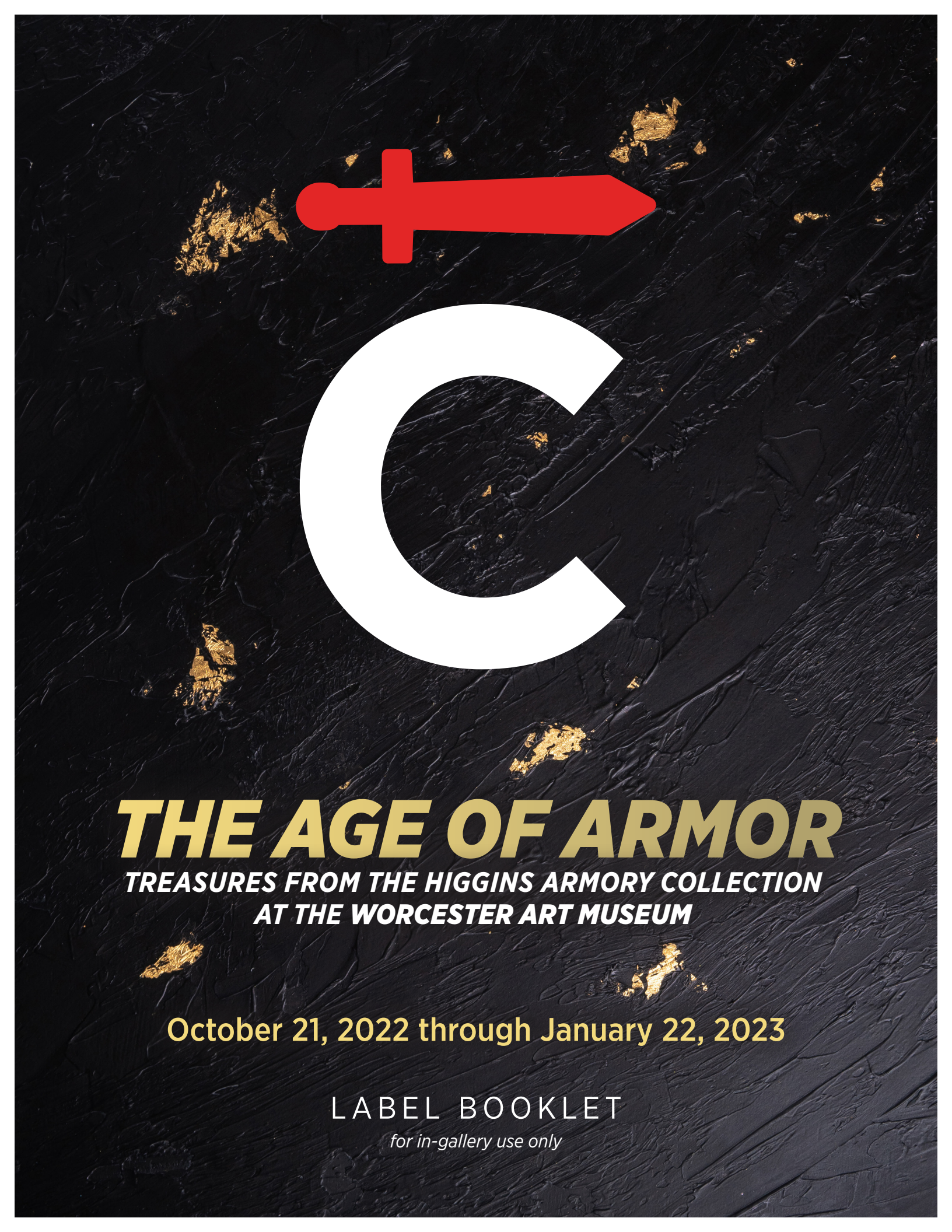

THE AGE OF ARMOR

TREASURES FROM THE HIGGINS ARMORY COLLECTION AT THE WORCESTER ART MUSEUM

October 21, 2022 through January 22, 2023

LABEL BOOKLET

for in-gallery use only

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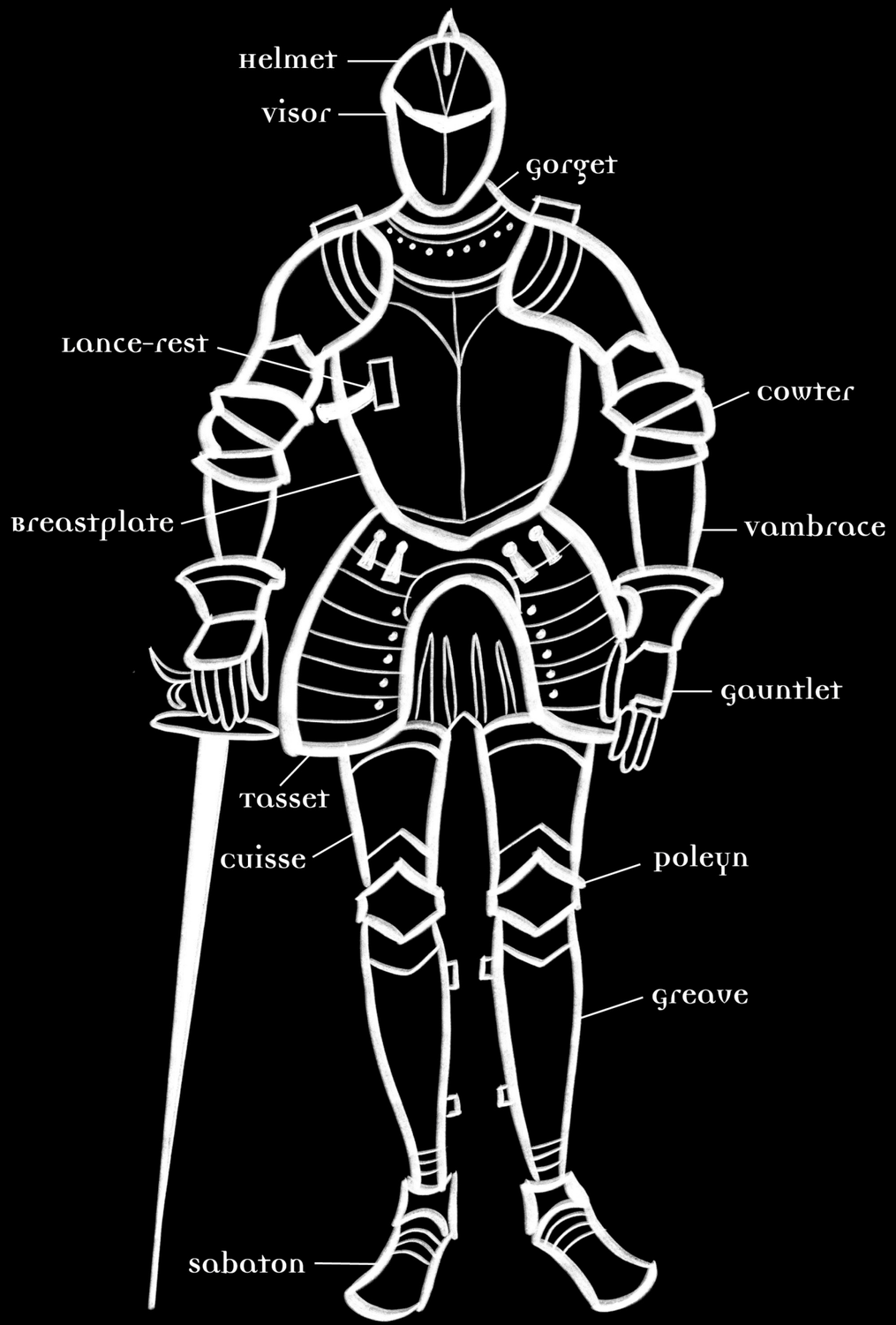
The image of the knight in shining armor is familiar to us from fairy tales, films, and computer games, but what was the reality behind the myth?

