

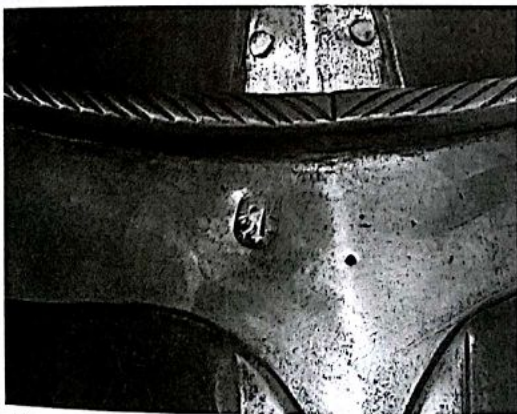
# What Do Armourers' Marks Mean?

by  
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Most students of armour might assume that by 'Armourers' Marks' I am referring to the personal marks used by armourers as signatures, punched into the outer surfaces of the principal plates of their armours to show who made them. In fact armours can carry a whole series of different marks and inscriptions on their inner and outer surfaces, both punched and filed, and they all have something different to tell us.

The principal benefit of a study of these marks is in ascertaining whether the constituent parts of an armour actually belong together. This may not be the case, even though the construction, surface decoration, and metallurgical structure of the different plates might suggest that they do, if certain marks upon the elements do not match up. However, there are also certain circumstances when the various marks on an armour, both internal and external, do not match, but the elements do in fact belong together. Leaving aside whether an armour is homogenous or not, these marks also have a lot to tell us about the history of the armour in question – not only who made it, but where and when it was made, how it was made, where it was stored, and even for whom it was made. Beyond these punched and filed marks, there were also inscriptions and symbols worked into the etched decoration of armour from the 16th Century onwards, but these are beyond the scope of this article.

Broadly speaking, armourers' marks can be divided into the following categories: Forging, Constructional, Batch, Signatures, Workshop, View, Arsenal, and Size.



2 UNIDENTIFIED NUREMBERG ARMOURER. Black and white breastplate, Nuremberg circa 1550-1555. Private collection. The neck of this breastplate is struck with two marks just below the turned edge at the neck. The one on the left is the Bildenschild, the View Mark of the Armourers' Guild of the city of Nuremberg. The dot to the right is a Forging Mark used to position the central 'keel' of the breast.



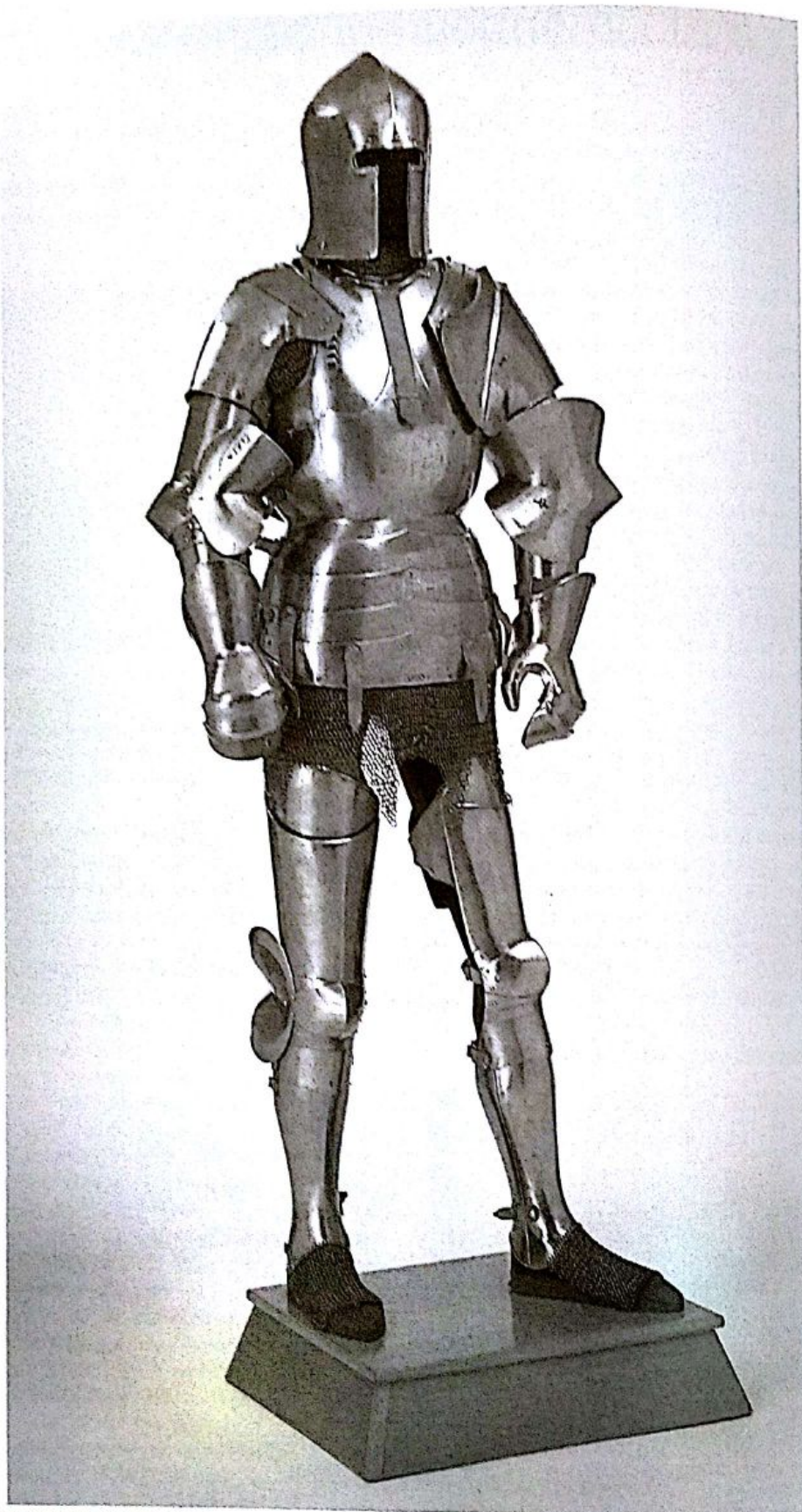
4 ANONYMOUS. Top lame from a German munition gorget, late 16th Century. Private collection. This gorget lame bears a different type of Forging Mark, probably made using a hammer and chisel.

