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**Early Anglo-Saxon weaponry from  
Saltwood Tunnel, Kent**

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All artefact catalogue descriptions and illustrations are included in the illustrated grave catalogue

## 1 INTRODUCTION

The early Anglo-Saxon weapons from the three Saltwood cemeteries include swords, shields, angons, arrowheads, spears, *seaxes* and large knives. The *seaxes* and large knives are included with the remainder of the knives from the cemeteries and are briefly discussed in a separate text (Riddler, Cameron and Marzinzik 2006). However, they are described here in more detail, in order to provide a complete overview of the early Anglo-Saxon weapons. The discussion of weapon combinations at Saltwood can be found in Riddler and Trevarthen 2006 and the metallurgical analyses of the weapons are described in Gilmour 2006, parts of which are also summarised here.

## 2 SWORDS

*by Barry Ager*

### 2.1 Overview of the swords

Eleven swords were found in graves C1048, C1081, C1145, C1163 and C6653 within the Central cemetery, in graves C3779, C3826, C3944, C3885 and C4665 in the Western cemetery and W1767 in the Eastern cemetery. They are almost all of the long, narrow-bladed, double-edged Behmer type VI (Behmer 1939, 121-73), and with a pointed tip, except for grave C6653, which is rounded. Early Anglo-Saxon swords were essentially rather clumsy, overarm hacking and cutting weapons with a low point of balance (Hill and Thompson 2003, 158). Six of the eleven have only simple iron pommels and lack elaborate hilt or scabbard-fittings, but the sword from grave C1145 (Fig. 150) has a pyramidal copper-alloy pommel of Frankish origin, the two from graves C3779 and C3826 (Figs. 88 and 91) have ribbed, copper-alloy scabbard mouthpieces, the continental sword from grave C1081 (Fig. 141) has a decorative, nielloed silver pommel and copper-alloy guard-plates, and the sword from grave C3944 (Fig. 97) is a high-status Kentish ring-sword with copper-alloy horse-harness pendants apparently reused on the baldric. Although the sword from grave W1767 appears from the surviving remains to be of simple type, this belies its high-quality pattern-welding; a small *seax* was found alongside and parallel to one edge of the blade, with its tip pointing oddly towards the head end of the grave, and may have been in a sheath attached to the scabbard. At least nine of the blades are pattern-welded, as noted by Gilmour (2006). The organic hilt and scabbard remains are discussed below by Esther Cameron.

## 2.2 Position in grave

It is in most cases possible to determine broadly on which side of the body the sword lay, although the precise relationship is generally harder to ascertain because of the poor survival of the skeletal remains. All were found on the body's left, in agreement with general Anglo-Saxon practice, ie on the side on which they would have been worn in life, although at a high level (West 1988, 8; Härke 1992, 127). The ring-sword (grave C3944) partly overlay the upper left leg and the sword from grave C3779 may have been similarly placed, although the evidence is less clear (Figs. 88 and 96). As far as it is possible to tell, most were placed with the hilt at the level of the upper arm or shoulder and the blade reaching to the thigh or knee.

The swords were mostly still in their scabbards when buried, but there is very little surviving evidence for any sword-harnesses, apart from the horse-harness pendants that appear to have been reused on a leather baldric or strap and were found close to the blade of the ring-sword in grave C3944 (Figs. 97-8), and the possibility of a sword belt having been slung around the scabbard on burial in grave C3826 (Fig. 91). Buckles from graves C1145 and C1163 may be from sword belts.

## 2.3 Blade dimensions

Overall sword lengths, including tang and pommel, range mainly between 870 – 940 mm, except for one shorter weapon of 795 mm (grave C1145), although in several cases dimensions were difficult to measure, and sections to draw, because of fractures and heavy concretion. Four of them measured about 920 mm long, perhaps indicating a degree of standardisation (C1048, C3944, C3885 and C6653)(Figs. 136, 97, 93 and 208). Blade widths, measured at the upper ends, range between 52 – 58 mm, showing that the swords are of the narrow-bladed type, and it is interesting to note that both the narrowest and widest swords (C3779 and C3826; the former 58 mm wide and tending towards the lower end of the range of the broad-bladed form typically found on the continent, with widths in the region of 60 – 65 mm according to Behmer *op. cit.*, 53), have corrugated, copper-alloy scabbard mouthpieces for strengthening the opening of the scabbard. Widths were measured again at about 150 mm from the tip, where possible, and indicate that four or possibly five of the blades are more or less parallel-sided, with a difference of only 2 mm or less (C1048, C1081, C1163, W1767 and possibly C1145), while six show slight tapering, varying from a difference of 4 mm to 6 mm, which would have made them a little more versatile as a combat weapon than the parallel-sided form by raising the point of balance (Hill and

Thompson 2003, 158). The thickness could be measured in only eight examples, at 6 – 7 mm, but this appears to be noticeably greater than at Dover Buckland II, where the maximum was only 4 mm, or early Anglo-Saxon swords with surviving original surfaces in the British Museum collection, eg from Waterbeach and London, between 4 – 5 mm. This dimension is more susceptible, however, to differential corrosion or resultant expansion than the width and it seems likely that the Saltwood examples have expanded in the ground.

## **2.4 Construction of blade**

The remains of scabbards, soil concretion and corrosion products largely obscured the surfaces of the swords and no fullers were observed, but they may, nevertheless, be present in some cases. Indeed, it has been suggested recently that they may have been more prevalent than is usually stated (Hill and Thompson, 2003, 159). They would have served to make the swords lighter and more wieldy (see Ager forthcoming).

## **2.5 The hilt**

Except for the two more elaborate swords from graves C1081 and C3944, the hilts comprised a grip and upper and lower guards of organic material – probably horn like most of the swords from Dover Buckland – which were held in place by simple iron or copper-alloy pommels of various forms with the ends of the tangs burred over the top (Cameron 2000, 34; Ager forthcoming).

The full length of only six tangs could be satisfactorily measured at between 110 mm to 130 mm, but the grips between the upper and lower guards range mostly from 91 mm (the ring-sword from C3944) to 96 mm (grave C4665)(Fig. 113), all indicating a single-handed grip. On three of the swords false, rounded midribs can be seen on one or both sides of the tangs: on grave C1145 they are 5 mm wide and survive only at the top ends, continuing under the remains of the upper guards; on grave C3944 they appear on one side only; and on grave C6653 one rib, which widens at the lower end, runs at a slant for most of the length and under the upper guard, while there is a shorter rib surviving only at the top on the other side (Figs 84, 139 and 178). The features were noted for the first time ever on Anglo-Saxon swords from the cemetery at Dover Buckland II (Ager forthcoming), but, although few occurrences have yet been recorded, they seem to have been fairly widespread. The arcs of the ribs are mineral-preserved organic remains which, following investigation by Fleur Shearman of the British Museum's Conservation Laboratory, appear to have been caused by grooves cut on the inside of the horn of the grip during fitting and might have been for truing the components of the hilt. There are no wooden packing strips surviving on the Saltwood swords like those observed on the Dover swords, or the

small wedges of an amorphous substance, probably a resin, found between the pommel and tang of the sword from Watchfield, Oxfordshire, grave 2 (Cameron 1992, illus. 78).

