword, or "hand-and-a-half" sword. The method in which the longsword was used depended on the situation. For example, if a knight were on horseback the longsword would have been held with one hand, while if he were battling on foot the longsword would have been held with both hands. Against unarmored combatants the longsword was held with both hands on the grip, while against armored combatants the longsword was held with one hand in the middle of the blade for precise control. The goal in armored longsword combat primarily focused on either attacking weak

points in the opponent's armor with the point of the sword, or using blunt attacks with the handle. The sword could also be held with both hands on the blade, turning the handle into an axe-like weapon that could deliver devastating blunt attacks, as well as hook the opponent's legs in order to pull them off balance.

Overview of Medieval Daggers and Wrestling

The dagger acted as a universal weapon of self defense in the medieval era. It was carried by civilians but was equally important for knights in armored combat because of the dagger's ability to penetrate gaps in armor. In armored combat only the point of the dagger could be used, and this point was designed so that the dagger could pry plates apart as well as poke through the links in mail armor.

Another component of dagger combat was wrestling, which also featured in all forms of combat generally. Often in combat the opponents would be too close to execute any type of attack with a primary weapon, and in such a situation the combatants would default to wrestling. Though seemingly a brutal and random form of combat, wrestling actually focused on using disciplined techniques to knock the opponent to the ground and subsequently utilize disarms, joint locks, and joint breaks in order to defeat the opponent.

Overview of Medieval Staff Weapons

Though not as well documented as swords, medieval staff weapons served a variety of purposes. One of these weapons was the halberd. The halberd measured approximately 7 to 8 feet in length and featured both an axe blade, for chopping, and a spike, for piercing. The top of the halberd featured a point which was used for thrusts. In a typical battle situation foot soldiers would move into a wedge formation and attack cavalry, puncturing opponents' armor or hooking them off of their horses.

Another important staff weapon was the pollaxe. This weapon, commonly confused with the halberd, possessed a front edge (either a hammer or small cutting blade), a curved fluke opposite this edge to pull mounted combatants off their horses, and spikes at both ends of the weapon. Though the leading edge seems the most dangerous part of the weapon, most masters stressed use of the spiked ends for stabbing and thrusting attacks. Not often considered a battlefield weapon, the pollaxe gained popularity in singular combat, either in competition or the judicial duel.

Overview of Medieval Armored Combat

Armored combat featured a variety of tactics and weapons that were unconventional in civilian use. Armored combat usually had a completely different technique of fighting with weapons than unarmored. The armor would allow the person to get into close-range combat. This changed the ways someone in armor would fight with the longsword, for example. It focused primarily on attacking weaker points in armor and bringing an opponent to the ground. Once your opponent was on the ground, a dagger would be used to deal the death-blow. The introduction of armored combat into medieval Europe changed many combat techniques.

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Web Sites

AEMMA - Academy of European Medieval Martial Arts. (2002)

Retrieved April 16, 2005, from http://www.aemma.org/ Has substantial number of books and articles listed, but require membership for most access.

Association for Renaissance Martial Arts - Swords & Swordsmanship. (n.d.).

Retrieved April 16, 2005, from http://www.thearma.org/ A good source for finding more books on a particular topic.

Die Freifechter. (2002)

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HEMAC - Historical European Martial Arts Coalition. (2003).

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Higgins Armory Museum. (2005).

Retrieved April 16, 2005, from http://www.higgins.org/

Higgins Armory Sword Guild. (2005)

Retrieved April 16, 2005, from http://www.higginssword.org/

Introduction to the Poleaxe

http://www.scholasolis.com/Poleaxe/poleaxe_intro.htm.

This page has several pollaxe head configurations as well as a history of the pollaxe.

Jordan, John. A Partial, Possible Interpretation of the I.33 Manuscript. (n.d.). Retrieved April 16, 2005, from http://home.armourarchive.org/members/jester/I33/A_Possible_Interpretation.html

Maille

http://www.scholasolis.com/Poleaxe/parts.htm. This web page has a figure listing all of the parts of the pollaxe.

Pollaxe Training at AEMMA

http://www.aemma.org/training/pollaxe/pollaxeTraining.htm. This is mostly a promotional web site but does include a “brief history” section that holds some relative information.

The German Art of War. (n.d.). Retrieved April 16, 2005, from

http://www.alliancemartialarts.com/medieval.htm

West Dragonshire - Pollaxe

http://www.soton.ac.uk/~tpg/Pollaxe.htm. This web page offers many illustrations of the stances used in pollaxe combat as well as some history on the weapon. This information was taken and is interpreted from Le Jeu de la Hache.

The magnificant tradition of the Western Martial Arts Workshop .

http://www.aemma.org/misc/news/wma2002/summaryReport.html. There is a Quicktime file for the armored combat of pollaxe in tournaments.

Documentary Sources:

Barbash, Ilisa and Lucien Taylor *Cross-Cultural Filmmaking : A Handbook for Making Documentary and Ethnographic Films and Videos*. Berkley, CA: University of California Press, 1997.