## Forging Marks

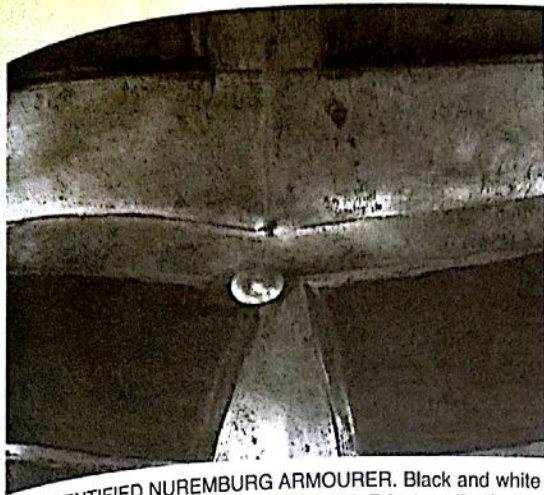
We begin with marks found on the exterior of armours, which betray some of the manufacturing techniques of their makers. They are not immediately obvious, but are easy enough to find on close inspection.

I have found Forging Marks on pieces dating back to the late 14th Century, and there is no reason to doubt that their use is as old as the very craft of the armourer. They almost always take the form of single dots, applied with a hammer and punch (fig 2). Very occasionally they appear as small narrow triangles, made by using a hammer and one end of the blade of a chisel, which was held at an angle to the plate while being struck (fig 4). They were commonly applied to the cold plates after they had been cut, but before they were hot-forged to shape (or when they had been partially forged – see below). This is because the armourers needed to be able to keep track of where they would be turning edges, punching holes, running internal leathers, or forging certain features. Punched marks were particularly necessary because other forms of marking, such as lines drawn with chalk or scribed with a sharpened tool, would not survive the hot forging of the flat plates into three-dimensional shapes. They were also a form of marking that would not be too intrusive on the surface of a polished plate once it had been ground off, and almost invisible on a plate left with a coloured or hammered finish.

These marks appear all over armours, but they survive most often on heavier plates where they could be deeply struck, and subsequent over-cleaning is unlikely to have



**1** WORKSHOP OF THE BROTHERS GIOVANNI AND BELLINO CORIO, THEIR COUSIN DIONISIO CORIO AND GIOVANNI DA GARAVELLE. Armour for the Governor of Matsch, Milan circa 1440–1445. Kelvingrove Museum, Glasgow. The helmet and gauntlets do not belong to this armour. The Venetian sallet is probably by Provasio da Milano, and the right gauntlet (the left is a modern restoration) is by Tommaso Missaglia, pre-1450.



3 UNIDENTIFIED NUREMBURG ARMOURER. Black and white breastplate, Nuremburg circa 1550-1555. Private collection. This is the waist of the breast shown in fig. 2. The dot struck in the centre where the flange is turned out is a Forging Mark, which positioned the line of the 'keel' and also showed where to turn out the flange.

obliterated them, particularly on breastplates and helmets. On breastplates they are commonly seen at the top and bottom of the 'keel' forged down the centre, usually just beneath the turn at the neck, and at the base of the breast where it is forged out into a flange (figs 2 and 3). They are also sometimes found just inside the edges of the shaped recesses for the armpits, being used to properly line up the articulated gussets that were fitted into them. Another place where they are often clearly visible is at the front and back of the comb on the skulls of close-helmets or burgonets. This is an example of their being struck into partially forged plates, since the skull of the helmet would have to be roughly raised up first, before the armourer decided where he was going to place the comb, when refining the shape of the skull.



5 ANONYMOUS. Left spaulder from an Almain collar, German, late 16th Century. Private collection. Every plate of the inside of this spaulder bears two types of mark. The first are Construction Marks, which take the form of file-cuts to the inner (rough) plate edges, and in the photo are marked C1 to C4 (on the spaulder they in fact run up to 6). The other type, all marked as B4, are Batch Marks for armour number 4 in a series. They are wedges that are probably made by striking the plate with the corner of the face of a hammer.

Forging marks should not be confused with Arsenal Marks struck as dots (see below), the vast majority of which (by definition) are multiple marks, and their placing has no relation to the forging of the plates.

### Construction Marks

Both these and the following category of marks (Batch Marks) were particularly necessary during large-scale industrialized production, when individual workshops may have been handling commissions for dozens, or even hundreds of armours (or elements of armours) at one time.<sup>1</sup> They are a step on from the individual forging of a single or principal plate, such as a breast or back, to the construction of a piece of armour that would consist of various articulating plates, such as a pauldron or tasset. Construction Marks appear commonly on armour dating from the early years of the 16th Century onwards, and it is interesting to note that this is contemporary with the introduction of many articulating plates in elements like



6 ANONYMOUS. Pair of hinges from a right greave, German, third quarter of the 16th Century. Private collection. The hinge on the left is from the ankle, and has the Construction Mark 3 (C3 in the photo). The right hinge comes from the calf area and has the Construction Mark 1 (C1 in the photo).

tassets, where the similar size and shaping of these plates would make them easy to confuse. Construction Marks would have been applied to the plates once they had been forged to shape, and were a way of keeping track of both the order of the plate within the element of armour (by numbering the plates in sequence), and of left and right (by their position on the plate itself), prior to heat-treatment, finishing and assembly. In addition, different processes in the manufacture of armour were carried out by different specialized craftsmen, such as polishers, so both Construction and Batch Marks were also a way of keeping the plates of an armour properly in order when passing from one craftsman to another.