Armor is as old as human civilization. It has taken many forms and served many purposes. It had an obvious practical function in an age when warfare was common and fighting was hand-to-hand. But it has always had a cultural role as well, symbolizing personal identity, social prestige, and the values of a heroic past.

The classic knightly suit of plate armor was only used in Europe, and only for about 300 years, from the mid-1300s to the mid-1600s—a very short time in the span of human history. In this exhibition containing nearly 100 objects from the Higgins Armory Collection at Worcester Art Museum, you will learn how armor came into being, how it changed over time, how it was made and used, how it disappeared, and how it has left enduring traces in our cultural memory.



GLOSSARY

BREECH-LOADING GUN
A firearm designed to be loaded from the back (breech), rather than from the front (muzzle).

CARABINIER
A type of mounted soldier, wearing a helmet and breastplate and armed with a sword and a short firearm called a caribne.

CUIRASS
A mounted soldier wearing heavy armor, typically armed with a sword and a pair of pistols.

FIELD ARMOR
Armor made for battlefield use, as opposed to tournament armor.

FOOT TOURNEY
A form of tournament combat fought on foot.

GARNITURE
A suit of armor with exchange pieces that can be traded in and out to configure it for different uses, such as combat on horseback, combat on foot, or various forms of tournament combat.

GORGET
Armor for the neck, also serving to distribute the weight of the cuirass; later work in reduced form as a badge of rank.

HARQUEBUSIER
A type of mounted soldier, wearing light armor and armed with a sord and a short firearm called a harquebus.

LANCE-REST
A hook that attaches to the breastplate near the right armpit, serving to help the armored horseman control his spear (lance).

MATCHLOCK
A form of firearm ignition using a length of cord impregnated with saltpeter, called a math; when lit, the match burns slowly, allowing it to ignite the gunpowder.

“PEASECOD” BREASTPLATE
A breastplate shaped with a prominent swell at the belly.

PIKEMAN
A footsoldier wearing armor and armed with an extremely long spear called a pike.

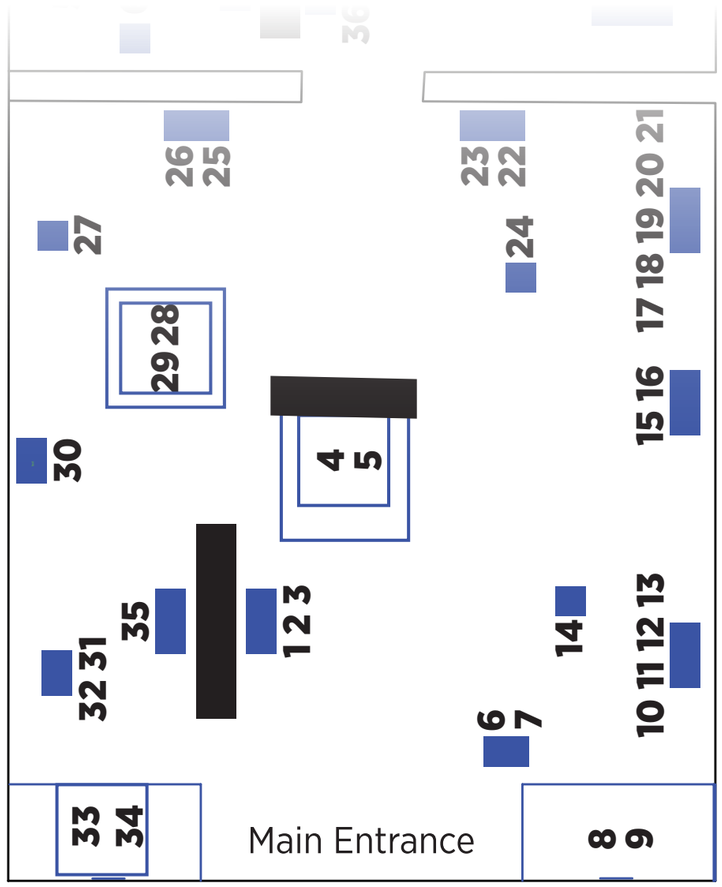
SAPPER
A military engineer involved in digging trenches and building fortifications for siege warfare.

TILT
In jousting, a barrier that separates the contestants from each other.

TRAINED BAND
A type of militia made up of citizens who were trained as soldiers for service when needed.

WHEEL-LOCK
A form of firearm ignition system using a roughened steel wheel rotating against a piece of pyrite to strike sparks and ignite the gunpowder.

EXHIBITION LAYOUT DETAIL
1–35



1

Sword, 1400–1200 BCE
Bronze, 1 lb. 13 oz.
Probably Central Europe
The John Woodman Higgins Armory Collection,
2014.351

This sword is short and stocky compared to iron and steel swords. Bronze is more brittle than iron, so it had to be made relatively thick and short to avoid breaking.

2

Corinthian helmet, about 600–550 BCE
Bronze, 3 lb. 10 oz.
Probably from Greek colonies in Southern France
The John Woodman Higgins Armory Collection,
2014.7

This simple yet elegant helmet dates to just before the Greek classical age. The bronze has turned green with time; it was originally a bright gold color. The holes around the edge served to attach a padded lining.

This helmet would have been worn by a hoplite, a heavily armed spearman fighting on foot in massed formations. In addition to the helmet, he would have torso armor of bronze or quilted cloth, as well as a large round shield.

3

Axe blade, 2000–1750 BCE
Bronze, 14 oz.
Egypt, Middle Kingdom
The John Woodman Higgins Armory Collection,
2014.611

The Egyptians were relatively slow to adopt bronze. This is a very early example, designed to be tied to a short wooden shaft in the manner of earlier Stone Age weapons.

4

Swept-hilt sword, about 1610
Steel with silver and gold inlay, 2 lb. 6 oz.
England; blade: Germany
The John Woodman Higgins Armory Collection,
2014.337

As displayed, this armor is for heavy cavalry, who would serve as shock troops in battle. The wearer gained maximum protection at the cost of extra weight and restricted vision. The “lance-rest” at the armpit helped him control his spear. By this time, lower-leg armor was rarely seen in battle, and was mostly for tournaments and ceremonies. The entire surface is richly inlaid with gold and silver in themes based on ancient Roman designs.

