

MARION ARCHIBALD

*Department of Coins and Medals  
The British Museum  
Great Russell Street  
London WC1B 3DG, UK  
mmarchibald@02.co.uk*

AN ASPECT OF DIE-PRODUCTION IN THE MIDDLE  
ANGLO-SAXON PERIOD: THE USE OF GUIDELINES  
IN THE CUTTING OF DIE-FACES

**UDK: 671.4.02(410.1)»08/09«  
Izvorni znanstveni rad**

*Felicitating Ivan Mirnik on his seventieth birthday and congratulating him on his major contribution to numismatics, both as a scholar and as curator of the Croatian national collection in the Archaeological Museum in Zagreb, I offer this contribution on a technical aspect of our subject which I know, from conversations during his many visits to London, is among his wide-ranging interests.*

*Key words: England, Anglo-Saxon, coin, die, die-face, guidelines, dividers, York.*

*Ključne riječi: Engleska, anglosaksonski, novac, punca, udarna površina punce, smjernice, prečke, York.*

Uniformity of appearance is desirable in a coinage to enable users to distinguish official issues from counterfeits on sight, and one of the ways to achieve this is to standardise as far as possible the methods of production. Contemporary references to ancient coining methods are virtually non-existent. The most informative account is by the South Arabian al-Hamdânî writing in the first half of the tenth century (TOLL 1970/1971: 129-131; 1990). On the preparation of the die-face he mentions the use of dividers to fix the centre. For the Anglo-Saxon period in England there are no early written sources whatsoever on this subject and we have to rely on a

study of the surviving coins and dies. The use of guide marks in the preparation of the faces of coin-dies is a wide-ranging subject whose detailed study is still in its early stages. This short note focuses on the evidence for the various forms of guidelines used in the middle period of the Anglo-Saxon silver coinage, in the later ninth and earlier tenth centuries *Anno Domini*.

Before embarking on the discussion, it is necessary to provide an outline of the political and numismatic context. In the later ninth century, Anglo-Saxon England was divided into four kingdoms: Northumbria in the north, with its capital at York, Mercia in the midlands, including the commercial centre of London, East Anglia to the east and Wessex in the south.<sup>1</sup> All these kingdoms issued coins in the names of their rulers, usually featuring their own independent designs but sometimes using the same type. Coins were also struck for successive Archbishops of Canterbury and York. By this period, Viking invaders had taken over Northumbria, East Anglia and most of Mercia. They threatened to overwhelm Wessex but the latter, under Alfred, 871-899, managed to maintain its independence and then took control of some former Mercian areas including London.

The Viking rulers also issued their own coins. Earlier coins were direct imitations of Alfred's issues, sometimes even struck in his name, but later ones, with contemporary West Saxon or independent types, named their own rulers or the local saint. The early tenth century saw the kings of Wessex gradually recover the Viking-held areas until the country was united first under Athelstan, 924-939, from 927 and then, after a Viking reoccupation of Northumbria following his death, the last Viking king was expelled from York in 952 and Athelstan's successors re-imposed Anglo-Saxon rule over all England. Even after unification, a degree of regionalism survived in the design and regulation of the coinage, and a uniform national type was not instituted until c.973, after the end of the period under review.

The only denominations being regularly produced in both the Anglo-Saxon and Viking kingdoms were the silver penny and halfpenny. The pennies were struck at changing weight standards generally between c. 20-24 grains (c.1.3-1.5 grams) and measure c.20-22mm in diameter. The reverse of most coins name the moneyer responsible for their production. Some inscriptions add the mint but most at this period do not, and the area or place of production has to be deduced from the moneyers' appearance at named mints on other issues, or from provenance and stylistic considerations. Only four Anglo-Saxon dies are known to survive, just two of them for the period under review. These were produced locally so that method of preparing the dies and die-faces could vary with local practice in different parts of the country. Full numismatic details may be found in North 1994.