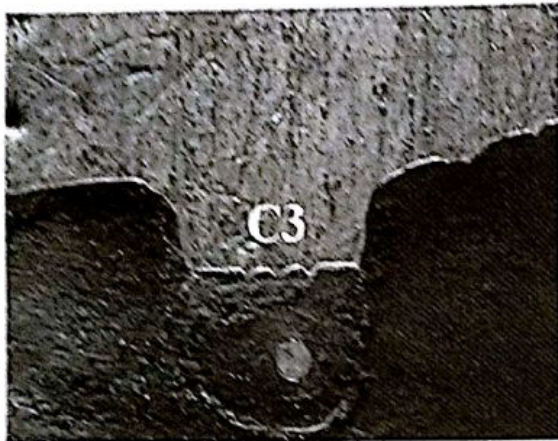
They can sometimes take the form of punched dots, or file-cuts applied to the inside of turned edges, but usually they appear as file cuts applied to the lower (rough) edges of plates, where an overlapping plate would cover them, and run in series as a number on each plate: 1, 2, 3, 4 etc. Almost always the numbering runs upwards - for instance,

from the knee of a long tasset up towards the fauld and brestplate, or from the outer spandrel plates of an Almain collar in towards the main plates covering the front and back of the chest (fig 5).

Another use of construction marks was to avoid mixing up fixtures, such as the hinges. I recently examined an elegant pair of German greaves (with integral sabatons) from the third quarter of the 16th Century. The four hinges upon which these greaves opened were carefully numbered to avoid confusion, with matching file cuts on the hinges and the recesses on the rear plates of the greaves into which they were riveted (figs 6 and 7). Interestingly, even the spurs, which are riveted into the backs of the greaves, have Construction Marks in the form of file cuts.

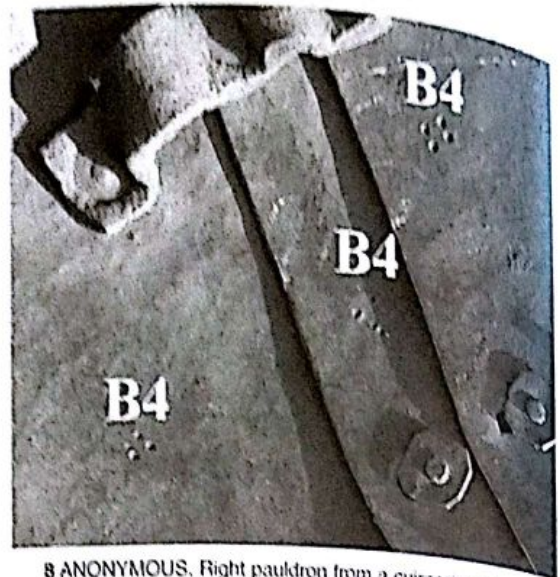
#### Batch Marks

From the marks used to assemble individual plates into elements of armour, we now move on to the marks used to distinguish how those elements went together to make up



7 ANONYMOUS. Rear plate of a right greave, German, third quarter of the 16th Century. Private collection. This is the recess that the hinge (marked C3) in fig. 6 is riveted into. It bears the matching Construction Mark 3 (marked C3 in the photo), filed into the edge of the plate.

an armour. Like Construction Marks, they were necessary in workshops with high volume production, and served two purposes. Their first use, put simply, was to show that breastplate 3 goes with backplate 3 and gorget 3 etc. This was absolutely necessary on hand-made pieces, since every breastplate (for instance) made by an armourer, no matter how similar they were, would be slightly different, and their corresponding backplates would have been made to fit that specific breastplate. Their second application was to show that the various plates of an individual element of armour belonged together: when making a series of pairs of tassets for example, this would avoid mixing up the near-identical plates of the various tassets in the group. Like Construction Marks, which they frequently appear alongside (fig 5), they were normally applied to every plate of an element of armour while those plates were cold. They are to be found on the vast majority of armour dating from the early 15th Century onwards, and I would expect them to have been in use from at least the middle of the 14th Century.

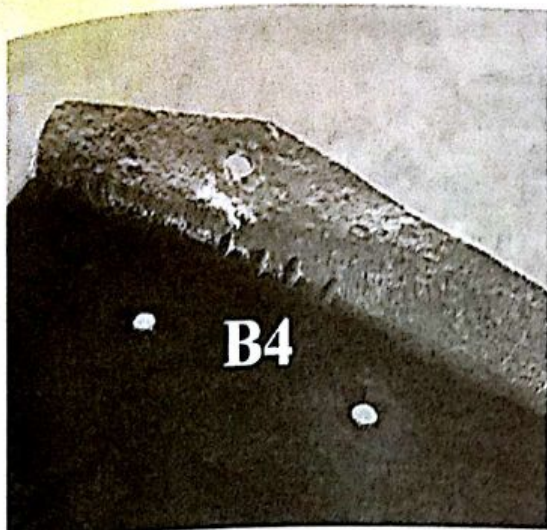


8 ANONYMOUS. Right pauldron from a cuirassier armour, German, mid 17th Century. Private collection. This inside of this pauldron is Batch Marked 4 (marked B4 in the photo), but this time the marks take the form of punched dots.

They can take the form of: punched dots (fig 8), small punched crescents, punched 'wedges' applied with the end of the blade of a chisel or chisel-faced hammer (fig 5) and straight chisel cuts (fig 9), all of which were applied to the flat inner surface of the plates. Alternatively they can be file-cuts applied to the inside of turned edges, across prominent internal angles (fig 10) or to the lower (rough) or lateral edges of plates (fig 18), and finally hammer-strikes (with a narrow-faced hammer) applied to the rough (lower) edges of plates (fig 20). These last are distinguishable from file-cuts because they are slightly rounded in form and the plates bulge out slightly in every place where they have been struck.