5

Pompeo della Cesa
(Italian, Milan, about 1537–1610)
Field Armor, about 1600
Steel, brass gold, silver, leather, fabric, 47 lb. 15 oz.
The John Woodman Higgins Armory Collection,
2014.112

6

Stirrup, 1100s–1200s
Iron, brass, 12 oz.
Perhaps England
The John Woodman Higgins Armory Collection,
2014.1008

Stirrups came to Europe around the year 700. They helped establish the mounted knight as the powerhouse who would dominate the medieval battlefield. Armored knights on horseback fought as shock troops to break apart enemy formations.

7

Winged spearhead, about 900–1000
Iron, 15 oz.
Frankish culture, central Europe
The John Woodman Higgins Armory Collection,
2014.674

This spearhead was mounted on a long wooden shaft. In the hands of a charging horseman, the spear could deliver a devastating attack that would disrupt all but the most disciplined footsoldiers. The horseman’s spear, known as a lance, would become the knight’s primary weapon.

8

Two-handed sword, about 1300
Steel with brass inlay, 3 lb. 14 oz.
Passau, Germany
The John Woodman Higgins Armory Collection,
2014.57

This sword reflects advances in metalworking during the Middle Ages. In previous centuries, swords had to be shorter to prevent breakage. By the 1200s, metalworkers were able to produce swords long enough for two-handed use. These metalworking skills would eventually make steel plate armor possible.

9

Mail coat, about 1500, modified in the 1800s
Iron, brass, leather fragments, 17 lb. 10 oz.
Probably Nuremberg, Germany, with Ottoman empire and Sudanic African modifications
The John Woodman Higgins Armory Collection,
2014.861

Very little medieval armor survives today. This example was made as a hip-length mail shirt at the end of the Middle Ages. It was later exported to the Middle East as "military surplus." It appears to have ended its working life in northern Africa in the late 1800s, where it was lengthened to protect the legs. This style, slit up to the groin so it could be worn on horseback, is actually very similar to that worn by medieval knights before plate armor.

10

Poleyn for the right knee, about 1400–20
Steel, 17 oz.
Probably Italy
The John Woodman Higgins Armory Collection,
2014.909

The knees were among the first parts of a knight's body to be protected with plate armor. Rivets at the corners of each plate attach it to the next plate, allowing the plates to flex. This poleyn once had straps and buckles for securing it to the leg. The leather components of armor rarely survive.

The back of the knee could not be covered with plate and remain flexible, so the side-wing helped protect this area.

11

Ulrich Wildisen Swiss
Cranequin (crossbow winder), about 1550
Steel, iron, brass, copper inlay, bone or horn, walnut wood, 4 lb. 1 oz.
The John Woodman Higgins Armory Collection,
2014.581

Body armor was ultimately made obsolete by gunpowder, but already in the Middle Ages it faced a serious threat from crossbows. Like firearms, crossbows were simple "point-and-shoot" weapons that could be used by soldiers with very little training. Mechanical devices like the cranequin were used to draw the crossbow, allowing it to deliver more power than a normal bow. The bolts have stout heads to help them pierce armor.

12

Crossbow bolts, early 1500s
Steel, wood, traces of leather
Each about 2.5 oz.
Probably Germany
The John Woodman Higgins Armory Collection,
2014.686.1-6

13

Quiver for crossbow bolts, late 1400s–early 1500s
Leather, animal pelt, wood, glue, 1 lb. 4 oz.
Austria
The John Woodman Higgins Armory Collection,
2014.622

14

Basinet helm with aventail (mail hood) and "dog-faced" visor,
about 1360–70
Steel, brass; modern leather, cord and restorations, 6 lb. 2 oz.
Probably Germany
The John Woodman Higgins Armory Collection,
2014.842.1

This helmet is typical of the style worn by knights from the late 1300s to the early 1400s. It has been heavily restored. The visor belonged to a different helmet, and the mail hood that protects the neck was made from an unrelated (but genuine) mail element. Nonetheless, the piece remains a rare survival of an important armor type. The so-called "dog-faced" or "pig-faced" visor deflected enemy weapons, but also added to the wearer's inhuman and threatening appearance.

15

Breastplate, about 1500–10
Steel, 5 lb. 5 oz.
Perhaps Italy
The John Woodman Higgins Armory Collection,
2014.760

Southern Germany and northern Italy were the two main centers for armormaking. The angular lines and ribbed decoration on the more elaborate breastplate are typical of the "Gothic" style popular in German armor in the late 1400s. Its rounded profile and rippling at the arms imitate the look of a man's civilian jacket of the period. It was made in Italy for the German market, ending up in the armory of the counts of Churburg in German-speaking South Tyrol.

The plain breastplate exemplifies the restrained sculptural style favored by Italian armorers.

16

Master "IA" Italian
Infantry breastplate "in the German style", about 1480
Steel, 6 lb. 4 oz.
The John Woodman Higgins Armory Collection,
2014.50

17

Sabaton for the left foot, about 1490
Steel, 9 oz.
Germany
The John Woodman Higgins Armory Collection,
2014.1153.7

Plate armor could be shaped in a multitude of ways, and the design of armor came to be a matter of fashion. Armor often mimicked clothing, like the pointed sabaton, which echoed the shape of a medieval shoe.

18

Pauldron for the right shoulder, about 1490
Steel, leather, 2 lb. 7 oz.
Possibly Innsbruck or Mühlau, Austria
The John Woodman Higgins Armory Collection,
2014.1146.4

Armor was worn over a padded jacket that provided some cushioning. The jacket also served for attaching armor to the knight's body, using laces similar to modern shoelaces. Paired holes on these armor elements served for lacing them in place. Military dress uniforms today feature "aiguillettes," or shoulder-braids, that actually derive from these laces.

The pauldron was laced to the shoulder of the knight's jacket so it could flex upward when he lifted his arm. The side facing you is the back: the broad sweep across the shoulder blade prevented a gap in the armor when the knight lifted his arm.

19

Mail sleeve, probably early 1500s
Iron, brass, 3 lb. 10 oz.
Western Europe
The John Woodman Higgins Armory Collection,
2014.858.2

Plate armor provided poor protection inside joints like the armpit and elbow, so the knight wore mail underneath to protect the gaps, like the mail sleeve here.