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Bernard, Sheila C. *Documentary Storytelling for Video and Filmmakers*. Burlington, MA: Focal Press, 2003.

Nichols, Bill *Introduction to Documentary*. Bloomington, IN: Indiana University Press, 2001.

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Rabiger, Michael. *Directing the Documentary*. Burlington, MA: Focal Press, 2004.

Sadun, Erica. *Digital Video Essentials: Shoot, Transfer, Edit, Share.*. Hoboken, NJ:Sybex, 2003.

Visual Sources

The Flower of the Battle. Directed by Massimo Malipiero, Giuseppe Tissino, and Claudio Zorzenon. Produced by Massimo Malipiero. 48 min.. n.d.

Medieval Swordfighting In the style of Fiore dei Liberi of XIV Century. Directed by Massimo Malipiero. Produced by Giuseppe Tissino. 35 Minutea. Arte Video, n.d.

Appendix G: Plan of Work

Term A 2006: Primary Focus – Research and Write Paper + Research

videodocumentary filmmaking

NOTE: IF THERE IS A TECHNIQUE DEMONSTRATION AT THE ARMORY DURING A WEEK, THE GROUP SHOULD FILM THAT DEMONSTRATION

Week 1

Due this week: List of subtopics and themes for each week

Focus: Preparation of materials checking up on resources (availability, etc.), Brainstorming. Rough prospectus of work for the term due 48 hours before meeting (list of subtopics and themes for each week).

Group:

- *Read resources and begin note outline.*
- *Find Images online and collect them.*
- *Compile list of borrowable videodocumentary sources.*
- *Request Source materials through Inter-Library loan.*
- *Look at all materials and gain an understanding of which resources are more pertinent to my subject.*
- *Start reading through resources.*

- *Prepare questions for expert sources.*

Week 2

Due this week: Written context section

Focus: Researching/Writing context and artifacts.

Group:

- *Research context, both historical and social.*
- *Refine outline of paper and research*
- *Update bibliography and outline*
- *Write context section.*
- *Visit writing center with outline.*

Swords:

- *Research general context of sword weapons. .*

Dagger/wrestling:

- *Research the history of daggers as a whole.*
- *Research history of wrestling as a whole.*

Staffs:

- *Reading Anglo, Blair, Edge, Waldman.*
- *Research context, both historical and social.*

  Anglo 2000, Blair 1962, Forgeng Intros to Meyer and Mair.

Armored Combat:

- *"Who would have access to armor?"*

    - *The wealthy*
    - *-paid guards of a king*
- *"Where might someone use armor?"*
    - *ornamental suits*
    - *duels*
    - *skirmishes and battles*

Week 3

Due this week: Artifact section of paper.

Focus: Researching/Writing context and artifacts.

Group:

- *Research artifacts and continue context if not finished in previous week.*
- *Update outline to reflect new research.*
- *Update individual bibliography.*
- *Compile list of sources for next week*
- *Write artifact section.*

Swords:

- *Research contexts and weapons for longswords, falchion, sword and buckler*

Dagger/Wrestling:

- *Research daggers of the period including composition and use.*

Staffs:

- *Anglo 2000, Blair 1962, Forgeng Intros to Meyer and Mair.*

Armored Combat:

- *Site and document armor that would be good for the document*
- *Research and write about the differences in Armor*

Week 4

Due this week: Sources section of paper.

Focus: Researching/Writing Sources. Begin videodocumentary research.

Group:

- *Research authors and texts, research schools of technique.*
- *Watch at least two documentaries.*
- *Write Sources section*
- *Begin videodocumentary research.*
    - *Filming*
    - *Editing*
    - *Narration*
    - *Information Selection (choosing what researched information to put into a videodocumentary and the depth that the information will be covered).*

Swords:

- *Research the background and history of Johannes Liechtenauer, Paulus Hector Mair, and to a lesser extent, Hans Talhoffer (I know his works provide mostly pictures)*

Dagger/Wrestling:

- *Focus research onto experts Ott The Jew, Hans Talhoffer, and Paulus Hector Mair*

Staffs:

- *Reading Mair, Meyer, DiGrassi.*

Armored Combat:

- *Researching the authors, text's, and schools that pertain to armored combat techniques*

Week 5

Due this week: Technique section of paper

Focus: Researching/Writing Techniques. Videodocumentary research and standard operation procedures. Begin tentative map of website.

Group:

- *Determine parts of research that would be presented in videodocumentary.*
- *Research videodocumentary filmmaking (cont.)*
- *Update videodocumentary bibliography*
- *Write Technique section*

Sword:

- *Go through the main points of the forms for each sword*
- *Compare and contrast their effectiveness against each other*

Dagger/Wrestling:

- *Research techniques of wrestling and daggers as well as research their relation to the other forms covered in the paper including swords, armored combat, and polearms*

- *Organize Dagger techniques in a flow chart.*
- *Organize Wrestling techniques in a flow chart.*

Staffs:

- *Studying Mair (transl), Meyer (transl), Jeu de Hache (transl), Swetnam and Di Grassi to write about staff weapon techniques. Look at pictures from Talhoffer, Crakow.*

Armored Combat:

- *Find and show the differences of technique between armored and unarmored combat using:*
    - *Swords*
    - *Dagger/Wrestling*
    - *Polearms*

Week 6

Due this week: Videodocumentary outline.
Focus: Polish and compile sections, create transitions between sections, update bibliographies (if necessary) Write up videodocumentary outline and draft video SOPs.