Two different types of guard were noted. In the first type the surviving metal lower plates indicate a ‘sandwich’ construction of a pointed oval bar of organic material, such as horn or wood, riveted at the ends between two metal plates (grave C1081 and the ring-sword, grave C3944). The copper-alloy lower plates of both guards of grave C1081 are flat and 2 mm thick (traces of the outline of the slot cut in the central bar of the lower guard for the shoulders of the blade are preserved on the top of the lower plate), while the silver ones of grave C3944 have upturned edges and were probably originally gilded (Figs. 141 and 97). The flat upper plates of both swords must have been only of thin sheet as they have entirely corroded away. A conjectural reconstruction by Hill and Thompson illustrates the possible form of a hilt like that of grave C1081 (2003, fig. 10), while the ring-sword, though lacking a metal hoop round the base of the grip, may be broadly compared with the swords from Bifrons, grave 62, and Gilton, Kent, no. 6650 (Evison 1967, fig. 8a and c). The lower guards are both longer than the upper ones; lengths, 93 mm and 60 mm (grave 1081), and 78 mm to 63 mm (grave C3944). They project slightly on either side of the blade, though would have offered little protection to the hand.

The second type of guard appears to have consisted of straight, probably ovoid bars of organic material alone, and a transverse grain can be clearly seen in the guard remains of graves W1767 and C3826 (Figs. 62 and 91). In all cases where traces of both guards remain, the lower one is between 1 mm – 5 mm deeper than the upper one.

The lower end of the grip of the sword in grave C3779 has a thin, concave-sided, trapezoidal, copper-alloy mount riveted to one face (length, 27 mm; height, 20 mm; see ‘sword fittings’ below); part of another strip has broken away (Fig. 88).

Several types of pommel occurred. Three of the swords have small, convex-topped, ovoid button pommels of iron from 14 to 20 mm long and 6 to 12 mm high (graves C1163, C3779 and C3885), as perhaps did graves C3826 and W1767, although their pommels are really too corroded to be certain. Iron button pommels are common on 6th/early to mid-7th-century Anglo-Saxon and Frankish swords (Koch 1977, 95, Taf. 26, 17; Ager forthcoming). Two swords from Saltwood have short, bar-shaped iron pommels, the one on grave C4665 being sub-rectangular, and on grave C6653 rectangular. The bar pommels occur to date on mainly 5th to 6th-century Anglo-Saxon swords and on one late 7th-century *seax* from Polhill, Kent (Ager forthcoming).

The sword from grave C1048 has a longer, low, convex-topped, iron pommel with round ends (length, 53 mm; width, 10 mm; height, 9 mm). The earliest examples of this form appear to be continental Germanic, eg from Pleidelsheim, Germany, graves 15 and 44, of phase 5 (*c* 530-

555; Koch 2001, Taf. 9, 2 and 20A, 1). Anglo-Saxon examples occur in phases 3 and 4 of *c* 575-650 at Dover Buckland I, graves 27, 33, 71, and 96a (the latter a Rhineland import with wire-inlaid guards) (Evison 1987, fig. 15: 27, 3; 20: 33, 2; 38: 71, 1; and 45: 4a-b). The form appears to reflect the trend towards longer, low, copper-alloy pommels with or without animal-headed terminals on later 6th-century Merovingian swords and continues into the second third of the 7th century on the Continent, too, as at Neresheim, Germany, grave 115, (Koch 1977, 95; Knaut 1993, Taf. 22: 115, 1).

The sword from grave C1145 has a low, unriveted, hollow, pyramidal, copper-alloy pommel with slightly convex long sides (length, 30 mm; width, 15 mm; height, 9 mm). The end of the tang passes through a slot in the top and is burred over. This type of pommel is both widespread and long-lived, occurring mainly in the Rhineland, southern Germany and northern Italy, with a few from Anglo-Saxon and Scandinavian graves and other areas (Menghin 1983, 76-7, 319-20, Liste I. 3, Karte 4). Dates range from the 5th century into the first half of the 7th, although mainly around AD 600, and English examples are known from the late 5th-6th centuries, with a more cocked-hat form lasting into the early 7th (Ager forthcoming). The very limited distribution in southern England strongly suggests that the Saltwood grave C1145 sword is a Frankish import.

The sword from grave C1081 has a hollow, silver, 'cocked-hat' pommel of Frankish type, with a slot in the top through which the end of the tang passes and is burred over; the integral, capped 'rivet tubes' on either side of the ends of the pommel are dummies (length, 48 mm; width, 15 mm max.; height, 16 mm). Although the pommel is not from a ring-sword, its scroll decoration in two registers on the less worn side, with grooves for niello inlay (surviving in the borders of interlocking triangles on the other side), transversely ribbed shoulders and double-grooved terminals relate it to the pommel of the late 6th-century sword from Orsoy grave 3, Germany (Evison 1967, 79, pl. 12b; Menghin 1983, 59, 250). Like 7th-century examples of English ring-swords, however, the earlier tongued shoulders have become flush (Evison 1967, 77), while the ribbing has expanded over most of the width of the shoulder. The sword has no Anglo-Saxon parallel and represents a continental import, probably dating from around the end of the 6th/early 7th century.

The silver-gilt, 'cocked-hat' pommel of the ring-sword from grave C3944 is of a different type, forming a cap over the end of the tang; it is secured to the upper guard by dome-headed silver rivets in the corners and gilding survives in three grooves along the base; length, 39 mm; height, 17 mm. The thicker guard rivet at one end has a bowed head resting against the shoulder of the pommel and interlocking with a moveable silver ring with faint traces of small, apex-to-



apex triangles punched round its girth. Comparison has already been drawn between the hilt-fittings of this sword and two other Anglo-Saxon ring-swords. The pommel's stepped-in shoulders with broad-based, raised tongues are features of a mainly Kentish group of the last three quarters of the 6th century, belonging to Menghin's Bifrons-Gilton type (1983, 312-15, Karte 2), possibly all made in the same workshop, with gilded silver rings and pommels. These features also show that the Saltwood sword is a typologically developed form of Evison's stage 1b (Evison 1967, 72-3). The distribution has recently been extended between the Thames and Humber by the discovery of a ring-sword pommel from Congham, Norfolk, and a sword ring from Lissington, Lincs. (Evans and Geake 2000; Evans 2003, fig. 70). It is thought that the custom of fitting non-functional rings to costly sword-pommels is probably of early 6th-century Frankish origin, later imitated in Kent and Scandinavia, and that the rings would have been given by a king or military leader to members of his personal retinue (the Anglo-Saxon thegns or Frankish *antrustiones*) as a reward for military or possibly other service. They would have been worn as badges of office or high rank, as well as symbols of the mutual bond of loyalty, and it is likely that both ring-pairs and completely fitted ring-swords were produced in a few central, royal or elite workshops for distribution by the king (Evison 1967, 63, 80-81; Steuer 1987).