The coinage of the later ninth and earlier tenth centuries is particularly suitable for this study because the types are generally more open in their designs, making it easier to spot traces of guidelines than on the more crowded types of earlier and later issues. Guidelines were not intended to be seen on the finished coin and in most cases have disappeared when the die was polished prior to use. Wear, damage, test-marking and corrosion can all increase the difficulty of recognising guidelines and care must be taken to distinguish the usually faint traces from accidental scratches, the effects of double or over-striking, and the often deceptively linear abrasions caused by polishing. Only a selection of the coins with traces of guidelines can be mentioned individually here. Unless otherwise stated, all the coins cited are in the British Museum collection. The guidelines described are clear to the naked eye but would require high magnification, not practicable here, to show up on many of the photographs.

<sup>1</sup> Wales, Ireland and Scotland did not produce coins at this time.

On Anglo-Saxon coins, the perfectly regular outer circles, either single (Pl. 1, 9-13 and 18) or double (Pl. 1, 14-17), and the inner circles of the coins had clearly been laid out on the die as shown in the sketch pl. 1, 1 using what are often called »compasses« but are, more properly, »dividers« as the hinged tool had points at the ends of both limbs. The spacing between the two outer circles and the diameter of the inner circle could be altered as required from issue to issue and from place to place, from the small inner circles on the obverses of the Two Line type coins of the Alfred (Pl. 1, 11) and Eadgar, 959-975, (Pl. 1, 16) to the larger ones in the case of the obverse of Edward the Elder, 899-925, (Pl. 1, 12) and the reverse of Eadgar (Pl. 1, 17). Their lines could then be strengthened as an uninterrupted line or pelleted, in which case the guideline can remain visible like a string between more widely spaced beads. On the penny of Edgar (Pl. 1, 17) the strengthening of the inner circle, broken to accommodate the obverse effigy, was not done perfectly so that the underlying guideline is exposed where it joins the effigy at the left-hand side.

The centre point from which these guidelines were drawn is usually concealed by the central cross or another feature of the design, but it survives coincidentally on some dies such as the Hand of God reverse type of Edward the Elder (Pl. 1, 13), or is deliberately strengthened to become a feature of the design itself on some varieties of the late Two Line type of Alfred (Pl. 1, 11).

The use of dividers was not confined to the inner and outer circles. They were also regularly used to lay out the inscription and details of the type. This is clearly demonstrated by a remarkable group of mint-related material found between 1971 and 1981 in the excavations at 16-22 Coppergate, York, and published with a detailed discussion in Pirie 1986. It included the first recognised, and still the oldest, Anglo-Saxon dies known to have survived. The first was a complete lower die for the obverse of a penny of the Vikings of York produced in the earlier 920s (STEWART 1986: 42-43) in the name of the city's patron St Peter (Pl. 1, 7). The second was the steel die-cap broken off from the top of another obverse die of Athelstan dating from the later years of his reign after he had taken York from the Vikings in 927 (as NORTH 1994: no. 672).<sup>2</sup> Also present in this group were three impressions of other coin dies struck onto pieces of lead. The purpose of these pieces is uncertain (either trial / record) pieces (PIRIE 1986: 37-40) or customs receipts (ARCHIBALD 1991: 335-336) but this does not affect the present discussion. The largest, leaf-shaped, example, is 153mm long but shown reduced on the plate (Pl. 1, 6). It was bent over double when it was found. It bears on the same side impressions of the obverse and the reverse dies for a penny of Eadwig (955-959) of the West Mercian Rosette type by the Chester moneyer Frothric, and another weak impression of the obverse appears on the other side of the strip. I am grateful to the York Archaeological Trust for permission to illustrate these items from their published photographs.