20

Cowter for the left elbow, 1490–1500
Steel, 6 oz.
Probably Spain
The John Woodman Higgins Armory Collection,
2014.808

21

Cuisse for the left leg, 1450–90
Steel, Iron, leather; modern restorations, 3 lb. 4 oz.
Milan, Italy
The John Woodman Higgins Armory Collection,
2014.842.5

22

Broadsword, about 1400–50
Steel with traces of organic materials from grip and scabbard, 3 lb. 8 oz.
Western Europe
The John Woodman Higgins Armory Collection,
2014.56

23

“Rondel” dagger, about 1400–50
Steel, copper alloy, bone, traces of gilding, 11.1 oz
Nuremberg, Germany
Higgins Collection Acquisition Fund, funds by deaccession from the John Woodman Higgins Armory Collection, and the Sarah C. Garver Fund
2018.3

In addition to his lance, the knight carried a sword as an all-purpose sidearm. He also carried a dagger as a weapon of last resort. The diamond-shaped cross-section on these weapons was designed to penetrate the gaps in a suit of armor and break open the mail armor underneath.

The sword comes from an important cache excavated from the River Dordogne in France. It was lost in 1453 by the retreating English forces after Castillon, the final battle of the Hundred Years’ War. The English lost the battle after a failed attack in the face of French cannons—a sign of things to come.

24

Sallet, late 1400s
Steel, 2 lb. 8 oz.
Italy, perhaps Milan
The John Woodman Higgins Armory Collection, 2014.1077

By the late Middle Ages, plate armor was becoming increasingly common on the battlefield. This light helmet was worn by an ordinary footsoldier. Heavier versions, with added protection for the face and throat, were worn by knights.

25

Breastplate, about 1510–15, with later etching
Steel, 7 lb. 2 oz.
Northern Italy, probably Milan
The John Woodman Higgins Armory Collection, 2014.806.3

26

Cowter for the left elbow, about 1530–40
Steel, with etching and blackening, 2 lb. 8 oz.
Southern Germany
The John Woodman Higgins Armory Collection, 2014.1138.5

27

Shafron (horse’s head armor), about 1520
Steel, 3 lb. 2 oz.
Southern Germany
The John Woodman Higgins Armory Collection, 2014.16

These elements embody the masterful metalwork of the Maximilian style. The rippled surface of the breastplate is gathered at the waist to imitate the pleated look of a man’s civilian jacket. The cowter combines rippled, plain and etched surfaces with complex contours in a tour-de-force of craftsmanship. The Maximilian style was even incorporated into horse armor.

28

“Maximilian” field armor, about 1525–30
Steel; modern leather and restorations, 64 lb. 14 oz.
Southern Germany
The John Woodman Higgins Armory Collection,
2014.111

29

Warhammer for a horseman, about 1525–30
Steel with etching and blackening, 2 lb. 12 oz.
Southern Germany, probably Augsburg
The John Woodman Higgins Armory Collection,
2014.469

The fully armored knight astride his warhorse was part tank, part fashionista, part action-hero. His suit of armor was carefully crafted to provide maximum protection while moving naturally with the body to allow him to use his skills to the utmost.

But the knight was also a courtier whose armor was an integral part of his stylish wardrobe. The rounded shaping and rippled surface of this armor have some protective qualities, but more importantly they imitate the pleated fabric of a gentleman’s civilian clothing. The smooth armor on the lower leg imitates his silk stockings, and the broad-toed sabatons echo the shape of fashionable men’s shoes.

30

Target (shield) with breech-loading gun, about 1540
Wood, steel, tinned iron, brass, fabric, paint; modern restorations,
9 lb. 10 oz.
Perhaps Italy
The John Woodman Higgins Armory Collection,
2014.768

The Renaissance brought intensified interest in technological innovation. Henry VIII of England, always a fan of the latest military technology, purchased a large number of these gun-shields. They would have been impressive equipment for his personal guards, but they were never successful as military gear. The design required that the gun be loaded from the back, or breech. Breech-loading weapons didn’t become common until the late 1800s, and for good reasons. Renaissance technology couldn’t create a perfect seal when closing up the breech, and an imperfect seal could make the weapon blow backwards instead forwards.

31

Morion-burgonet, dated 1585
Steel with etching, fire-gilding and blackening, brass, 3 lb. 10 oz.
Southern Germany, probably Augsburg
The John Woodman Higgins Armory Collection,
2014.26

32

Cabasset, about 1590
Steel with etching, gilding and blackening, brass, fabric, leather, gold thread, 3 lb. 7 oz.
Milan, Italy
The John Woodman Higgins Armory Collection, 2014.1075

Different helmet types were used for different purposes. Both of these helmets leave the face open, which was typical for footsoldiers.

The morion-burgonet was probably worn by a bodyguard to a noble family. Its stylized curves are based on Renaissance imaginings of ancient Roman helmets. The date 1585 can be seen on a small, curving band at the front end of the comb.

The cabasset retains its original cheekpieces and fabric lining. Helmets were always padded, but these soft components rarely survive.

33

Field armor from a garniture, perhaps for Siegmund Friedrich, Freiherr von Herberstein (d. 1621), about 1580
Steel with etching, gilding and bluing, brass; modern leather and restorations, 34 lb. 2 oz.
Southern Germany, probably Augsburg
The John Woodman Higgins Armory Collection, 2014.660

34

Partisan, late 1500s–early 1600s
Steel, brass, wood, 4 lb. 12 oz.
Italy
The John Woodman Higgins Armory Collection, 2014.198

A garniture was a suit of armor with “pieces of exchange” that could be traded in and out to adapt it for different uses. As displayed, this suit might be worn by an officer of infantry. A similar configuration might be used for a light cavalryman, who would serve for scouting or skirmishing.