## 2.6 Sword fittings

The sword from grave C3779 has a concave-sided, trapezoidal metal mount riveted to one side of the lower end of the grip and possible remains of another on the opposite side; the concave profile indicates that the grip expanded above it. Grip mounts are uncommon on Anglo-Saxon swords apart from a few with metal hoops, wire rings, or sleeve rings of varying width, the latter all on late 6th/7th-century swords, or forming additions of that date to earlier swords (in the case of Coombe), eg from Crundale Down, Dover Buckland 1, grave 98, and Coombe, Kent, from the early 7th-century grave 16 at Alton, Hampshire, and the deep, filigree-decorated gold bands of an early 7th-century hilt said to have been found in the Market Rasen area, Lincs. (Behmer 1939, Taf. 45, 1; Evison 1967, fig. 12 and 1975, 306-9; Evison 1987, fig. 46: 98, 1; Evison 1988, fig. 27: 16, 1; Evans 2004, fig. 58.5). These belong to Menghin's Beckum-Sutton Hoo type, of around 580-620, which occurs mainly in Frankish and Lombardic regions (Menghin 1983, 90-2, 136, Karte 9). The mount from Saltwood, however, appears to be more closely related in form to the U-sectioned, lateral grip-mounts in copper-alloy or silver of Menghin's Snartemo-Roes type, which is almost entirely Scandinavian and lasted from the late 5th century into the 7th and later (Menghin op. cit., 92, 136, Karte 9). The 7th-century, filigree-decorated gold mounts of the hilt

from Cumberland share features with both types, combining narrow strips with high, concave-profiled mounts on either side at the base of the grip (Behmer 1939, Taf. 2, 3).

## 2.7 Scabbards

Most of the blades have mineralised organic remains of scabbards adhering, principally of the wooden boards and possibly including leather. Two of them have horizontally ribbed, copper-alloy mouthpieces (graves C3779 and C3826). The one from grave C3779 has eight low ribs on the front and sides, but is flat at the back, where the metal sheet overlaps slightly and is fastened by a copper-alloy rivet at the top (a rivet at the bottom may be missing); width, 62 mm; height, 18 mm. It belongs to Menghin's predominantly southern Anglo-Saxon Kempston-Mitcham type of gilded copper-alloy, datable *c* 500 – 6th century. It is found south of the Ouse – Lower Severn, with sporadic occurrences also in Scandinavia and on the Continent; Cameron suggests examples of one-piece construction, as here, are a later form of the type (Menghin 1983, 98, 138, Karte 12; Cameron 2000, 42-3). Further English finds, including one from Apple Down, West Sussex, grave 12A, are noted by Down and Welch (1990, 91-2, fig. 2.18: 12A, 1, pl. 46e). The front of the mouthpiece from grave C3826 consists of a band decorated with six sharp, transverse ribs alternating with similar low ribs in between and is riveted to a plain strip passing round the sides and back; width, 61 mm; height, 24 mm. Gilding survives in the grooves. As it is of copper-alloy, it belongs to the same Kempston-Mitcham type, although the distinct style of ribbing also occurs on the mainly south-west German, silver, Entringen-Sindelfingen type of similar date, two examples of which are known from Kent (Menghin *op. cit.*, 98, 138, Karte 11). The possibility of a repair makes the association between the sword and scabbard a little uncertain: as Theuvs and Alkemade stress (2000, esp. 424-7), swords and their scabbards were not necessarily made in the same workshops and, at some stage in its 'life', a sword may have acquired a scabbard made originally for another sword, with implications for typology and dating. The three fragmentary, U-sectioned, copper-alloy edge binding strips from either side of the scabbard in grave C3826, just below the mouthpiece, are discussed in 'Methods of suspension' below.

Five swords preserve traces of tape or braid bindings round the tops of the scabbards (graves C1048, C1081, C3944, C6653 and W1767), in the case of grave C1048 round approximately the upper 150 mm and in grave C1081 round the upper 127 mm, possibly originally securing the top end of a wooden bridge for a sword belt (see 'Methods of suspension' below). On the sword from grave C3944 a zone of cords only 8 mm high survives; on grave W1767 the binding is visible on one side only, just 42 mm remaining; and on grave C6653 only vestiges can be seen.

Three scabbards appear to have held knives or a *seax* in addition to the swords, possibly in pockets in the scabbards, or in sheaths attached to them: graves C1081, C1163 and W1767 (see *Large Knives and Short Seaxes*, below). The knives in graves C1081 and C1163 are visible in the x-radiographs: the one from grave C1081 is about 145 mm long with its tang end 70 mm below the lower guard of the sword, while that under the sword in grave C1163 is about 115 mm long, pointing upwards (Figs. 140 and 153). The small *seax* in grave W1767 is about 320 mm long and 38 mm wide, with its back curving down to meet the edge, and is fixed by corrosion products alongside the edge of the sword, pointing upwards and with its point 90 mm below the top of the latter (Fig. 62). The tiny, 12 mm square, ?copper-alloy buckle loop of Marzinzik's type I.6 found about 240 mm below the top of the sword scabbard next to the handle of the knife shown in the X-radiograph and accreted to the opposite edge of the blade is possibly from the sheath of the knife (or perhaps from a pouch), as is likely with northern French examples (Marzinzik 2003, 25). It seems to be too small to be connected with the suspension of the sword scabbard, although different types of buckle from other cemeteries are, eg Alton, Hants, grave 16, Morning Thorpe, Norfolk, grave 218, Pewsey, Wilts, grave 70, etc. (examples noted by Marzinzik, in lit., 18/12/03).

The scabbard set of sword and short *seax* can be compared with an example from Pleidelsheim grave 44, Germany, with the *seax* parallel under the sword and similarly pointing upwards (Koch 2001, Abb. 38: 44, 2). It would therefore appear that, unless there was some special ritual attached, the *seaxes* could have been worn in this position, presumably secured by a strap or other fastening to prevent them falling out. A knife was also found under the middle of the sword-blade in grave C and a *seax* (probably Frankish) between two putative knives in grave 93, both at Dover Buckland I, (Evison 1987, 214-5; 31, fig. 43, 7). These knives seem rather unlikely to have been simply domestic, as they were worn combined with the swords and *seax*; they were probably functional, maybe like the sets of eviscerating knives associated with 18th-century German hunting swords (Mann 1962, pl. 136, A703-704).

## 2.8 Methods of suspension

Early medieval sword-harnesses have been discussed by Menghin (1973a; 1983, 102-122), but there is little surviving evidence at Saltwood for the means of suspension. In the case of the ring-sword from grave C3944 there appears to have been a leather strap found alongside the sword and mounted with reused, decorative horse harness-fittings (A-C on Fig. 98, but not shown in the grave plan), which may all be the remains of a sword-harness, and an iron ring, which is comparable with a small iron ring found beside the sword in Mill Hill, Deal, grave 93, and

possibly from a sword belt (Parfitt and Brugmann 1997, 89, fig. 50e). Continental horse harness-mounts, for example, were sometimes reused on belts, or as items of jewellery (Steuer 2003, 392). The two small, silvered, disc-headed rivets (*ON 2060*) may be for attachment of the harness to the scabbard by means of a riveted leather loop, as they are shown in about the right position for this on the grave plan (cf. Menghin 1973a, Abb. 2, 1; 1983, Abb. 61, 1a-b).