On each of the two rounded-headed York dies, the die-face is surrounded by a circular margin on which are located four small circular indentations at the quarter points (Pl. 1, 7). All four marks are not now visible in very case due to corrosion. These were the centre-points of intersecting arcs drawn by dividers within the circular die-face, as shown in the sketch pl. 1, 2. On the lead impressions these indentations appear as relief pellets (Pl. 1, 6, reduced). These were guidelines which fixed the location of the central cross of the type and helped to ensure the even spacing of the letters of the circumscription legend (PIRIE 1986: 35-36). On dies with designs rather than simply a circumscription legend, they helped to locate the letters and other details as on the St Peter die (Pl. 1, 7).

<sup>2</sup> Not illustrated; for the technology of early English dies see ARCHIBALD *et al.* 1995.

A year before the publication of the York finds, the account of a hoard found at Baldringe, Skane, Sweden, noted that the sole English coin present, of the First Small Cross type of Æthelred II, 978-1016, struck at the beginning of the reign by the moneyer Ha[ll]fgrim at Lincoln, has on the reverse »traces of rhombic figur [sic]« (CNS 1985: 18, no. 125, Pl 1, 125). Although the reason behind the faint figure was not then appreciated, it is clearly another example of the intersecting arc guidelines for the layout of the die. A coin in the British Museum struck from the same dies (*BMC AS II*: no. 18)<sup>3</sup> naturally also shows these guidelines. Although again later than the period at present under review, Talvio had earlier pointed out that on obverse dies of the Long Cross type of Æthelred II, pellets at the neck and forehead on the coin were equidistant from the centre point in a straight line and therefore on »an imaginary circle roughly defining the outline of the head and cutting the chin point and the forehead« (TALVIO 1961: 124-125). It would appear that a circular guideline of the same general category as those discussed above was being used here. Talvio notes similarities and variations of this pellet technique in other Æthelred types before and after.

Anglo-Saxon coins are seldom struck off centre, so examples of marginal pellets rarely appear on finished coins. One exception is a penny of Edgar, 959-975, by the moneyer Ingenc which has a marginal pellet showing on the obverse beyond the outer circle (Pl.1, 16, at the bottom). Although production standards in the Viking issues were also generally high, they include more examples of this type of mis-strike such as pennies<sup>4</sup> of St Edmund of East Anglia struck c.900-c.905 by the moneyer Sigemund<sup>5</sup> and of Cnut, king of the Vikings of York, c.897-c.910, of the mint-signed EBRAICE CIV type.<sup>6</sup> The identity of methodology with the Anglo-Saxon prototypes is a strong indication that the Vikings in East Anglia employed Anglo-Saxon experts from the preceding local regime when they first began to strike coins in England. It has been suggested that the Vikings in York may have employed Carolingian experts (LYON – STEWART 1961: 117). The only Carolingian die known to have survived is an upper die for a denier of Charles the Bald, 840-877, cut with the obverse type. Probably working from photographs, Blunt wrote that although there are small depressions in the margin of the die-face, their identification as quarter marks is uncertain because the surface is pitting by corrosion (BLUNT 1986: 44, Pl. Xa and b). The circular mark at the top remains a likely candidate. The production techniques of Carolingian dies of the period have not yet been investigated but could shed new light on the likely presence or otherwise of guide marks when the die-face is re-examined.

Many other coins showing traces of arced guidelines of this general type have been noted including an Alfred penny of the Two Line type with the obverse legend divided into four sections by the moneyers Beagstan (Pl. 1., 11) and Bernred (Assheton collection, not illustrated), the reverse of an East Anglian coin of Edgar by the moneyer Norbert (Pl. 1, 17) and Viking coins including pennies of the Cnut/Cunnetti type of York and a halfpenny copying the London Monogram type of Alfred probably struck in the Midlands (all from the Assheton collection, not illustrated). The system of guidelines formed by arcs based on marginal points was highly flexible. As the Alfred issue where the obverse legend in divided into four parts was

<sup>3</sup> Not illustrated.

<sup>4</sup> Not illustrated here.