9 ANONYMOUS. Rear plate from a munition gorget, German, late 16th Century. Private collection. This inside of this plate has been Batch Marked 6 with the blade of a chisel (marked B6 in the photo).



10 ANONYMOUS. 'Death's head' close helmet from a cuirassier armour, German, early 17th Century. Private collection. This photo shows the inside of the neck area of the skull. It has been Batch Marked 4 (B4) with file-cuts across the angle formed where the flange for the gorget lame is turned out.

### Signatures

These are by far the best-known marks to be found on armour. Once the various parts of an armour had been finished, they were often (but not always) signed by the armourers who made them (or at least the Master of the workshop). These personal marks were registered with the Guild of Armourers in the city where the armourer resided, and were generally struck once, in a prominent position, on the exterior of the various elements of an armour.<sup>2</sup> However, Italian armourers of the 15th Century sometimes struck their Signatures many times. A good example of this practice is the cuirasse of the armour of Ulrich IX, Count of Kirchburg (Churburg, CH 19). This cuirasse was a collaboration by Pier Innocenzo da Faerno and Antonio Missaglia (both of Milan),<sup>3</sup> and is struck with a combination of their Signatures on: the shoulders of the breastplate, the neck of the backplate, the plackart, every single lame of the fauld, the lowest lame of the culet and the surviving right front tasset. They were doubtless also struck on the missing left, side and hind tassets.<sup>4</sup>

These Signatures were often composed of one or more letters from the armourer's name, or even a whole name. In the 15th Century, Milanese and Brescian armourers often used single letters or pairs of letters beneath or between the 'tails' of a split-tailed cross (fig 18).<sup>5</sup> Sometimes Italian Signatures were augmented in a way which also made them marks of prestige: for example Tommaso Missaglia changed the letters of his personal Signature by surmounting them with a crown. This is likely to reflect his appointment as Ducal Armourer to Francesco Sforza, Duke of Milan, on the 1st of April 1450.<sup>6</sup> However, these Signatures could also take the form of symbols, such as a helmet: the Augsburg armourer Lorenz Helmschmied, used a great helm surmounted by a cross (fig 11).

From the depth of many of these Signatures they were obviously struck while the plate was red-hot (about 850°

C), while the iron or steel was at its most ductile, and before subsequent heat-treatment rendered the plate too hard to mark in this way.<sup>7</sup> The plate was first brought to red heat in the forge and then placed on the firm support of a stake.<sup>8</sup> Then a steel punch was quickly placed on the surface of the plate and struck with a hammer. One reason that some Signatures on polished armours look very worn or badly struck today is that the marks were applied to the hammer-forged plates before subsequent grinding and polishing, which sometimes resulted in the grinding away of parts of the design of the Signature. Sometimes it is clear that the punch was hit more than once, and has jumped slightly between hammer blows, resulting in a mis-struck Signature.

### Workshop Marks

There is one example of a punched mark that relates to a workshop, rather than an individual craftsman. It is the word 'ARBOIS', and is found on its own on a breastplate in Zürich,<sup>9</sup> and with the additional mark of a crown on the tonlet armour of the Emperor Maximilian I in Vienna.<sup>10</sup> This mark identifies pieces made in the royal workshop set up in 1495 in Arbois in Burgundy, by the Milanese armourer Francesco da Merate (who worked also with his brother Gabriele), for Maximilian I. Lionello Boccia<sup>11</sup> believed that the presence of the crown indicated pieces made for Maximilian himself,<sup>12</sup> and its absence denoted pieces from the more general output of the workshop.

### View Marks

From the 15th Century we see another type of mark added to armours, applied before they were sold, which was a form of quality control. This type of mark showed that the officials of the Guild of Armourers in the city where the armourer worked had viewed the pieces of armour he



11 LORENZ HELMSCHMIED. Breastplate from a composite armour, Augsburg, early 16th Century. Wallace Collection, London (Inv. No. A31).

This breastplate bears two punched marks, one on either side of the central etched panel. The one on the left is a great helm surmounted by a cross, the Signature of Lorenz Helmschmied. That on the right is a fir cone, the View mark of the Armourers' Guild of Augsburg.



12 ANONYMOUS. Breastplate, Spanish, late 15th Century. Private collection.  
This mark, applied with a hammer and chisel, is thought to denote armour produced in the Spanish cities of Calatayud or Castajon de las Armas.

made and had approved them as fit for sale. It was also a clear advertisement for the quality of the armour in the city in which it was produced.<sup>13</sup> Like Signatures, these marks would have been struck into the plates while they were red-hot. This last fact is interesting, since it means that these marks cannot have been struck once the armours were completely finished. Therefore the armourers must have received permission to use these marks before they were struck.

In Germany we see marks for: Nuremburg, (the 'bildenschild', fig 2), Augsburg (a fir cone, fig 11) and Landshut (a hat). On armour produced by the Armourers Company of London, we find: an 'A' surmounted by a crown (used 1631-1650) and an 'A' surmounted by a helmet (used during the Commonwealth period 1650-1660)<sup>14</sup>

Another mark which may not fall fully into the realms of a View Mark, but is a mark of the locality of the production of a piece is a 'crow's foot' mark (fig 12). It has been suggested that this is the mark for armour produced in the Spanish cities of Calatayud or Castajon de las Armas.<sup>15</sup>