Three fragmentary, ribbed, U-sectioned, copper-alloy edge binding strips (a-c), one with a riveted pin across the gutter (a), are preserved from the scabbard of the sword in grave 3826 (Fig. 91). They were found during conservation on either side of the blade just below the mouthpiece, with (a) on one side and (b-c) on the other. As (c) lay partly alongside (b) it is uncertain if these two pieces were originally joined, although it seems likely as then there would be one strip on each side, ribbed at the ends and plain in the middle. The pairs of bindings without any rivets for attachment to the sword belt occur on the scabbards of swords of Menghin's type V, with coin-dated examples of the first three-quarters of the 6th century and others without coins possibly from the end of the 5th as well as into the early 7th, the type being found occasionally in England south of the Thames, but mainly in northern France (1983, 170, Abb. 79, 91, and 94). No rivets for attachment to a sword belt survive, so the scabbard would have been hung in a leather loop sewn directly to a belt and passing over the edge bindings (Menghin 1973a, Abb. 3; and 1983, Abb. 63). It has been suggested that in sword graves 'where there were no belt fittings the leather baldric must have been sewn or tied' to the scabbard (Evison 1987, 25). There is also copper-alloy staining 125 mm below the top of the mouthpiece and about 25 mm wide, which is perhaps either from a decorative band or from a strip associated with a bridge (cf. Menghin 1983, Abb. 63), but nothing is visible in the x-radiograph. The buckle pin (*ON 2002*), which belongs with the separate buckle in grave C3826 found on top of the sheath, perhaps indicates a man buried with a belt slung around the sheath rather than round his body.

The buckle in grave C1145 appears to be from a belt and the type of buckle would fit such use, while the simple iron buckle with a plate (*ON 1159*) in grave C1163 was found close to the sword hilt and quite possibly came from a belt deposited nearby (Marzinzik in litt. 6/9/2004; 24/11/2004).

The sword-scabbard in grave C1081 shows a shallow, transverse, flat-bottomed furrow 14 mm wide at the base of the binding tape, which may have been for a suspension strap passing through a wooden bridge secured by the binding and leather of the scabbard (pers. comm. Fleur Shearman).

## 2.9 Imports

The probable continental, Frankish origin of the sword with the silver pommel from grave C1081 and of the sword with a pyramidal, copper-alloy pommel from grave C1145 has been discussed with the other hilt-fittings above. The small, square buckle from grave W1767 appears to represent a northern Frankish type, and the sword and *seax* combination in the grave, with the short *seax* pointing upwards, may reflect continental fashion. But, as there are no other certain ‘imports’ from these graves, the owners may have been Anglo-Saxons who had obtained the swords either through gift exchange from abroad, or as rewards for military service with a Frankish ruler, rather than through a commercial trade in weapons. The scabbard edge bindings of the sword from grave C3826 appear to show influence from northern France, but probably as imitation rather than import, since its Kempston-Mitcham mouthpiece type is widely found in southern England, but is rare on the Continent.

## 2.10 Dating implications

The ‘heirloom factor’ noted by Baldwin Brown (1915, 207-9) is probably more applicable to swords than to any other class of early medieval artefact, with significant implications for dating associated grave groups and for the degree of completeness of buried weapon sets. The epic poem *Beowulf* describes the swords of its heroes as ‘ancient heirlooms’, or the ‘ancient sword(s) of giants’ and 7th-century Kentish laws refer to the practice of heirloom (Davidson 1998, esp. 125, 129, 142-7; Härke 2000). There are several references in Old Norse sagas, too, to famous Viking-period swords being passed down through several generations (usually in a family) and even being retrieved from burial mounds for reuse; in the shorter term some late Anglo-Saxon wills also refer to the bequest of swords to relatives or kinsmen and a number of gifts of swords are mentioned in other early medieval sources (Davidson op. cit., 118-121, 143, 171-175). There is therefore good reason to believe that some early Anglo-Saxon prestige swords could have been a century or more old before being buried and there may be instances when swords at Saltwood could considerably predate the date of burial and other material in their graves, or when weapon sets are incomplete because items have been bequeathed to heirs. Although the cemetery as a whole may post-date *c* 525, and the dating of the swords is not seriously out of kilter with the general phasing of the cemetery, it is therefore not possible to say that any potentially late 5th-century swords, which may also range into the 6th century, do not predate the beginning of the cemetery. If, on the other hand, the sword is the latest object in the assemblage, some of the sword graves might possibly date to a slightly later phase than the dating by other associations would appear to indicate; although, as at Dover Buckland, the likelihood is probably not high.

With these provisos, the following date ranges are based on the typological evidence detailed above. The sword from grave C1145 is late 5th – 6th century; those from graves C3779, C4665, and C6653 date to the late 5th – 6th/perhaps early 7th century (especially 3779); the ring-sword from grave C3944 is mid to late 6th century; those from graves C1163, W1767, associated with a small buckle of broadly early 6th – late 7th-century date (Marzinzik 2003, 25), those from graves C3826 and C3885 of the 6th – early/mid 7th century; and those from graves C1048 and C1081 date to the late 6th – early/mid 7th century.

### **2.11 Sword graves in Kentish cemeteries**

Swords are nearly always present in the cemeteries of East Kent (Härke 1992, 105) and the proportion of sword graves in the Saltwood cemetery, at about 5.1%, is close to the average for the region of 5.2%, and only slightly lower than at Mill Hill, Deal, with 5.3% (Ager forthcoming), although this is quite high for England in general. At the recently excavated cemetery at Croydon, Surrey, the proportion is also comparable at 5% (McKinley 2003, 35). In Kent itself only Sarre still stands out as exceptional in this respect (even on the lowest crude estimate of 10%, the highest being 20%), and so may have been a trading centre under royal military protection, since Dover Buckland overall, combining the data for both excavations, can now be seen as rating not much above the average, at 5.8%.

## **3 SCABBARDS OF SWORDS**

*by Esther Cameron*

### **3.1 Introduction**

Although the primary purpose of scabbards is to protect and enclose blades and to provide connecting points for belt straps, the design of Early Anglo-Saxon scabbards suggests that they were regarded as more than utility objects. Just as the elaborately forged blades and decorated hilts are clues to the special status of swords in Anglo-Saxon society, scabbards were also designed to impress. They were made by craftsmen to a basic design that hardly varied over three centuries using wooden lathes lined with sheepskin and covered with skin or leather. At least some of them were embellished with metal fittings, relief decoration and various sorts of bindings.