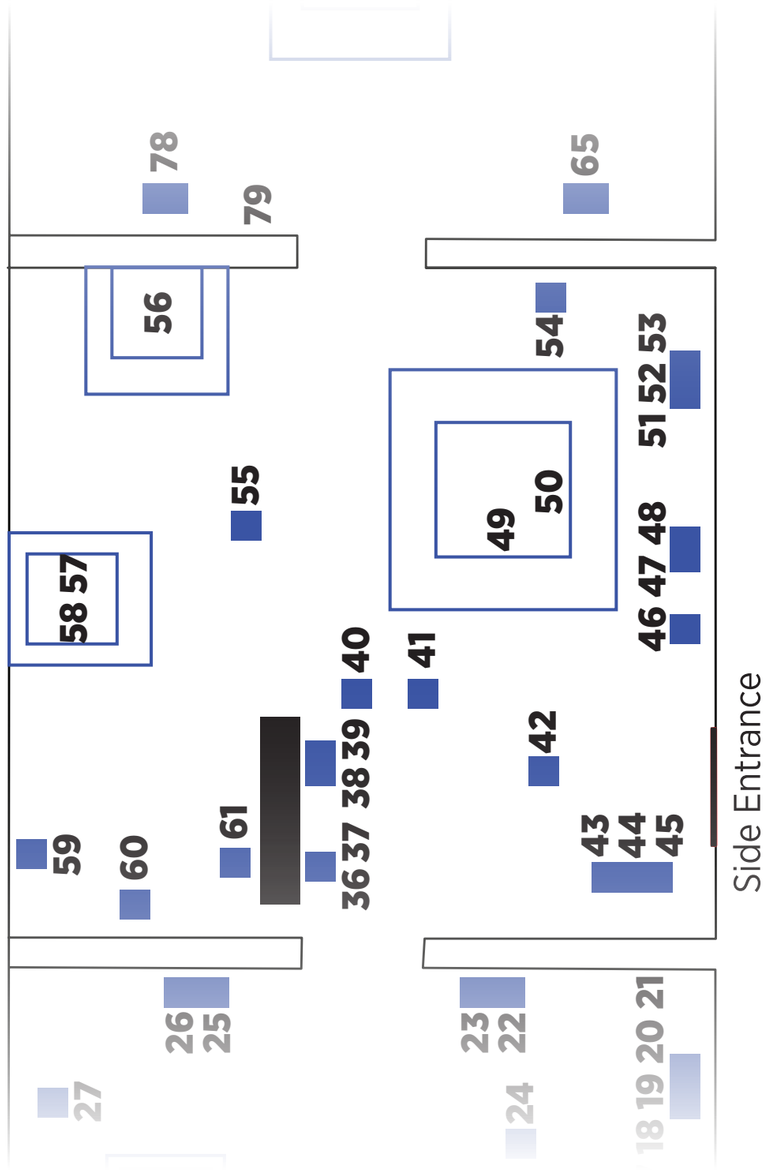
35

Wolfgang Ständtler German
Swept-hilt sword for the Munich town guard, about 1600
Blue steel, iron wire, wood, 3 lb. 3 oz.
The John Woodman Higgins Armory Collection, 2014.52

During the late Middle Ages, swordsmen developed the trick of slipping their index finger over the crossbar to give them better control over the blade. Since this exposed the finger to injury, sword makers began to add protective loops of iron at the base of the blade. Over the course of the 1500s, additional protective bars were added, ultimately producing the sculptural shapes of the swept hilt.

The swept hilt and sharply tapered point on this sword are typical for a civilian rapier, but the wide base of the blade is more characteristic of a military broadsword. This sword is a crossbreed between the two types. It was well suited to the needs of a town guard, whose duties ranged from breaking up street fights to defending the city in time of war.

EXHIBITION LAYOUT DETAIL
36–61



36

Probably Michel Witz the Younger
(Austrian, Innsbruck, 1510–1588)
Breastplate for heavy cavalry, 1530s
Steel, 13 lb.
The John Woodman Higgins Armory Collection,
2014.1166.3

This breastplate is a masterpiece of the armorer's art. The turned edges at the neck and arms are designed to deflect the tips of incoming weapons, but here they are made both assertively robust and gracefully stylish. The achievement is all the more remarkable considering that the armorer started with a flat plate of exceptionally thick steel.

The shield-mark stamped at the shoulders represents the red-and-white emblem of the Austrian imperial family, which still appears today as the Austrian national flag. This breastplate may actually have been made for the Emperor Ferdinand I before he came to the throne.

37

Rafe Boulter and Sylvester Keene
(English, active about 1638–48)
Breastplate, 1640–45
Steel, 8 lb. 11 oz.
The John Woodman Higgins Armory Collection,
2014.745

This cavalryman's breastplate bears several stamps near its neckline. The crowned A of the Armourers' Company of London can be seen on the left. To the right is stamped "BK", for Boulter and Keene, the makers of the armor. Slightly further to the right is the inventory number "I58." Pieces like this were mass-produced by contractors like Boulter and Keene for the opposing sides in the English Civil War (1642–46).

38

Triple-combed burgonet, about 1550–55
Steel; restored strap and buckle, 4 lb. 10 oz.
Southern Germany, perhaps Augsburg
The John Woodman Higgins Armory Collection,
2014.1072

This helmet was made for the personal guards of some important nobleman. Raising a flat sheet of steel into this triple-comb shape was a tour-de-force by a master armorer. The pairs of holes in the metal are for laces to attach a decorative fabric cover.

39

Close helmet for field and tournament, about 1550–70
Steel with etching traces of gilding, 8 lb.
Milan, Italy
The John Woodman Higgins Armory Collection,
2014.1124

This cavalry helmet was once part of a fine suit of armor. It is made of much thicker steel than the nearby morion. The ridged comb down the center improves the helmet's strength, but also serves as a decorative feature. Similarly, the sharp prow helps to deflect incoming spearpoints while adding to the sculptural effect. The narrow eyeslot is also typical of helmets designed for use with a lance. The narrow field of vision limits the risk of a spearpoint penetrating the eyeslot. The limited vision was a relatively minor inconvenience in lance-combat, which required focused concentration on a single target.

40

Anvil, 1400s–1500s
Wrought Iron, 36 lb. 10 oz.
Italy
The John Woodman Higgins Armory Collection,
2014.1031

This well-used anvil sat on a wooden block to help absorb the shock of the hammer. The hole on the upper face accommodated a "stake," a steel post which could take a variety of forms to help the armorer create the shapes he needed.

41

Hans Hörburger the Elder
(Austrian, Innsbruck, active 1556–1586)
Comb morion, late 1500s
Steel, brass, leather fragments, 2 lb. 10 oz.
The John Woodman Higgins Armory Collection,
2014.1094

This infantry helmet was made by a specialist in munitions-grade armor. It is made of relatively thin steel, and has been left rough from the hammer. Finer armors would be beaten with a series of successively lighter hammers to remove these marks. Nonetheless, the complex shape of this helmet has been formed from a single sheet of metal, a testament to the remarkable skill of the armorer. His mark "HH" can be seen on the brim.

42

Close-helmet for the foot tourney, about 1590
Steel (formerly blued) with etching and gilding, brass, 11 lb. 15 oz.
Augsburg, Germany
The John Woodman Higgins Armory Collection,
2014.1113

This outstanding helmet was designed for tournament combat “at the barriers,” in which the opponents stood on opposite sides of a wooden partition. It is unusually heavy, made of especially thick steel for maximum protection. The elaborate gilt decoration is found only on the finest tournament armors.

43

Infantry breastplate, about 1580
Fire-blued steel, 5 lb. 14 oz.
Probably Milan, Italy
The John Woodman Higgins Armory Collection,
2014.755.1

Protecting armor from rust was a constant challenge. Surfaces were sometimes treated to offer a degree of protection. Fire-bluing involved coating the metal with oil then applying heat. This created a stable oxide layer on the surface that resisted rust, while also adding a pleasing color to the metal. Bluing can easily be removed by polishing, so original bluing rarely survives—many bright armors in museums today were once fire-blued.

44

Anton Peffenhauser
(German, Augsburg, 1525–1603)
Etched by Jörg T. Sorg the Younger
(German, Augsburg, 1517–1603)
Breastplate from the field armor of Stefano Doria, 1551
Steel with etching and gilding, brass, leather, 13 lb. 5 oz.
The John Woodman Higgins Armory Collection,
2014.1155.3, 7, 8

This breastplate incorporates multiple decorative techniques. The deeper decorative patterns have been hammered into the metal. The shallower patterns were executed by etching. The decoration has been highlighted by gilding and blackening.