<sup>5</sup> Assheton collection; A large unpublished parcel of coins from the Viking treasure, deposited in c.AD 905-910, found in 1840 at Cuerdale, Lancashire, which is the property of the Assheton family. It has been generously placed on loan in the British Museum by Lord Clitheroe and the Hon. Ralph Assheton.

<sup>6</sup> In the Cabinet des Medailles, Paris, no. 165.

drafted in this way it also seems likely that the later issue where the inscription is divided into three parts, which was produced in Winchester, was also set out using arcs from three marginal points but this still requires confirmation.

The configuration of arced guidelines could also be varied to suit the requirements of other designs with pictorial types as well as those with inscriptions only. The marginal points could be located nearer to, or further from, the edge of the die, and the dividers could be used with larger or smaller radii as required. On the obverse of coins of the Cross and Lozenge type of Alfred, two arcs based on the marginal points at the first and third quarter positions, were drawn with a larger space between to locate the stylised effigy of the king. These guidelines have been noted on dies used by the moneyers Hereferth (Pl. 1, 9) and Liafwald (Assheton collection, not illustrated). These coins are not mint-signed, but the moneyers worked at the London mint (BLACKBURN – KEYNES 1998: 137-143). The reverse of this type features a lozenge in the centre which is also likely to have been engraved onto the die over intersecting arced guidelines from the four quarter points. The commonness of lozenge-based types on the broad penny coinage in the Anglo-Saxon period from Offa, 757-796, onwards, and even beyond the Norman Conquest in 1066, suggests that a similar method was employed throughout in drafting die-faces with this feature.

Although the guidelines on these London coins share the technique of the York and Chester pieces struck from round dies, there is no evidence that they were also the products of round dies. Obverse and reverse dies of Alfred of the same type by Ealdulf, another London moneyer, were struck onto a lead weight for half a Roman pound or 120 contemporary silver pennies found at St Paul's churchyard in the city in 1841 (STEWART 1978: 186).<sup>7</sup> The outline of the die impressions, followed by the weight itself, is square with rounded corners, the standard shape of dies for mints around the whole country produced after their manufacture had been centralised in London late in the reign of Cnut, 1016-1035. Lead is an unstable material and the weight is corroded. Its appearance has deteriorated since it was found (but probably not so much as might be assumed from a drawing made shortly after it came to light as that probably enhanced the amount of detail visible). The poor condition of the weight makes it impossible to distinguish any marginal centring marks in relief or guidelines of any sort. Unfortunately, the same is true of the few other Anglo-Saxon dies and extended impressions on lead strikings. The continuing use of designs based on lozenges discussed above suggests that the arced technique was probably also used on square dies and continued later, but more evidence is required.

There is no Anglo-Saxon account of technology involving the use of dividers, but the treatise *On Divers Arts* written under the pen name of »Theophilus« by the Benedictine monk and metal-worker Roger of Helmarshausen between 1110 and 1140 (HAWTHORNE – SMITH 1972: xv-xvii) refers several times to their use. He mentions dividers »both straight and curved« (the latter to be identified with callipers for measuring convex bodies) used in silversmithing and other craftwork (HAWTHORNE – SMITH 1972: 92, 93, 99, 100, 102). Several examples of both tools are shown hanging on the wall of a later goldsmith's workshop engraved by Stephanus in 1576 (HAWTHORNE – SMITH 1972: Pls. IV and V). Dividers were also used to lay out illuminated manuscripts and are shown in the frequently – reproduced image of the prophet Ezra represented writing at a desk which illustrates the *Codex Amiatinus* now in the *Biblioteca Medicea – Laurenziana*, Florence (WEITZMANN 1977: 126-127, pl. 48; RODWELL 1982: 96, pl. 24). The

<sup>7</sup> Here shown on Pl. 1, 8, reduced.