### 3.2 Construction materials

The wood species of ten scabbards was identified as *Betula* sp. (birch), *Fagus* sp. (beech) and *Salix/Populus* spp. (willow or poplar), of which *Salix/Populus* had the highest frequency with a count of six.<sup>1</sup> A preference for willow was revealed in a survey which showed that 64% of Early Anglo-Saxon scabbards were made from this wood although birch and beech were also used occasionally, and that this pattern of wood use was consistent over time (Cameron 2000, 34). The lathes were thin, 1.5 mm or less, and in most cases featureless, but those from graves 1048 and 1081 may have been shaped at the upper end to give a slight undulation to either side of a central trough on the front of the scabbard. Seven other scabbards from 6th/7th-century contexts in Kent, Essex, Buckinghamshire and Suffolk also show this peculiar feature.<sup>2</sup>

Strips of sheep or lambskin were used to line the inner surfaces of wooden scabbard-lathes but these rarely survive burial except as traces. The Saltwood scabbards are no exception, but mineralised animal hair and void layers between the sword blade and the wooden lathes indicate that all eleven sword scabbards had been lined, and the hair of the lining from grave 1048 has been identified as sheep.

Evidence for skin or leather coverings of the wooden lathes consists of small patches of shrivelled skin (graves C3826, C3944, C3885 and W1767) and serpentine seams on the backs of scabbards (graves C1048 and C3779).

### 3.3 Relief decoration

A length of twisted cord, positioned centrally, lengthwise on the wooden lathe from grave C1145 (Fig. 150), may be a remnant of a decorative technique known as foundation moulding. The purpose of the cord, which would have been glued to the wood, was to raise a line in the skin that covered it. Traces of the same technique and design are also visible on six other scabbards from Kentish cemeteries, namely Dover, Buckland grave 27; Deal, Mill Hill grave 91; Howletts (BM1936.511.54 and BM1936.511.166); Faversham, King's Field (BM955.70) and Finglesham

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<sup>1</sup> Mineralised archaeological samples of willow and poplar are usually presented together in this way because it is difficult to tell them apart. However, willow would normally be selected for wood-working in preference to poplar because of its superior properties.

<sup>2</sup> Howletts, Littlebourne, Kent, grave 19 (BM1936.511.75) and another without context (BM1936.511.54); Dumpton Park, Broadstairs, Kent, grave 71; Mucking, Essex, grave 618; Broomfield, Essex (BM1894.1216.4); Taplow, Buckinghamshire (BM1883.1214.4); West Garth Gardens, Suffolk, grave 51.

grave 204. The technique is associated with finely crafted leather-on-wood, such as the decorated scabbard from Brushfield, Derbyshire (Bateman 1861, 68-70), and the front cover of the binding of the *Gospel of St John*, enclosed in the coffin of St Cuthbert in the late 7th century (Webster and Backhouse 1991, 121).

Earlier forms of foundation moulding seen on late fifth and early 6th-century scabbards such as those from Spong Hill, Norfolk, grave 40; West Garth Gardens, Bury-St-Edmunds, Suffolk, grave 51 and Watchfield, Shrivenham, Oxfordshire, grave 2 use wooden ridges produced in the scabbard lathe by carving, instead of cord.

### 3.4 Straps and suspension

The narrow strap that crosses the back of the scabbard from grave C3826 was probably for suspension. Its position near the upper end, and a buckle found mid-length at the edge of the scabbard, suggest that there were two points of attachment each involving a strap (Fig. 91). This method of suspension has not been systematically researched in England but in the Frankish territories it is associated with 6th-century graves (Engemann *et al* 1991, 172-88 and fig 188).

The wooden strap-slide on the front of the scabbard from grave C1048 is a feature that rarely survives. Only the upper part is visible and this is incomplete, but it appears to widen towards the upper end. Two other strap-slides with splayed ends, on scabbards from Clobb's Row, Broomfield, Essex,<sup>3</sup> and St Mary's Stadium, Britannia Road, Southampton (grave 5537, item 516) (Birbeck 2005, 46 and figs 27-9), are in each case from 7th-century graves. Another example from Wickhambreaux, Kent has a more rectangular outline, but associated finds suggest that this grave also dates from the 7th century.<sup>4</sup> Strap-slides of wood on Frankish scabbards have only been found in 7th-century graves.

### 3.5 Metal fittings

At Saltwood, two metal fittings positioned the upper ends of scabbards from graves C3779 and C3826 belong to a relatively large and well-defined 'Kempston-Mitcham' group found in 6th-

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<sup>3</sup> The grave also contained a gold and garnet pyramid, buckle fragment, shield-boss, spearhead, knife and fragments, copper-alloy pan containing two drinking horns, two glass vessels and two drinking cups. There were also two buckets, an iron cauldron, lamp and a pot (Cameron 2000, corpus 59).

<sup>4</sup> A shield-shaped buckle of copper alloy decorated with garnet and gold; a scabbard stud with long U-shaped shank, white paste disc with garnet and gold decoration; a copper-alloy bowl and blue glass claw beaker (Cameron 2000, corpus 295).



century contexts in south-east England (Menghin 1983; Cameron 2000, 42-3, figs. 22–3). These are normally of copper-alloy gilt with transverse grooves and ridges, constructed either in one piece with ends overlapped on the back, or from two pieces with a soldered plate across the back. Six ‘Kempston-Mitcham’ type scabbard-fittings have been found in Scandinavia, two in Germany and one in Belgium (Menghin 1983). The fitting from grave C3779 was covered in corrosion and soil when examined and no gilding or further evidence of decoration was visible, but its design is similar to three ‘type’ fittings from Mitcham, Surrey (Cameron 2000, corpus 310, 311 and 312). The front of the other band, on the scabbard from grave C3826, consists of a substantial gilt copper-alloy casting with angular ridges similar to other fittings from Finglesham, Kent (grave 204) and Kempston, Bedfordshire (BM91.624.75). On the back is a thin metal strip with punched decoration paralleled by a scabbard fitting from grave 766, Mucking, Kent, and attributed to the 6th century. The two fittings from the edges of the scabbard are typical of a group of narrow reinforcing strips with ribbed decoration distributed through Kent, Essex, Suffolk, Sussex, Hampshire and Wiltshire, which seem to have 6th-century associations. One such example from grave 20, Petersfinger, Wiltshire was reportedly found with a Kempston-Mitcham type fitting (but has since been lost) (Leeds and Shortt 1953, 14 and pl 1).

### 3.6 Bindings

Eight of the Saltwood scabbards were bound with woven braids and twisted cords, and in one instance with narrow strips of woody material, as yet unidentified. The bindings were applied to the upper end of the scabbard on top of the layer of skin or leather that covered the wooden lathes, and occupied up to one third of its total length. Although in most cases the bindings only survive as small traces, evidence from other cemeteries, such as Sutton Hoo, suggests that their original thickness might have been substantial and probably built up in layers.