Peffenhauser was one of the leading armorers in Augsburg, Germany’s main center for high-end armor. His collaborator, Sorg, came from a family of armorers, but grew up to become an armor etcher. Sorg kept an illustrated notebook of the armors he worked on, which allows us to identify the date, maker, and owner of this piece.

45

“Peasecod” breastplate, 1585–90
Etched steel with traces of blackening and gilding, brass, 4 lb. 8 oz.
Milan, Italy
The John Woodman Higgins Armory Collection,
2014.1133.2.1

The etched decoration on this breastplate is typical of the style produced in mass quantities in northern Italy in the late Renaissance. The etching is based on motifs from classical Rome. The vertical bands are filled with “trophies”—representations of captured treasures and military equipment. These expressed the wearer’s connection to the legacy of ancient Rome, as well as his desire to be seen as victorious in battle.

The exaggerated belly deflected incoming weapons as well as securing the belt that held the armor in place. It was also a fashion statement, paralleled in the silhouette of men’s jackets of the time. The trophy bands and ropelike edges also echo the decorative trim that adorned men’s civilian clothing.

46

Shaffron (horse’s head armor), about 1560
Steel with etching and gilding, brass, leather, 3 lb. 14 oz.
Augsburg, Germany
The John Woodman Higgins Armory Collection,
2014.10.1.1

A well-trained warhorse was expensive, and a knight’s horse often wore at least a head protector, and sometimes additional armor for the neck and body. By the 1500s, it had become fashionable for horses and riders to wear matching armors. This etched and gilded shaffron is decorated in the characteristic strapwork style of the German city of Augsburg, one of the most important centers for high-end armormaking.

47

“Mitten” gauntlet, 1540–60
Steel, 1 lb. 6 oz.
Germany or Austria
The John Woodman Higgins Armory Collection,
2014.573

Like modern handwear, gauntlets came in two versions—glove and mitten. Glove-style gauntlets allowed better mobility for the hands than mitten gauntlets, but offered less protection. Gauntlets originally had leather gloves stitched inside, but the leather rarely survives.

48

Right vambrace (arm-guard) for a child, about 1625–50
Steel with traces of leather, 3 lb.
Germany, perhaps Augsburg
The John Woodman Higgins Armory Collection,
2014.805

Knighthood began at birth. A boy had to have parents with the status and wealth required of a knight. He would learn to ride almost as soon as he had learned to walk. By the time he reached his teens he would already have started training with weapons. But it would take several more years before he had the strength to fight in armor. Child armor like this example was purely for ceremony, like the tuxedos worn by children at weddings today.

49

Workshops of Wolf and Peter von Speyer or Wolf Peppinghorn German
Rennzeug (armor for the “joust of war”), about 1590–1600
Steel, iron, leather, black paint, textile, horsehair stuffing, 93 lb. 1 oz.
The John Woodman Higgins Armory Collection,
2014.1154

This jousting armor evolved from battlefield armor of the late Middle Ages. The jouster tucked his lance under his right armpit, using the adjoining triangular “lance-rest” to help control it. The shield bolted to his left side served as a target for the opponent. The entire suit is highly protective, weighing nearly twice as much as a battlefield armor.

This armor was made for the Saxon court at Dresden, and was still being used in the early 1700s. The stabilizing bracket at the back of the helmet was added at a time when jousters were much less sure of their skills.

50

Armor for the Plankengestech (“joust over the tilt”), 1550–75
Steel, iron, brass; modern leather and restorations, 64 lb. 6 oz.
Northern Germany
The John Woodman Higgins Armory Collection,
2014.79.1

This armor is an Italian-influenced version of the black jousting armor nearby. The “tilt” was a wooden barrier between the jousters—it actually made the joust more intense by allowing the jousters to run along it at “full-tilt,” without worrying about a collision. The trelliswork on the shield helped catch the tip of the opponent’s lance, increasing the chances of a dramatic shatter to please the fans. The right hand was protected by a vamplate similar to the one on display nearby.

51

Vamplate (hand-guard for a lance), 1575–1600
Steel, brass, leather, 1 lb. 9 oz.
Probably Germany
The John Woodman Higgins Armory Collection,
2014.969

A jouster’s lance was often fitted with a vamplate to protect the hand. It added to the weight of the lance, but this was not a problem in the controlled circumstances of the tournament, where the jouster could rest between rounds. The paired holes secured a padded lining to provide cushioning from the impact. Traces of paint rubbed off from brightly colored lances can be seen inside the mouth.

52

Reinforce for the left shoulder, probably late 1400s
Steel, 3 lb. 13 oz.
Possibly Germany
The John Woodman Higgins Armory Collection,
2014.1138.8

Some forms of jousting used normal battlefield armor, with a few reinforcing pieces at critical points. This reinforce was secured to a peg on the shoulder-armor. Jousters passed left side to left side, so only the left required this extra protection.

53

Attributed to Kolman Helmschmid
(German, Augsburg, 1471–1532)
Etching perhaps by Hans Burgkmair the Elder
(German, 1473–1531)
After designs by Daniel Hopfer
(German, about 1470–1536)
Reinforcing breastplate and tasset for the joust, 1520–25
Steel with etching and blackening, brass; modern leather, 9 lb.
The John Woodman Higgins Armory Collection,
2014.1138.3, 2014.1138

This is part of a jousting armor used for the Welschgestech über das Dill ("Italian joust over the barrier"). Jousting came in a number of variants: this version involved a lance with a three-pronged tip, the objective being to splinter the lance on the opponent's shield. Jousting armors were heavier and less mobile than armor for war, and often included additional protective elements like this one. This reinforce was bolted over the wearer's breastplate: a hole for the bolt can be seen near the neckline. Like other jousting reinforces, this piece is asymmetric, orienting its protection toward the jouster's left.

54

Close helmet for foot combat at the barriers, about 1600
Steel, brass, 9 lb. 15 oz.
Italy, probably Milan
The John Woodman Higgins Armory Collection,
2014.1156.1

This helmet was for a form of tournament combat in which the opponents fought with blunt swords or spears from opposite sides of a wooden partition. With such a set-up, the head was naturally a prime target. This helmet is made of especially thick steel, and the marks of many sword-blows can be seen on the left side, where right-handed attacks would tend to hit.

55

Master "MR" German
Comb morion for the Guard of the Elector of Saxony, about 1590
Blackened steel with etching and gilding, brass, textile, leather, 4 lb.
The John Woodman Higgins Armory Collection,
2014.48

The electors of Saxony were powerful German princes who maintained a personal guard of two hundred horsemen and footsoldiers. These troops wore matching armor and clothing, black with gold decoration, imitating the colors of the Saxon coat-of-arms. For centuries afterwards, the guards' equipment was displayed in a special gallery of the electoral armory in Dresden, the Saxon capital. In the 1800s, much of it was given away or sold—numerous helmets like this one were sent to the Dresden opera house for use as props.