#### Arsenal Marks

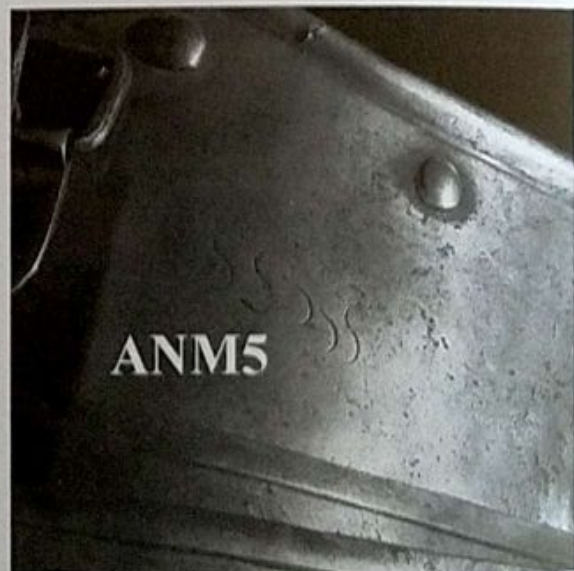
Finished armours were stored in arsenals, the most famous surviving example being the Landzeughaus in Graz in Austria, which still holds enough armour for nearly 4,000 troops. However, even the smallest family arsenal had to be kept in order, and so armours were given yet more marks to ensure that their various different elements did not get mixed up and confused when they were issued to the troops using them. The Batch Marks which had already been given to the armours by their makers were by this time often



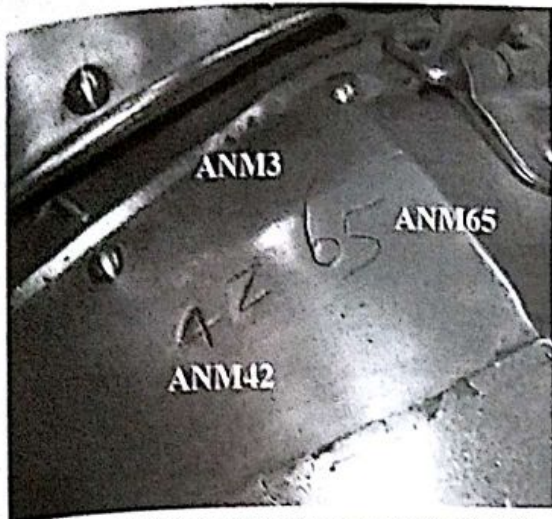
13 ANONYMOUS. Left pauldron from a cuirassier armour, German, mid 17th Century. Private collection.  
This pauldron has been struck with an Arsenal Numbering Mark of 7 bars (marked ANM7).

hidden by the liners used inside them, and in any case if the arsenal contained many armours by various makers, or multiple batches by the same maker, then they were rendered irrelevant in any case – for example, you might have any number of armours bearing the number 3 inside.

So once again the various elements of armours got struck with a new series of marks that would tally to the inventory held by the person responsible for the arsenal, quite possibly an armourer himself<sup>16</sup>. These marks were struck cold<sup>17</sup> into the outside of the plates and could take the form of various symbols, for example: dots, small bars (made by a chisel with a very narrow head, fig 13), 'S's (fig 14) and actual numbers (fig 15). For these I would suggest the terms 'Arsenal Numbering Marks'.



14 ANONYMOUS. Right pauldron from a cuirassier armour, German, mid 17th Century. Private collection.  
This pauldron has been struck with an Arsenal Numbering Mark of 5 S's (marked ANM5). It is almost certainly made by the same armourer who produced the pauldron in fig. 13.



15 ANONYMOUS. Left pauldron from a composite cuirassier armour, German, early 17th Century. Wallace Collection, London (Inv. No. A65).

This pauldron has a series of Arsenal Numbering Marks upon it, two marks being struck as numbers 42 and 65 (marked ANM 42 and 65 respectively in the photo), and a third being 3 marked as dots - ANM3 in the photo. The multiple numbering of this pauldron is evidence that it has been incorporated into various different armours during its working lifetime (other parts of the armour are struck with: 10, 13 or 42 (which appears six times) as numbers, and one gauntlet struck 8 as dots. It is also just possible however, that the dotted 3 on the pauldron might even have been a Size Mark. R. H. Wackemagel suggested that this armour is one of a series that came partly from the Munich Town Arsenal and partly from the Bavarian Electoral Arsenal (Wallace Collection Catalogue Supplement, 1986).

A different type of Arsenal Mark was nothing to do with numbering, but was instead more a mark of ownership. Again, such marks were normally applied to the outside of the plates, but sometimes (see below) they could be placed on the inside of the plates instead. In the arsenal of the Tower of London, armours were struck with 'C' surmounted by a crown (during the reign of Charles II) and 'IR' surmounted by a crown (during the reign of James II). These marks were used retrospectively, particularly in the case of the James II mark, since they appear on armours produced by makers who were dead before either monarch acceded to the throne. The James II mark is also very often badly struck - particularly on the brims of pikemen's pots, since they had a fabric lining inside, and here punching the marks has distorted the plate so badly that frequently it has actually broken right through.

Two other Arsenal Marks that denote where the pieces bearing them were originally stored are: a Maltese Cross (fig 16) for the arsenal of the Knights of Malta<sup>18</sup> (which was often struck on the inside of plates) and the Winged Lion of St. Mark (shown in profile), which probably indicates pieces from the arsenal of Venice.<sup>19</sup>

#### Size Marks

I have no direct evidence for the existence of these, but a recent examination of some marks on a group of vambraces of Brunswick production from the mid-16th Century have led me to suggest that they may exist, since I can think of no other logical use for the marks that I

found. On these vambraces they take the form of groups of dots marked clearly on the external surfaces of the couters (at the juncture between the cop and the wing), numbered between 1 and 4. They appear on pieces that already have Batch Marks (internally) and Arsenal Numbering Marks (externally above the turner on the upper vambrace), neither of which these marks correspond to. The vambraces are of different sizes, so could it be that they are evidence of distinct Size Marks?