The most common type of binding is of braid or woven tapes, closely overlapped and sometimes tied at intervals with fine cords. Those from graves C1048, C1081, C3885, W1767 and possibly C1163 have evidence of braid only, while those from graves C6653 and C3779 have traces of cords as well. Eleven other examples of this feature on scabbards from Kent are from the cemeteries of Howletts, Faversham, Buckland, Wickhambreaux, Broadstairs, Sarre and Coombe. Of the eight other known examples, two are from Sutton Hoo, Suffolk; three from Broomfield and Mucking, Essex; one from Taplow, Buckinghamshire; and two from Barnet and Twickenham, London (Cameron 2000, 40). Those from secure contexts are dated to the late 6th or early 7th century.

The binding on the scabbard from grave W1767 is an unusual combination with at least two layers of ‘bast’ binding at the mouth of the scabbard and a braid binding further down. Other examples of a wood-like substance being used as bindings on scabbards are from Sarre or Bifrons, Kent<sup>5</sup> and Snape, Suffolk (grave 1800), a 7th-century boat-burial (Filmer-Sankey and Pestell 2001).

The scabbard binding from grave C3944 is a third type – an orderly layer of cords, similar to ‘whipping’, which is also present on scabbards from Howletts, Kent (BM1918.78.13),<sup>6</sup> and Sutton Hoo, Suffolk (mound 17), the latter probably dating from the early 7th century.

### 3.7 Conclusion

Evidence from Saltwood and from an earlier survey indicates that there was an Anglo-Saxon fashion for binding scabbards in the late 6th and early 7th centuries. The position of the bindings suggests that if a practical purpose was served it related to scabbard suspension, possibly to secure the strap-slide, and it may be that the jewelled discs on cylindrical white beads and pairs of garnet-inlaid pyramids that are sometimes found with them were all part of the same system (Evison 1987, 24–5; Bruce-Mitford 1978, 564–582; Menghin 1973*a* and *b*; 1983). The distribution of scabbards with bindings in south-east England may reflect the extent of Frankish influence in Anglo-Saxon England during the late-6th century. But although scabbards with bindings are found in Frankish cemeteries of the Rhineland the evidence there suggests that cords and bast strips were preferred to woven braid.<sup>7</sup> Interestingly, the bindings of textile and bast that cover part of the decorated scabbard of the Vendel sword from Valsgärde II (published as Valsgärde 8) are interpreted as evidence of refurbishment (Arwidsson 1954, 62-3, 103 and taf 20-1).

The dating of scabbards by strap-slides or ‘undulated wood’ has been confused by the fact that the same features appear on Danish scabbards allegedly from 4th and 5th-century contexts (Cameron 2000, figs 6-7). In England, however, wooden strap-slides, foundation

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<sup>5</sup> The sword in Maidstone Museum (KAS827) is without context but known to come from one of the two cemeteries Sarre and Bifrons.

<sup>6</sup> Cameron 2000, corpus 29. This sword is without context but the cemetery is estimated to terminate in the late-6th century.

<sup>7</sup> Cord bindings are known from grave B, Concevreux, Aisne, France; grave 102, Unterthürheim, Bayerisch-Schwaben; grave 84, Oberflacht, Germany. Bast bindings are known from grave 34, Oberflacht; grave 85, Marktoberdorf, Bayern; Beckum, Fürstengrab, Nordrhein-Westfalen; grave 674, Altenerding, Bayern. A textile binding is recorded from grave 17, Bulach, Switzerland.

moulding with cord, and wooden lathes shaped at the upper end are features that appear to be associated with scabbards of the late 6th and early 7th centuries alone. Sometimes they are found to have been partly hidden by the addition of bindings.

*Table 1: Features on scabbards*

Grave	Phase	metal fittings	strap	strap-slide	undulated wood	foundation moulding	Binding
W1767	3						■
C1048	3b-4a				■		■
C1081	3b-4a			■	■		
C1145	3b					■	■
C1163	4						■?
C3779	3b-4a	■					■
C3826	2	■	■				
C3944	3						■
C3885	3b-4a						■
C4665	3b-4a						
C6653	4b						■

## 4 SHIELDS

*by Stephanie Spain*

### 4.1 Overview of the shields

The remains of nineteen shields were recovered from fifteen burials at Saltwood. They range in date from the mid 6th to mid 7th centuries, though most are characteristic of the period 575 to 625. The earliest come from row graves and were positioned horizontally in the grave (graves C3944, C4680, W1767) but around the end of the 6th century the burial rite changed. Later shields were usually deposited vertically (C1031, C1048, C1081, C1145, C1163, C1286, C6643, C6653) and there was a move away from row graves in favour of more ad hoc family groupings in which shield burials were aligned with female and smaller unfurnished burials.

Three high status shield burials in the Central cemetery each contained two or three shields (graves C1048, C1081 and C6653)(Figs. 135, 143 and 209). Multiple shield burial is extremely rare in Anglo-Saxon England. The rich barrow burial at Taplow, Buckinghamshire, had three shields and its first quarter of the 7th century date and Kentish style grave goods are significant in light of the Saltwood burials (Campbell 1982; Webster and Backhouse 1991). Finds

from the only other case, at the unpublished Warren Hill cemetery in Suffolk, have gone astray but apparently consisted of two shields, a knife and type I2 spearhead (Dickinson and Härke 1992, 63; Swanton 1974, 88). Multiple shield burial is also unusual on the continent and in Scandinavia, but a number of cases at Vendel and Valsgärde in Sweden are believed to reflect Nordic single combat rules in which a warrior was permitted up to three shields due to the short life-span of the wooden boards in close fighting (Arwidsson 1942, 44; Dickinson and Härke 1992, 50).

At Taplow, two shield bosses were reportedly found in the north-east corner near the conjectured position of the head, though the grave had been severely disturbed and it is likely that some items had shifted from their original positions (Stevens 1884). A fragment from the third boss only came to light at a much later date when it was found stored with the remains of a barrel (L. Webster pers. comm.). This could be coincidence, but might suggest that the shield had leant against the barrel in the grave as in grave C1081 at Saltwood.

All the shield burials at Saltwood had at least one spear and eight were also equipped with a sword (graves C1048, C1081, C1145, C1163, C6653, W1767, C3944 and C3885). The high status graves C1048, C1081 and C6653 contained prestige items such as angons, horse harness, gaming pieces and bronze bowls and were provided with coffins. Grave C1145 also had a coffin, as well as a bucket (Fig. 150), and grave C6643 had a coffin and copper-alloy finger ring (Fig. 205). The remainder of the finds consist of buckles and knives, along with a pottery vessel in grave C1286 (Fig. 172), a glass vessel in grave W1767 (Fig. 62) and vessel mounts in grave C3885 (Fig. 94).

## 4.2 The shield fittings

Despite the poor condition of the shield fittings, the boss and grip types can be identified in most cases. A flattened iron fragment thought possibly to come from the cone of a boss is all that remains of the shield in grave W1423 and the truncation of grave C1145 removed the grip and the bottom of the boss from another shield.