56

Ceremonial half-armor, about 1580, with modifications about 1600–10
Steel with embossing and traces of gilding, leather, 19 lb. 10 oz.
France
The John Woodman Higgins Armory Collection,
2014.70

This armor was worn only for ceremonial purposes. It probably never included a helmet, being designed to go with a fashionable hat. It was made around 1580, but altered in the early 1600s to keep up with fashion trends. The decorations center on the union of Love and War, symbolized by the romance between the Roman gods Venus and Mars.

57

Two-handed sword, about 1600
Steel; modern wood, leather and textiles, 7 lb. 15 oz.
Germany
The John Woodman Higgins Armory Collection,
2014.126

This sword represents the upper size limit for battlefield swords, but it was probably never swung in anger. Two-handed swords were at their height around 1500. By the time this one was made, they served chiefly for ceremonial purposes, carried by the entourage of political and military leaders.

58

Half-armor for a member of the Papal Guard, 1570–90
Steel with engraving, gilding and bluing, brass; modern leather and velvet, 17 lb. 2 oz.
Northern Italy, perhaps Brescia
The John Woodman Higgins Armory Collection,
2014.1137

This armor belongs to a group of similar suits, repurposed from combat armor, and decorated for use by the Papal Guard. None of the surviving examples have helmets—they were probably meant to be worn with a stylish hat.

59

Nagasone Tojiro Mitsumasa Japanese
Helmet in the form of a sea conch shell, dated 1618
Iron, 3 lb. 13 oz.
Germany
The John Woodman Higgins Armory Collection,
2014.89

Military leaders in late feudal Japan wore flamboyant “extraordinary helmets” (kawari-kabuto) to distinguish themselves amidst uniformly armored footsoldiers and brilliantly attired samurai. This masterpiece of metalwork must have belonged to one of the most important men in the country at the time of the shogun Tokugawa Ieyasu. It was so admired that several derivative copies were made. The helmet is sculpted like a sea conch shell with a brim textured like ray-skin. It originally had a neck guard of lacquered iron plates laced together with brightly colored silk.

60

Helmet, 1800s
Russeted steel with gilding, 5 lb. 9 oz.
Sudan, northeast Africa
The John Woodman Higgins Armory Collection,
2014.91

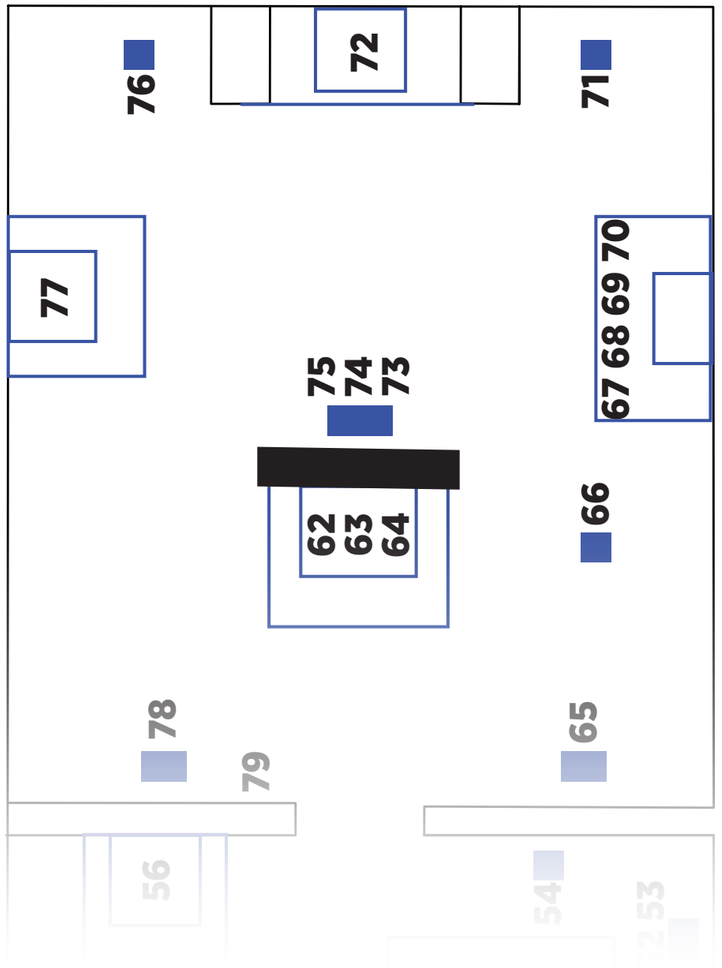
This helmet represents an African version of a widespread Islamic style. Its pointed bowl and mail neck guard can be compared to the nearby Indian kulah khud, but the conical form and arrow-shaped noseguard are typically Sudanic. This is a particularly fine example that still retains much of its original gold-covered surface. It was evidently made for a high-ranking military leader, and may have seen service in the Sudanese uprising against the British in the late 1800s.

61

Kulah khud (helmet), 1600s, with later modifications
Steel, brass, silver, gold, 2 lb. 12 oz.
Northern India
The John Woodman Higgins Armory Collection,
2014.88

When the Mughals invaded India around 1500, they brought with them the artistic traditions of Persia, including arms and armor. The kulah khud is the most common type of Persian helmet, one of many variants of the widespread Islamic form with rounded skull, top spike, and mail neck-guard. But the embossed pattern on this helmet, reminiscent of the lotus flower, is typically Indian. The mail is exceptionally fine, composed of tiny riveted links. It is designed to drape in front of the eyes to shield them from the sun.

EXHIBITION LAYOUT DETAIL
62–79



62

Three-quarter armor for a cuirassier, 1620–25
Steel, brass; modern leather, 47 lb. 1 oz.
Augsburg, Germany
The John Woodman Higgins Armory Collection,
2014.1135

63

Wheel-lock holster pistol, about 1625–50
Steel, walnut wood, 2 lb. 6 oz.
Germany, perhaps Suhl
The John Woodman Higgins Armory Collection,
2014.376

By 1600, the traditional cavalryman armed with a lance was giving way to the cuirassier, so named for his torso armor ("cuirass"). The cuirassier carried a sword and a pair of pistols, and wore somewhat less armor than the heavy cavalry of earlier times.

The helmet on this armor, called a Zischägge, is based on a Turkish helmet called a chichak. Armor styles in central Europe were influenced by Turkish types in the 1600s, reflecting the importance of the Ottoman Empire in this region.

64

"Pappenheimer" sword, about 1630–40
Steel, wood, 3 lb. 8 oz.
Northern Europe, perhaps Netherlands
The John Woodman Higgins Armory Collection,
2014.348

65

Breastplate from a siege cuirass, 1590–1600,
Iron, brass, black paint, 24 lb. 10 oz.
Probably Germany or Austria
The John Woodman Higgins Armory Collection,
2014.4.1

As firearms improved, armor struggled to keep up. This extremely heavy breastplate was designed for siege use. The thick iron provided excellent protection against bullets in the trench warfare of a siege, but it was too heavy for a soldier marching around on a battlefield.