codex was created at the monastery of Jarrow-Wearmouth in Anglo-Saxon Northumbria in the earlier eighth century, but was based on books known to have been brought back by its abbot from visits to Rome. A set of dividers lie on the floor in front of Ezra's footstool in the foreground of the miniature. No actual dividers appear to have survived from Anglo-Saxon England but what are probably parts of such tools have been found on early medieval sites in Ireland *e.g.* three examples from a seventh/eighth century context at Garryduff, Co. Cork (COATSWORTH – PINDER 2002: 56-58).<sup>8</sup>

Rules for drawing straight lines and measuring while planning craftwork are also mentioned in Theophilus, often in conjunction with dividers (HAWTHORNE – SMITH 1979: 29, 61, 126).<sup>9</sup> These tools were also used to inscribe guidelines on the faces of coin dies. On some dies a pair of horizontal and vertical parallel guidelines intersect at right angles in the centre of the die-face as shown in the sketch pl. 1, 5. Guidelines of this type appear on both sides of a late Two line type coin of Edward the Elder by the moneyer Wulfweard (Pl. 1, 12). The line of three crosses are positioned within the pair of horizontal lines with the line of letters above and below apparently positioned by eye while ensuring that the central letters L on the top line, the central cross on the middle line and D on the bottom line are positioned within the pair of vertical lines. The same type of guidelines were also used on both obverse and reverse die for a penny of Alfred of Exeter (Pl. 1 10). Although here there are four lines of letters on the obverse, two lines in each direction were sufficient for the die cutter who positioned one central line of letters above one horizontal line and the other lone of letters below the other. The shorter top and bottom lines of letters appear to have been added by eye as there is no trace of further lines. This suggests the drafter of the die tried to use as few guidelines as possible to avoid cluttering the die-face. Placed within the two vertical lines are the AE from the top line, the ED from the second, the A from the third and the V from the bottom line. Just as intersecting arc guidelines probably gave rise to a series of lozenge types, so the cross-formation of vertical and horizontal guidelines prompted several linear types. The guidelines were strengthened by beading to create the main lines of the Open Cross type used on coins of Alfred's father Æthelwulf (*BMC AS II*: no. 63) and older brother Æthelberht (*BMC AS II*: no. 35) in the later 850s and early 860s.

In the case of a reverse with a single horizontal line of inscription across the middle of the reverse, guidelines as shown in pl. 1, 4 were used. For many examples of the common Two Line reverse type produced for successive kings during the late ninth and tenth century up to Eadgar's reform of the coinage *c.*973, the guidelines took the form shown on Pl. 1, 3. The two lines of letters setting out the moneyer's name with three crosses or other motifs horizontally between, were each punched in over a guideline running through the centre of the letters and motifs. On the die for a Two Line type of Edmund, 939-946, (Pl. 1, 14) the three crosses are joined by a heavy line. This is not an intentional variant but was the result of the die-cutter misunderstanding the central horizontal guideline and treating it as part of the design to be strengthened. Sometimes the guidelines are clear and in the correct place but the die-cutter did not follow them.

In his medieval minting experiments, Sellwood evidently employed dividers to inscribe outer and inner circles but did not otherwise use guidelines (SELLWOOD 1962). The inscription and the type within them he located by eye. He demonstrated that the letters of the inscriptions

<sup>8</sup> I owe this reference to Professor James Graham-Campbell and I am grateful to him and Mrs Leslie Webster for discussing the survival of dividers with me.

<sup>9</sup> On medieval linear measures generally, GRIERSON 1971

were punched onto the dies using combinations of just five positive punches, an I, a large and a small crescent, a wedge and a bar. He also used a slightly curved punch for strengthening the inner circle and a hand burin for engraving the type and other details. Occasionally the use of punches can be demonstrated on the coins by multiple appearances of a damaged punch, as in the case of the small crescent with flaws on the front curve used several times on the die for a penny of Eadred, 946-955 (Pl. 1, 15).