#### Using these marks as an aid to armour appraisal

Looking at something like a mid-16th Century German half-armour, the analysis of the various marks both on the inside and outside of the plates can readily indicate whether its constituent parts (or the plates making up those parts) belong together. A cursory examination will show whether the Signatures and/or View Marks all match (if they are present), but even if they do, the parts of the armour could have been assembled from different armours made by the same armourer (or in the absence of Signatures, by various armourers from one city). So the next step is to carry out an examination of the inside of the plates to see whether the Construction Marks and Batch Marks match. When looking at Construction Marks for instance, a break in the sequence of numbering would suggest either a working lifetime repair to the piece or later restoration.<sup>20</sup>

The total absence of Batch Marks or Constructional Marks could be a cause for concern if the authenticity of a piece is in doubt, but I have seen plenty of pieces which carry neither, and are of undoubted authenticity. The absence of any Batch Mark could be taken to read number 0 in a series, or may be indicative of a workshop operating on a small scale. However, this may just reflect working practices: the majority of pieces I have seen which lack these marks are German.

However, returning to the subject of the trade practices of Italian armourers, analysis of marks becomes far more problematical, as we know that the work of different

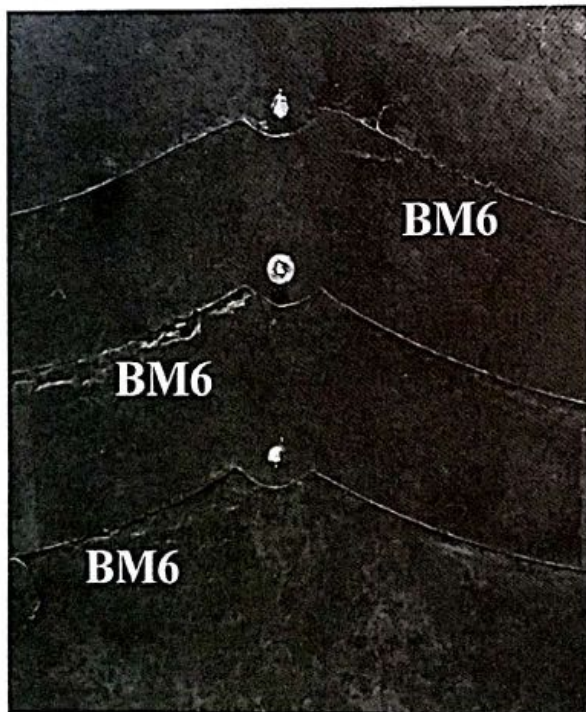


16 ANONYMOUS. Left gauntlet, North Italian, late 16th Century. Private collection.

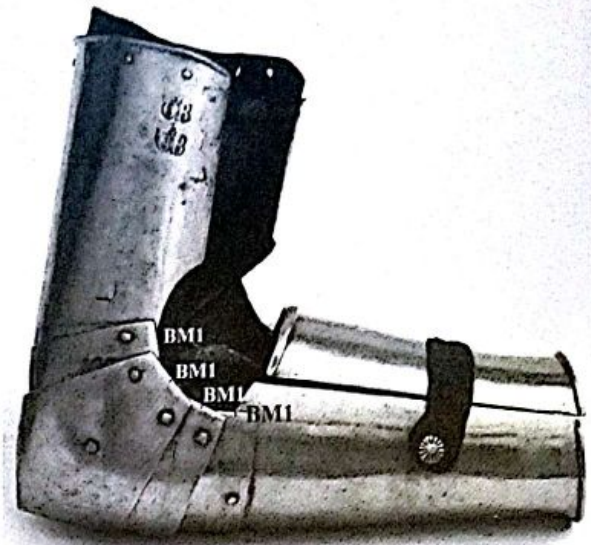
The mark of a Maltese Cross struck on the inside of the cuff of this gauntlet is the Arsenal Mark of the Knights of Malta.

specialized craftsmen was brought together to create whole armours, and the very plain 'sculptural' style of 15th Century Italian armour means that the various elements were readily interchangeable. The famous 'Avant' armour now in Glasgow (fig 1) presents us with a series of anomalies in its marking which need to be 'peeled away' in layers, and analysis of these marks actually creates more questions than answers.

The "Avant" armour had achieved its current form by 1929, when it was included in the catalogue written by Oswald Graf Trapp and Sir James Mann as CH 20. We may leave aside the helmet (a Venetian sallet) since it is known to be associated, the armet which is actually thought to belong to this armour being now in the Royal Armouries in Leeds.<sup>21</sup> At this point I am also going to follow Lionello Boccia in excluding the right gauntlet from the ensemble (the left being a restoration), since it is noticeably too large for the armour, and carries the marks of Tommaso Missaglia for pre-1450.<sup>22</sup> Looking first at the makers' Signatures, we should not expect them to all be the same, since we know that Italian armourers worked in collaboration with each other. They are as follows: the inner cuirasse, Giovanni Corio (an 'I' surmounted by a crown and a second mark made up of the letters 'ZA',<sup>23</sup> the 'I' appearing on its own on the armet in Leeds); the outer cuirasse, being the plackart, lower back, fauld and culet, Ambrogio Corio (an 'A' surmounted by a crown); the pauldrons, Bellino Corio (the letters 'BC' surmounted by a crown and a second mark of the letter 'B'); the vambraces, Dionisio Corio (the letters 'DS' beneath a small split-tailed cross, fig 18) and the legharness, Giovanni da Garavelle (the letters 'GI' beneath a cross).



17 GIOVANNI CORIO. Backplate of an inner cuirasse, Milan, circa 1440-1445. Kelvingrove Museum, Glasgow. The cuirasse bears file-cut Batch Marks for 6 (marked BM6 in the photo).



18 DIONISIO CORIO. Left vambrace, Milan, circa 1440-1445. Kelvingrove Museum, Glasgow.

This vambrace bears the file-cut Batch Mark 1 to the lateral edges of the plates (BM1 in the photo), while the right vambrace bears no Batch Marks at all. The Signature of Dionisio Corio (DS beneath a split-tailed cross) is visible struck twice at the top of the upper canon.