Two fairly large bosses of Dickinson's group 3, both with copper-alloy disc-headed flange rivets, can be dated to around the middle of the 6th century and are similar to the three bosses from nearby Lyminge II (graves 1, 4 and 31) (Dickinson and Härke 1992; Spain 2000; Warhurst 1955). However, most of the Saltwood bosses are transitional between Dickinson's groups 3 and 6, dating to the late 6th or early 7th centuries. A large example with a broad strap grip (grave W1705) is almost certainly 6th century (Fig. 60), but those associated with narrow straight-sided strap grips, double-rivet board mounts and small knob-headed rivets are later and

probably belong in the 7th century with the group 6 boss (grave C1163)(Fig. 153), which is of a similar size (Spain 2000). Two similar bosses were found at Dover Hill, Folkestone (graves 5 and 18)(Richardson 1994).

Three examples of Evison's 'tall, straight cones' (graves C1031, C1081 and C6653)(Figs. 133, 143 and 209) fall within Dickinson's group 7 and would conventionally be dated to the second quarter of the 7th century (Evison 1963; Dickinson and Härke 1992, 21). However, this part of Anglo-Saxon shield boss chronology is currently under review and it has recently been suggested that this is a distinct type which may significantly pre-date group 7 (K.Høiland Nielsen pers. comm.). If so, it would be an alternative type contemporary with group 6, perhaps fulfilling a different functional role.

Each of the multiple shield burials produced a group 3b boss with large domed copper-alloy flange rivets (graves C1048, C1081 and C6653). Shields with bosses of this type may have been imported prestige items (Spain 2000) and of the two or three shields in each grave it was the 3b shield, positioned with the sword in graves C1081 and C6653, which was intended to display the personal status or affiliations of the deceased. The identical rivets on the 3b bosses in these three related burials indicate that they were contemporary and may even have formed a set. One has the tall wall, shallow convex cone and small disc-headed apex of 3b(ii), a distinctive variant within the group 3b bosses (grave C1048)(Spain 2000). Other examples include bosses from Broadstairs I believed to date to the very end of the 6th century (graves 66 and 74)(L. Webster pers. comm.) and the boss from Buckland, Dover grave 265B dated to phase 3a (550/60 to c.600)(Parfitt and Anderson forthcoming). A fourth group 3b boss from grave W1767 in the Eastern cemetery lacks the decorative domed rivets of these three bosses, though it too probably dates to the second half of the 6th century.

Three of the Saltwood shields were fitted with strap grips of Härke's types Ia1 and Ia2 (Dickinson and Härke 1992, 24-7). The broadest was associated with a group 3 boss (grave C3944) while narrower Ia1 grips were used with the larger of the 3/6 bosses and straight-sided Ia2 grips only with the smallest 3/6, the group 6 and one of the 'tall, straight' bosses (graves C6643, C1163 and C6653). An exception is the Ia2 grip attached to a fairly large group 3/6 boss from grave C3885, though the width of the flange in relation to its small, knob-headed rivet suggests this boss may have been re-used, the grip and rivet being contemporary with the refit. Long grips of Härke's type III were used only with larger group 3 and group 3b bosses. Two distinct shapes can be observed: one with and the other without clearly defined rivet plates either side of a central handle section. A correlation exists at both Saltwood and Buckland, Dover between long grips with rivet plates and group 3b bosses on the one hand (Buckland graves 91,

230 and 265B; Saltwood graves C1048, C1081, C6653 and W1767) and long grips without separate rivet plates and group 3 bosses on the other (Buckland graves 96a, 297; Saltwood grave C4680)(Parfitt and Anderson forthcoming).

Nine of the Saltwood shields had board mounts, all rather plain and of the more common types (Dickinson and Härke 1992, 27-30). All are flat or slightly convex disc-shaped mounts of Härke's type 'a' (graves C1031, C1048, C1189, C6643, C6653 and C3885). They belong to a 'standard' type of disc mount which developed in the late 6th and 7th centuries in Kent, but are a little smaller than those found elsewhere (Spain 2000). They are usually found in sets of 2, 3 or 4, arranged singly or in pairs around the boss, and it is likely that counterparts for the single examples in graves C1048 and C3885 have been lost. Two shields had single double-rivet style mounts (graves C1048 and C1286), a type found elsewhere in Kent with knob-headed rivets, straight-sided strap grips and group 6 bosses in 7th century graves (Spain 2000). Three small lozenge-shaped studs from grave C1163 cannot have fastened the boss of grip and must therefore be considered board mounts of Härke's type 'b' (Dickinson and Härke 1992, 27-30).

It has not proved possible to investigate aspects of shield construction owing to the generally poor condition of the fittings. However, a consistent board thickness of 10 mm was obtained from rivet shanks with washers surviving intact in graves C1031, C1163 and C6643. This falls within the ranges for shield boards at both Mill Hill, Deal (8 –11 mm) and Buckland, Dover (8-10 mm)(Parfitt and Brugmann 1997, 85-6, Parfitt and Anderson forthcoming).

*Table 2: Shield bosses*

	<i>Gp</i>	<i>Min</i>	<i>Max</i>	<i>D</i>	<i>H</i>	<i>FW</i>	<i>WH</i>	<i>Cone</i>	<i>Wall</i>	<i>Carination</i>	<i>Apex</i>	<i>AD</i>	<i>Rivets</i>	<i>R D</i>	<i>CA</i>
<i>Central</i>															
C6653 (1)	3b	550	600/25	170	85	25	25	convex	straight	yes	disc	15	domed	22	yes
C1048 (1)	3b(ii)	550	600/25	160	90	27	25	convex	straight	-	disc	20	domed	22	yes
C1081 (1)	3b	550	600/25	160	100	25	25	domed	straight	yes	disc	20	domed	22	yes
C1145	3/6	575	625	150	80	15	17	convex	sloping	none	knob	7	-	-	-
C1048 (2)	3/6	575	625	140	90	15	17	convex	straight	none	disc	8	-	-	-
C1286	3/6	575	625	140	85	15	18	straight	straight	none	knob	8	-	-	-
C6653 (3)	3/6	575	625	140	80	18	17	convex	straight	none	-	-	knob	7	-
C1189	3/6	575	625	135	85	15	15	convex	straight	none	knob	7	-	-	-
C6643	3/6	575	625	130	90	15	18	convex	straight	none	knob	8	-	-	-
C1163	6	c.600	650	130	70	14	18	convex	straight	none	knob	5	knob	-	-
C1031	7	c.600	700	130	95	17	15	straight	straight	none	knob	-	knob	10	-
C1081 (2)	7	c.600	700	130	100	13	15	convex	straight	none	-	-	-	-	-
C6653 (2)	7	c.600	700	130	110	12	12	convex	straight	none	knob	7	knob	7	-
<i>Western</i>															