The coins also show the use of vertical strokes to indicate the position on the die-face of letters in the inscriptions. On some dies these strokes mark the site for each letter and occasionally something has gone wrong either in the layout or the punching in of the letters resulting in a redundant stroke between the finished letters. On other dies, the strokes appear to have marked the positions of only the upright elements of the letters. These marks were no doubt usually covered later by the punched letters but can sometimes be seen as thin strokes protruding above and/or below the punched verticals *e.g.* on a penny of Alfred of the London Monogram type (*BMC AS II*: no. 93: pl, V, 4). This suggests that on some dies at least, all the verticals were punched in first before other elements of the letters were added, in an ancient application of time and motion studies to prevent a waste of time picking up and laying down the several punches required to produce each complete letter in turn. I have noted no Anglo-Saxon proof of this proposition but the obverse of a Dover penny of William II, 1087-1100, of the Cross Voided type shows only the initial cross and the first letter P (for W) of the king's name followed by the uprights only of the rest of the letters (*BMC NK I*: no.184, II: Pl. XXX-IV, 4).<sup>10</sup> It would appear that an unfinished die was sent to Dover, used, and the resulting coin circulated, without anyone apparently noticing.

The evidence for the use of guidelines in drafting the layout of die-faces of the later ninth and earlier tenth century is now fairly extensive. Although traces are visible on only a small percentage of surviving coins, it is likely that all official dies were normally prepared in this manner. Two main groups of guidelines are present, those created using dividers and those created using a rule, but more evidence is required before conclusions can be reached about the geographical distribution of these types and their association with round, and square, headed dies

---

<sup>10</sup> Not illustrated here.

## ABBREVIATIONS

- BMC, AS I** – KEARY, C.F. – POOLE, R.S. 1887 – *A catalogue of English coins in the British Museum. Anglo-Saxon Series vol. I.* London, 1887.
- BMC, AS II** – GRUEBER, H.A. – KEARY, C.F. 1893 *A catalogue of English coins in the British Museum. Anglo-Saxon Series vol. II.* London, 1893.
- BMC, NK** – BROOKE, G.C. 1916 – *A catalogue of English coins in the British Museum. The Norman Kings. 2 vols.* London, 1916.
- BNJ** - *British Numismatic Journal*, British Numismatic Society. (London)
- CNS** – MALMER, B. (ed.) 1985 – *Corpus Nummorum Saeculorum IX-XI qui in Suecia reperti sunt*. Catalogue of coins from the Viking Age found in Sweden. 3. Skåne. 1. Åhus – Grönby. Stockholm, 1985.
- SCBI** – ARCHIBALD, M. M. – BLUNT, C.E. 1986 – *Sylloge of the coins of the British Isles. British Museum, Anglo-Saxon coins, Part V, Athelstan to Edgar's reform.* British Museum and British Academy. London, 1986.