The armour bears no Construction Marks, but a look at the Batch Marks immediately raises some interesting questions – particularly with regard to pairs of items, such as the vambraces and pauldrons. Dealing first with the cuirasse, the inner back and breast are file-cut 6 (fig 17), but the culet, lower back, fauld and culet bear no Batch Mark, which could be read as 0. The fact that there is a discrepancy here is no problem, since Giovanni and Ambrogio Corio were brothers, and working together regularly could easily have assembled pieces that they had made independently, with a good fit. However, the pauldrons, despite *both* bearing the Signatures of the third Corio brother Bellino, have *different* Batch Marks: the left is file-cut 3, including the grandguard, while the right has no marks. So how are we to interpret this? Unfortunately the grandguard is missing from the right pauldron, so we are unable to make any judgement based on the form of the two grandguards,<sup>24</sup> but the engraved decoration on the stop-ribs on the pauldrons and the left grandguard matches (and matches that on the turns at the neck and arms of the breastplate), so at some point in time the pauldrons and cuirasse have been decorated to match, and there is no reason to believe the engraving is not 15th Century. So did the person who bought these pauldrons from the armourer decide he didn't want the pair as offered, and picked a different left or right pauldron which were then decorated to match - or did that happen once they had come into the family arsenal (which could easily have contained various pairs of pauldrons by Bellino Corio)? Likewise the vambraces, both signed by Dionisio Corio, are differently numbered: the left is file-cut 1 along the lateral edges of the plates, although not including the grandguard (fig 18), but the





19 GIOVANNI DA GARAVELLE. Left cuisse, Milan circa 1440-1445. Kelvingrove Museum, Glasgow. The plates of this cuisse are Batch Marked 1 with file-cuts to the lower (rough) edges of the plates (although not all of the plates – see main text).

right has no marks. With the lack of engraving to tie these two elements together, and Italian vambraces of the period being asymmetrical, we have no reason to believe that these two vambraces are not from two very similar pairs, unless once again the owner just happened to like to wear them in this combination. And why is there no marking on the reinforce over the left couter – is it a replacement?

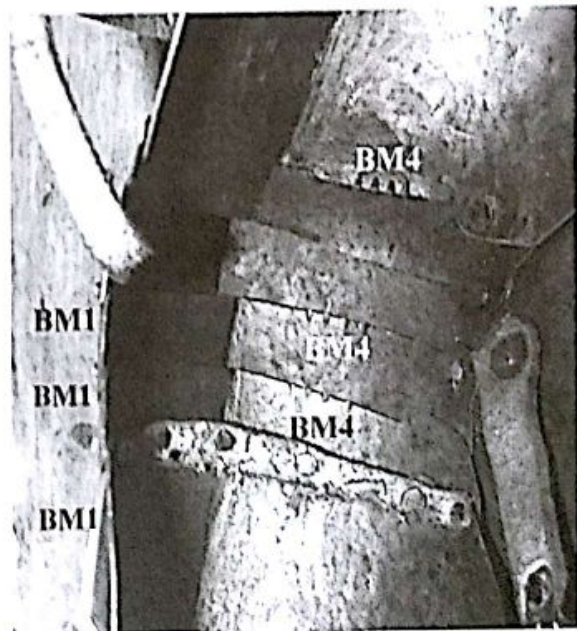
Moving down to the legharness, we have what may be a tantalizing glimpse into the working practices of Giovanni da Garavelle, who was apparently a specialist in the production of leg armour. Both greaves are file-cut 1, as is the left cuisse, although not on the cop, the demi-greave or the lateral thigh plates (fig 19), but the right cuisse (fig 20) is marked in a different and very interesting way. Down the centre of the leg, on the lower edges of the plates (which is where the left cuisse is file-cut), it is hammer-struck 4. However, it *also* bears the Batch Mark 1 file-cut on the lateral edges of its plates. My suggestion is that Giovanni, in putting together a set

of legharness for his client, for some reason combined elements that should originally have gone into two *separate* sets of leg armour, re-numbering the elements to match. Not only do the cuisses have different numbers (originally), but they are Batch Marked in a totally different way. Maybe something went wrong in making tight cuisse number 1,<sup>20</sup> or maybe it was a rush job and he had to use part of another set of cuisses – we shall never know, but either Giovanni da Garavelle had to change his plans to complete this commission, or they reached this form during their working lifetime, perhaps as a 'refit' after damage or loss.

### Conclusion

This article was never intended to be an exhaustive work on this little considered subject, but I hope that it will lead to a much more comprehensive approach to how we appraise and catalogue armour, with as much examination of the interior of plates as their exterior. I would therefore like to take this opportunity to ask readers to contact me with details of marks in their collections, since I wish to expand this study and possibly publish it as a book. Further, I believe it is time that we now began to examine the hammer-work on the inside and outside of plates, since in nearly twenty years' working on armour, I have noticed distinctive differences between the hammer-work of different armourers. If art-historians consider the brush-strokes of artists when studying paintings, then perhaps we should begin to take notice of the hammer-strokes of armourers?

Chris Dobson runs courses for collectors and museum staff in the basic care and appraisal of their collections at



20 GIOVANNI DA GARAVELLE. Right cuisse, Milan circa 1440-1445. Kelvingrove Museum, Glasgow. This cuisse bears two sets of Batch Marks. The lower (rough) edges of the plates have been hammer-struck 4 (BM4 in the photo), but the plates also have the file-cut Batch Mark 1 on their lateral edges (BM1 in the photo, unfortunately not fully in focus).

his workshop in Clare, Suffolk. If you would like to know more, or would like to contribute information about marks on armour, then contact details can be found at the front of this publication, or e-mail [c.dobson@masterarmourer.com](mailto:c.dobson@masterarmourer.com).