Group:

- *Visit WPI writing center with previous week's work.*
- *Compile sections and refine transitions.*
    - *pulling together the different sections from all group members and compiling the document*
- *Proofread and edit.*

Swords:

- *Draft section of videodocumentary script that will cover swords.*

Wrestling/Dagger:

- *Draft section of videodocumentary script that will cover wrestling and daggers.*

Staffs:

- *Draft section of videodocumentary script that will cover staff weapons.*

Armored Combat:

- *Draft section of videodocumentary script that will cover armored combat techniques.*

Week 7

DUE THIS WEEK: Documentary script draft with initial list of visuals, demos and interviews, updated video SOPs, compiled research paper. Draft of release form.

Focus: Polish and compile total paper, create transitions between topics in paper (daggers, swords, polearms, armored), update bibliographies, documentary script work. • Establish standard operation procedure for filming of documentary

Group:

- *Finalize section of documentary script.*
- *Establish standard operation procedure for filming of documentary*

Term B 2006: Primary Focus – Filming, Editing, Producing documentary film

Week 10/26 – 11/2

- Work done the group:
    - Revise script
    - Figure out possible interviewees and email them
    - Prepare interview questions
    - compile a list of possible extras
    - Determine 2 narrators
    - watch “The longsword of Johannes Liechtenauer Part 1”
- Curtis: Compile still images to be used in documentary
- Imran: Email Bill Short and Mark Millman and try to set up a luch meeting to talk about the sword guild and the ways they can help with the documentary, Reserve the Higgins house for film shooting
- Mike: Finish compiling the different sections of the research document
- Ryan: Update plan of work, come up with a list of things we will need to borrow

Things to turn in on 10/31

- Revised script
- Interview Questions
- List of items needed

Week 11/2 – 11/9

- Work done by the group:
    - Start acquiring costumes and weapons needed
    - Hopefully scheduling interviews
    - Updating plan of work
- Curtis and Imran
    - 11/4 Hopefully meeting with Bill Short and Mark Millman to discus the documentary
        - discussing armored combat sequence
        - discussing items that might need borrowing

Week 11/9 – 11/16

- **11/11** Main filming day at the Higgins house
    - Filming students training with weapons

Weeks 11/16 – 11/21

- Record Narrator
- **11/18** Filming Armored combat sequence (if schedule works out)
- Look for music to be used in film

Weeks 11/27 – 11/30

- Figuring out what else need to be filmed or reshot
- Start editing processes
- Acquire/get licensing(if needed) for music to be used in the film

Weeks 11/30 – 12/7

- Reshooting any piece that need it
- Editing video
- Adding still images
- Adding transitions
- Adding interviews
- Queuing up narrators
- Designing intro image and credits

Weeks 12/7 – 12/14

- Finish editing film
- Make sure Research document is all pulled together and revised.

Term C 2007: Primary Focus – Editing and Website Construction

Week 1 – Define tasks needed for editing and narration

- *Temporary narrator audio track recorded(Mike)*
- *Integrate still images into video timeline(images from Curtis)*

- *Project write-out*
- *Ready permission lists(Curtis)*

Week 2 – More Website Content and Editing

- *Film Interview…again*
- *Rough copy to director of education*

Week 3 – More editing, bios, approval

- *Write recommendations to future IQP groups*
- *Write short bios of authors involved*
- *Draft project conclusion*
- *Add in master context to wiki*
- *Write intro and credits for documentary*

Week 4 – Abstract, More Website updating.

- 1/27 ARMORED COMBAT FILM DATE
- *Add in Context/artifact sections to Wiki*
- *Edit and add Armored combat footage onto the end of documentary*
- *Revise video based on Director of Education's recommendations*
- *Submit electronic draft of full project report*

Week 5 – Final Draft, Website updating

- *Make final corrections to full report.*
- *Submit full video documentary*

- *Add in Technique sections to wiki*

Week 6 –. Finalization

- *Make minor changes to video documentary*
- *Get report printed and bound from bindry*
- *Full Wiki site checked over*

Week 7 – Checklist, turn in CD-R's/DVD-R's, Three copies of the project.

- All project materials to be submitted on CD-rom/DVD.

Due by the last day of classes:

- One CDR form from each participant, with personal information and abstract filled in.
- 3 bound hard copies of the project report for the whole team (1 in color).
- 2 cd-roms containing an electronic version of the project report (MS Word and pdf versions), project proposal (MS Word only), and any electronic material created by the team (e.g. photographs, website).