## REFERENCES

- ARCHIBALD, M.M. 1991 – Anglo-Saxon and Norman lead objects with official coin types. In: A. VINCE, (Ed.), *Aspects of Saxo-Norman London: 2. Finds and environmental evidence. London and Middlesex Archaeological Society Special Paper 12.* London, 1991: 326-346.
- ARCHIBALD, M.M. – LANG, J.R.S. – MILNE, G. 1995 – Four early medieval coin dies from the London waterfront. *NC*, 155/1995: 171-179, Pl. 30 -37.
- BLACKBURN, M. – KEYNES, S. 1998 – A corpus of the Cross-and Lozenge and related coinages of Alfred, Ceolwulf II and Archbishop Æthelred. In: BLACKBURN, M.A.S. – D.N. DUMVILLE (eds.), *Kings, currency and alliances. History of Southern England in the ninth century.* Woodstock, 1998: 125-150.
- BLUNT, C. E. 1986 – The Carolingian coin die from Melle. In: PIRIE, E.J.E. (ed.), 1986: 44-45.
- COATSWORTH, E. – PINDER, M. 2002 – *The Art of the Anglo-Saxon Goldsmith. Fine Metalwork in Anglo-Saxon England: its Practice and Practitioners. Anglo-Saxon Studies 2.* Woodbridge, 2002.
- GRAHAM-CAMPBELL, J. 2012 – *The Cuerdale Hoard.* London, 2012.
- GRIERSON, P. 1971 – *English linear measures. The Stenton Lecture.* Reading, 1971.
- HAWTHORNE, J.G. – SMITH, C.S. (trans.) 1979 – Theophilus, *On Divers Arts.* New York, 1979.
- JONSSON, K. – MALMER, B. (eds.) 1986 – *Sigtuna Papers. Proceedings of the Sigtuna symposium on Viking-Age coinage 1-4 June 1989. Corpus Nummorum Saeculorum. Nova Series 6.* Stockholm, 1986.
- LYON, C.S.S. – STEWART, B.H.I.H. 1961 – The Northumbrian Viking coins in the Cuerdale hoard. In: DOLLEY, R.H.M. (ed.), *Anglo-Saxon Coins.* London, 1961: 96- 121.
- NORTH, J.J. 1994 – *English Hammered Coinage vol. I, 3<sup>rd</sup> edn. Early Anglo-Saxon to Henry III c.600-1272.* London, 1994.
- PIRIE, E.J.E. (ed.) 1986 – *Post-Roman coins from York excavations 1971-81. The Archaeology of York, Vol. 18: The Coins.* York Archaeological Trust for Excavation and Research. London, 1986.



- RODWELL, C.R. 1982 – *Anglo-Saxon Art. A new perspective*. Manchester, 1982.
- SELLWOOD, D. 1962 – Medieval minting techniques. *BNJ*, 31/1962: 57-65.
- STEWART, B.H.I.H. 1986 – The date of the St Peter coin die. In: PIRIE, E.J.E., 1986: 42-43.
- STEWART, I. 1978 – A lead striking of William II's last coin type. *NC*, 7<sup>th</sup> Series, 17/1978: 185-187.
- TALVIO, T. 1961 – *A note on the engraving of dies for the Long Cross type of Æthelred II*. *Spink's Numismatic Circular*, March 1961: 240-241.
- TOLL, C.  
 – 1970 -1971. Minting technique according to Arabic literary sources. *Orientalia Suecana*, 19-20/1970-1971: 125-139.  
 – 1990. The fabrication of Arabic coins. In: K. JONSSON – B. MALMER (eds.), *Sigtuna Papers. Proceedings of the Sigtuna symposium on Viking-Age coinage 1-4 June 1989. CNS Nova Series 6*, Stockholm, 1986: 331-333.
- WEBSTER, L. – BACKHOUSE, J. 1991. *The Making of England. Anglo-Saxon art and culture AD 600-900*. London, 1991.
- WEITZMANN, K. 1977 – *Late Antique and Early Christian Book Illustration*. New York, 1977.

JEDAN VID PROIZVODNJE ŽIGOVA  
 U SREDNJEM ANGLOSAKSONSKOM RAZDOBLJU:  
 UPORABA POMOĆNIH OZNAKA PRILIKOM IZRADE POVRŠINE ŽIGA

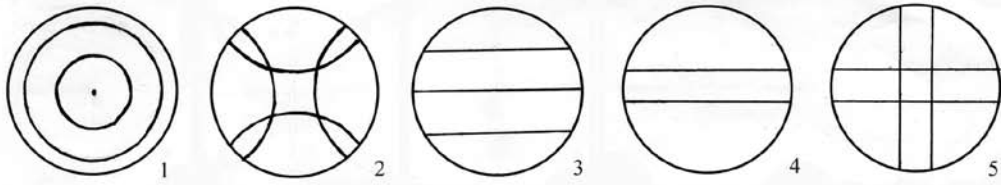
U radu se govori o pomoćnim oznakama koje su se upotrebljavale prilikom urezivanja površine žigova koji su se rabili za kovanje anglosaksonskog i vikinškog novca u Engleskoj krajem 9. i početkom 10. stoljeća. Iznosi se politički i numizmatički kontekst. Ne postoje pisani izvori iz tog doba koji bi opisivali tadašnje tehnike kovanja novca u Engleskoj pa se dokazi moraju tražiti među sačuvanim žigovima, novcu i otkovima u olovu za utege i druge svrhe. Razdjelni krugovi su se upotrebljavali za označavanje vanjske i unutarnje kružnice te za urezivanje lukova koji su se međusobno križali, a služili su kao pomoćna oznaka za pozicioniranje slova natpisa te detalja prikaza. Na dva okrugla željezna žiga pronađena u Yorku vide se četiri kvadratne točke na rubu oko prikaza, a po njima su se ravnali lukovi. Takve kvadratne točke pojavljuju se i na olovnim kovanim predmetima i na pogrešno otkovanom novcu.