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### Sources & Notes

- 1 For a description of large-scale armour production in Italy in the 15th Century see my article *St. George's Workforce* in the 19th Park Lane Arms Fair Catalogue, February 2002, pp 9-13.
- 2 Augsburg armours of the mid-to-late 16th Century often have the armourer's Signature struck on the inside of the breast and backplate, while the view mark of the guild (see following section on View Marks) is struck on the outside of the those plates.
- 3 Italian armourers of the 15th Century commonly specialized in the production of individual elements of armour, pooling their resources (under the auspices of armourer-merchants) to furnish clients with complete armours. See also note 1 above.
- 4 For identification of these Signatures and other Italian Signatures see Lionello Boccia *Le Armature di S. Maria delle Grazie di Curtatone di Mantova e l'Armatura Lombarda del '400*, Bramante 1982, pp. 281-295. The Signatures are as follows:  
Pier Innocenzo da Faerno: a gothic letter 'y' surmounted by a trefoil (found in combination with the Signature 'inosens' on the horse armour Inv. No. 127.151/3-157/9 in the Historisches Museum der Stadt, Vienna).  
Antonio Missaglia: the combined letters 'an' surmounted by a hunting horn (this mark was used by him before 1452, the year of the death of his father Tommaso).
- 5 On some Italian Signatures on 15th Century pieces the 'tails' of the cross are continued to completely encircle the letters, creating an orb-like Signature. It has been suggested that these Signatures are Florentine: Mario Scalini *Guerra e Guerrieri nella Toscana del Rinascimento* Florence, 1990. Other variants of the split-tailed cross have a single tail, double horizontal bars, or what appear to be single letters attached to the sides of the tails, beneath a single horizontal bar. The ends of the bars or tails that make up these crosses can be rounded, rectangular or bifurcated.
- 6 Tommaso Missaglia used a combination of two marks: his personal Signature of the gothic letters 'my' (after 1450 surmounted by a crown) and the Missaglia workshop mark of the letter 'm' between the tails of a split-tailed cross. For identification of these Missaglia marks see note 4 above.
- 7 There is a possibly unique exception to Signatures being punched: the Milanese armourer Niccolò Silva (recorded 1511-1549) marked his armours with a crowned compass and the letters NI, NS or SILVA, etched or engraved into the surface. For a discussion of Silva's work see Stuart W. Pyhrr, *Some Elements of Armour Attributed to Niccolò Silva*, Metropolitan Museum Journal 18, Metropolitan Museum of Art, New York, 1984.
- 8 Stakes are the specialized anvils with variously shaped heads (ball, mushroom, cone etc) used by armourers for the hot forging of armour plates. Their name comes from the iron stem, or stake upon

- which the head was mounted, which was driven into a large wooden block to hold the tool firmly so the plates could be forged over it.
- 9 Schweizerisches Landesmuseum, Inv. No. LM4955.
  - 10 Hofjagd- und Rüstkammer, Inv. No. B.71.
  - 11 See note 4 above (p. 288).
  - 12 The crown is a royal one, since before 1508 Maximilian was 'King of the Romans', rather than Emperor.
  - 13 For example a record from the reign of Charles I in England: "Carolus I, ann. 7, 1631. John Franklin, William Crouch, John Athton, Thomas Stevens, Rowland Foster, Nicholas Marshall, William Cox, Edward Aynesley, Armourers and freemen of the Company of Armourers ordered to deliver 1500 armours each month...to train prentices...and stamp armours...and to approve of such as are suitable for warres...and being proved shall allow as fit for service and allowing shall stamp the same with A and a crown being the hall mark for the Company of Workmen Armouriers of London." (Ffoulkes, London, 1912, p. 191).
  - 14 On English armour from the Commonwealth period a further mark appears. This is a shield bearing the cross of St. George. It appears alongside the View Mark and maker's Signature, and Thom Richardson suggests this was in fact an acceptance mark used by the government. For a full study of Signatures and other marks on English armour of the 17th Century, see Thom Richardson *The London Armourers of the 17th Century*, Royal Armouries Monograph 7, 2004.
  - 15 Claude Blair *European Armour circa 1066 to 1700*, Batsford, London 1958.
  - 16 For example, the Court Armourer Caremolo Modrone was responsible for the Ducal Armoury of the Gonzaga family, Lords of Mantua, a fact attested in a document in the Archivio Notarile, Mantua (File: Rogiti Stivini, Court Notary 1506-1551): "Inventory of all the armours and other things found in the armoury in the Castle, in the care of Messer Caremolo Modrone, its keeper. Made this day of the 21st of January, 1542, with respect to the death of Signor Federico, Duke of Mantua."
  - 17 Smaller marks such as dots or small letters or numbers would be much easier to punch into a finished piece of armour than the often larger signature marks.
  - 18 The Order set up their headquarters on the island of Malta after the fall of Rhodes to the Turks in 1522. Prior to this they were known as the Knights of the Order of St. John of Jerusalem.
  - 19 See for example the Venetian sallet A75 in the Wallace Collection.
  - 20 A very interesting example of this is the so-called 'horned helmet' of Henry VIII, now held at the Royal Armouries in Leeds (class IV. 22), apparently made by Conrad Seusenhofer. I carried out a careful examination of the face-mask and failed to find the 'X' Batch Marks that are clearly visible on the cheek pieces. That, and other constructional and metallurgical anomalies have led me to the firm conclusion that this helmet is definitely composite: the skull and cheek pieces belonging together (having originally formed a sort of burgonet), while the face mask belonged to another helmet and the horns probably came originally from a shaffron. However, I do believe all but the horns are by Seusenhofer. These conclusions were given as my lecture at the Wallace Collection in February 2003: *The Horned Helmet of Henry VIII – the Inspector Morse Approach*.
  - 21 Class IV. 498.
  - 22 For this Signature see note 6. It is batch marked 3 with file cuts down the lateral edges of the plates.
  - 23 Thomas and Gamber suggested this was for 'Iohannes-Zoan'.
  - 24 From his study of 15th effigies showing Italian or Italianate armour, Tobias Capwell asserts that the embossed ridges on the grandguards on pauldrons should match stylistically (personal communication).
  - 25 Pieces of armour could suffer catastrophic cracking when heat-treated, rendering them useless (see note 1 above).

### Photographic Credits

- Fig. 1. Glasgow Museums, Art Gallery and Museum, Kelvingrove.  
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