The broad, shallow indentation over the heart is probably a "proof mark." The manufacturer fired a musket at the breastplate to prove it could resist a bullet. The additional bullet marks on the surface show that this armor saved its owner's life more than once.

66

Sapper's helmet, 1600s
Iron, black paint, leather, 19 lb. 14 oz.
Switzerland
The John Woodman Higgins Armory Collection,
2014.1106

Although armor was going out of use in the 1600s for field combat, it continued to be used for siege operations, where mobility was less important. This heavy helmet was worn by a sapper, an engineer specializing in siege works. The dent is probably a proofmark, demonstrating that the iron was capable of resisting a musket-shot.

67

Half-armor for a pikeman, about 1625–45
Steel; modern leather, 16 lb. 4 oz.
England and the Netherlands
The John Woodman Higgins Armory Collection,
2014.1167, 2014.789

68

Halberd, about 1540
Steel, wood, 3 lb. 12 oz.
Italy
The John Woodman Higgins Armory Collection,
2014.137

This weapon was designed for use against armored horsemen. The long staff and spearpoint could keep a mounted enemy at a distance. The blade delivered a powerful chopping blow, and the spike in back was designed to pierce armor. The halberd was developed in the late Middle Ages by the Swiss, who used it to give their footsoldiers an advantage against armored knights.

69

Halberd, early 1600s
Steel, wood, 4 lb. 4 oz.
Perhaps England
The John Woodman Higgins Armory Collection,
2014.137

Pikemen carried long spears and fought on foot in porcupine formations to defend musketeers from attacking cavalry. Musketeers wore no armor, but pikemen wore head and torso armor, since their job was close combat.

By the end of the 1600s, muskets were being equipped with bayonets. The bayonet attached to the end of the musket, turning it into a short spear. Every musketeer was now his own pikeman, and armor largely vanished from the battlefield.

The halberd was originally developed as a weapon against knights. By the 1600s, it was largely a badge of office for a sergeant of infantry. The axe and beak on this example are no longer functional: only the thrusting tip was usable in combat.

70

Halberd of the “Trained Band”, dated 1678
Steel, wood (probably maple), 3 lb. 12 oz.
Colonial Massachusetts
The John Woodman Higgins Armory Collection,
2014.69

The halberd was invented in the late Middle Ages to help footsoldiers fight mounted knights. By the 1600s, it served more as a marker of rank than as a weapon. It was used this way in America as late as the Revolution. This example belonged to a sergeant in the Trained Band, the militia of citizen-soldiers maintained by every New England community.

71

Keyhole plate made from a breastplate, about 1555–60, later altered
Steel with etching and blackening, 2 lb. 14 oz.
Northern Italy, probably Milan
The John Woodman Higgins Armory Collection,
2014.682

“Reduce, reuse, recycle” was a familiar principle back in the days when it took a huge amount of effort to produce iron. When armor became obsolete, it might lie neglected in a nobleman’s armory, but it was more likely to be cut up for scrap. This object was once a highly decorated breastplate, but was later cut down and hammered flat to serve as a keyhole plate for a large door.

72

Pikeman’s armor with helmet for a harquebusier, later decorated for ceremonial use, about 1625–50, decorated in 1700s
Steel, paint; modern leather, 16 lb. 10 oz.
Netherlands
The John Woodman Higgins Armory Collection,
2014.1132

As armor lost its military value, stockpiles of old armor gathered dust in the armories of European kings and noblemen. Some of it was eventually refurbished for ceremonial use. This torso armor for a footsoldier and helmet for a cavalryman were probably once in the British Royal Armouries. They appear to have been pulled out of storage in the 1700s and decorated for some ceremonial occasion.

73

Officer’s gorget, 1770s
Silver, 3 oz.
Great Britain
The John Woodman Higgins Armory Collection,
2014.786

The gorget was a neck guard, worn under the torso armor to help distribute its weight. The body armor was worn over a jacket, which by the 1500s was typically made of leather.

After 1600, many soldiers stopped wearing torso armor, relying on their leather jacket for protection against sword cuts. But some officers continued to wear the gorget—just because it looked good. The once-plain gorget become a decorative adornment. Over time it grew smaller, but a reduced version was still worn as a badge of rank even during the American Revolution.

74

Gorget, 1590–1610
Steel, leather, 2 lb. 15 oz.
Germany
The John Woodman Higgins Armory Collection,
2014.788

75

Gorget for an officer of the city militia, late 1700s
Gilt brass, 7 oz.
Netherlands
The John Woodman Higgins Armory Collection,
2014.5

76

Worcester Pressed Steel
Prototype Experimental Helmet Model 2, 1917
Steel, 2 lb.
United States
The John Woodman Higgins Armory Collection,
2014.2

Armor came back into military use after 1900. Since America no longer had a tradition of armor design, military leaders looked to history to provide ideas. This experimental helmet was produced for the U.S. Department of War during World War I. The designer was Bashford Dean, curator of armor at the Metropolitan Museum of Art, who based his design on medieval models. To create and assess the prototype, Dean turned to Worcester steel industrialist John Woodman Higgins. The collaboration between these two men set Higgins on the path to building America's second-largest collection of armor.

77

Armor for a carabinier, 1863–65
Steel, brass, leather, horsehair, 20 lb. 6 oz.
France (Châtellerault arsenal, Alsace)
The John Woodman Higgins Armory Collection,
2014.90

Armor had lost its military importance by the late 1600s, but it never entirely vanished. In the 1800s, armor like this was still used in battle by heavy cavalry. Though derived from the armor of the medieval knight, this armor was redesigned to echo the styles of ancient Rome. As late as World War I, horsemen rode to the front wearing similar armor. It was quickly abandoned in the face of machine guns and trench warfare. Today, armor like this is reserved for a few elite military units in Europe, who wear it for ceremonial occasions.

78

Master "HW" German, active 1630–1680
Pair of wheel-lock holster pistols, about 1650
Steel, snakewood, bone or horn, gilt brass, and iron, 2 lb. 8 oz.
The John Woodman Higgins Armory Collection,
2014.433

By the 1600s, armored heavy cavalry were abandoning the lance. Instead, they kept a pair of pistols at the front of their saddle. They would ride close to their target to discharge their pistols, then circle around again to charge with swords drawn. This exceptionally decorative pair must have belonged to a wealthy horseman.

79

Matchlock musket, about 1600
Steel, walnut wood, 12 lb. 4 oz.
Probably Germany
The John Woodman Higgins Armory Collection,
2014.13

By 1600, powerful firearms like this musket dominated European battlefields, and were a real threat to armored soldiers. Musket shot could pierce most armor. However, the weapon was heavy. It was also awkward to use, since the gunpowder had to be ignited by a slow-burning "matchcord"—this was clamped into the curved arm on the side of the musket. By 1700, the matchlock had been replaced by the lighter, less cumbersome flintlock.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