Na novcu emitiranom u vikinškom Yorku također se vide slične kvadratne točke i pomoćne oznake. Ravnala su se rabila za obilježavanje okomitih i vodoravnih linija na kojima ili između kojih su bila razmještena slova i simboli na površini žiga. Pomoćne oznake upotrebljavale su se i za označavanje položaja slova unutar natpisa, a na nekim se primjercima novca vidi njihov trag iznad i/ili ispod uspravnih dijelova slova. Iako je bilo značajnih razlika u tehnici, moguće je razlikovati pojedine regionalne skupine. Potrebno je još mnogo podataka kako bi se razjasnio cjelokupni način izrade.

## LIST OF ILLUSTRATIONS

## Plate 1

1. – 5. Sketches of guidelines used.
6. Lead sheet struck with dies of Eadwig, 955-959. Length: 153mm. Shown here reduced. Pirie 1986, no. 59. Yorkshire Museum, York. Illustration copyright of the York Archaeological Trust, reproduced with its permission.
7. Die-face of a lower (obverse) iron die of Viking York, Sword St Peter Type, earlier 920s. Diameter: 28mm. Pirie 1986, no.43. Yorkshire Museum. Illustration copyright of the York Archaeological Trust, reproduced with its permission.
8. Lead weight showing the impression of a London reverse die of Alfred of Wessex (871-899), Cross and Lozenge type, moneyer Ealdulf. Found in St Paul's churchyard, London, 1841. Dimensions: 27x25mm; weight 163.1g. Shown here reduced. Webster and Backhouse 1991, 285-6, no. 264. British Museum, London. Photographs copyright of the British Museum and reproduced by permission of the Trustees of the British Museum. Coins nos 9-18, made of silver and shown natural size, are in the British Museum, London. Photographs are copyright of the British Museum and reproduced by permission of the Trustees of the British Museum.
9. Penny of Alfred, 871-899. Cross and Lozenge type, London (unsigned), Hereferth. BM 1904, 6-3, 2.
10. Penny of Alfred, 871-899. Mint type, Exeter. *BMC AS II*: no. 79.
11. Penny of Alfred, 871-899. Two Line type, Beagstan. *BMC AS II*: no. 201.
12. Penny of Edward the Elder 899-924. Late Southern Area, Wulfheard. BM 1957, 8-5, 1.
13. Penny of Edward the Elder 899-924. Hand type, [E]alhstan. *BMC AS II*: no. 107.
14. Penny of Eadmund, 939-946. Two line type, Mana. *SCBI 34 BM*: no. 348.
15. Penny of Eadred, 946-955. Canterbury (unsigned), Ælfric. *BMC AS II*: no. 493.
16. Penny of Eadgar, 959-975. Two Line type, Igenc. *SCBI 34 BM*: no. 935.
17. Penny of Eadgar, 959-975. East Anglia, Norbert. *SCBI 34 BM*: no. 1180.
18. Penny of Cnut, Viking king of York, c.897-c.910. Uncertain mint, Cunnetti. *BMC AS I*: no. 986.



L: 153 mm (reduced)

6



7



8



9



10



11



12



13



14



15



16



17



18