	<i>Gp</i>	<i>Min</i>	<i>Max</i>	<i>D</i>	<i>H</i>	<i>FW</i>	<i>WH</i>	<i>Cone</i>	<i>Wall</i>	<i>Carination</i>	<i>Apex</i>	<i>AD</i>	<i>Rivets</i>	<i>R D</i>	<i>CA</i>
C4680	3	530/40	550/60	170	85	20	20	convex	straight	yes	disc	20	disc	20	yes
C3944	3	530/40	550/60	160	80	22	22	convex	straight	yes	-	-	disc	20	yes
C3885	3/6	575	625	140	85	18	16	convex	sloping	none	knob	10	knob	10	-
<i>Eastern</i>															
W1423	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W1767	3b	550	600/25	160	90	25	25	straight	straight	yes	disc	22	disc	-	-
W1705	3/6	575	625	140	80	15	15	convex	straight	none	disc	-	-	-	-

(Gp=Group; Min/Max=Date range; D=Diameter (mm); H=Height (mm); FW=Flange Width (mm); WH=Wall Height (mm); Cone=Cone shape; Wall = Wall shape; AD=Apex Diameter (mm); RD=Rivet Diameter (mm); CA=Copper-alloy)

*Table 3: Summary of shield components*

	<i>Boss Type</i>	<i>Grip Type</i>	<i>Board Mounts</i>
<i>Central</i>			
C1031	Tall, straight	Strap (Ia1)	Standard flat discs D35
C1048	Group 3b with domed CA rivets Group 3/6	Long, flanged (IIIb) with rivet plates Narrow strap (Ia1)	Convex disc D30 Double-rivet mount
C1081	Group 3b with domed CA rivets Tall, straight	Long, flanged (IIIb) with rivet plates -	- -
C1145	Group 3/6	-	-
C1163	Group 6	Straight-sided strap (Ia2)	Lozenge-shaped studs
C1189	Group 3/6	Strap (I)	Standard flat discs D35
C1286	Group 3/6	Narrow strap (Ia1)	Double-rivet mount
C6643	Group 3/6	Straight-sided strap (Ia2)	Standard flat discs D33-35
C6653	Group 3b with domed CA rivets Tall, straight Group 3/6	Long, flanged (IIIb) with rivet plates Straight-sided strap (Ia2) Narrow strap (Ia1)	- Standard flat discs D33-35 Standard flat discs D32-35
<i>Western</i>			
C3944	Group 3 with flat CA rivets	Broad strap (Ia1)	-
C3885	Group 3/6	Straight-sided strap (Ia2)	Standard flat disc D35
C4680	Group 3 with flat CA rivets	Long, flanged (IIIb)	-
<i>Eastern</i>			
W1423	-	-	-
W1767	Group 3b	Long, flanged (IIIb)	-

	<i>Boss Type</i>	<i>Grip Type</i>	<i>Board Mounts</i>
W1705	Group 3/6	Strap (1a1)	-

## 5 ANGONS

*by Ian Riddler*

Three angons came from the prominent weapon graves within the Central cemetery, graves C1048, C1081 and C6653 (Figs. 136, 142 and 208). Each angon has a barbed apex, a long shaft of solid iron and a short cleft socket. In each case the blade is effectively a barbed point of diamond-shaped section, whilst the shaft is circular. The socket extends to 15 – 20% of the overall length of the angon. The angons from Graves C1081 and C6653 have three binding rings along the socket, whilst the shorter angon from grave C1048 has wound iron wire at its base. Each angon is of a similar shape, but they vary in their lengths, from 527 mm with grave C1048 to 995 mm with grave C1081 and 1,012 mm with grave C6653. They are substantially complete, although they now lack their wooden shafts and part of the socket of the angon from grave C1081 has been bent over. It is likely that this happened when the burial chamber in this grave subsided. In each case the angon lay at one side of the grave, well beyond the body and outside of the coffin, with the point facing towards the lower part of the burial. A spear accompanied the angon in grave C1048, whilst that in grave C1081 was set at an angle, with the head well above the fractured socket. The angon in grave C6653 also lay close to a spear, which was pointing in the same direction.

Angons are rare finds from Anglo-Saxon England and their distribution is centred on Kent, with a number of outliers, generally from auspicious graves. An example is known from Strood, close to the Cuxton cemetery (Roach Smith 1861, 129-35 and pl XI.1; Swanton 1973, 146 and fig 55a). The burial can be dated to the early 7th century and it included a spearhead, as well as a sword, a shield and an imported pottery bottle. It can be compared with another sword burial in Kent, from Sarre, grave 211, where an angon lay to the right of the head, alongside a spearhead. This also was a well-equipped grave (Brent 1868, 310-11; Perkins 1992, 116). A further angon came from Sarre grave 89, accompanied once again by a spearhead (Brent 1866, 172; Perkins 1992, 111). ‘A long pike’ from Sarre grave 135 is also likely to be an angon (Brent 1866, 178).

Three angons were found in Sutton Hoo Mound One (Bruce-Mitford 1978, 259-65) and, as at Saltwood, each differs in its length, within a range of 660 – 840 mm. They were found with a group of six spears, beside the Byzantine copper-alloy bowl in that grave (Bruce-Mitford 1978,



fig 186). The arrangement of the grave goods within the chamber of Mound One suggests that the bowl and angons lay to the left and above the head, pointing to the upper part of the grave. A further angon is known from Taplow, in the position of the Saltwood examples: facing towards the foot of the grave and closely associated with several spearheads (Swanton 1973, 151). Two angons were found within a grave at Abingdon (Leeds and Harden 1936, 44 and pl XIX). One was 355 mm in length with a broad blade, whilst the other is closer in form to the examples noted above, with a length of 530 mm. They lay to the left of the skull, pointing to the top of the grave. An object from Bifrons is similar to the smaller angon from Abingdon, with a flat barbed blade, which Swanton compared with earlier forms from Scandinavia (Swanton 1973, 31 and fig 4c and e). Similarly, a small angon from Sibertswold grave 98 extends to just 11" (280 mm) in length (Faussett 1856, 117 and pl. XIV.4).

The longer angons noted above all fall within Swanton's type A2 and reflect Frankish influence, although the objects themselves may have been made in England. They form a closely dated group, belonging to the period *c.* 575 – 625, with the Sutton Hoo examples possibly the latest of the series (Swanton 1973, 35; Hawkes 1981, 52). Continental examples span the 6th century with some examples occurring early in that century whilst others, from the Pas-de-Calais area for example as well as further to the east, have been placed mainly in the second half of the 6th century, extending a little into the 7th century (Martin 1976, 51; Roger 1982, 119 and fig 7.1; Seillier and Demolon 1983, 66 and 162; Nieveler and Siegmund 1999, fig 1.6; Koch 2001, abb 21.Y22). They include two examples from Channel Tunnel excavations at Fréthun (Routier 1996, 547 and fig 13.1). Those from the lower Rhine are restricted to Phases 4 and 5 there, *c.* AD 530 – 570 (Siegmund 1998, 105). Their distribution is centred on north eastern France, southern Belgium and the middle Rhine area (Bertram 1996, 59).

## 6 ARROWHEADS

*by Ian Riddler*

The uppermost part of grave C1048 did not contain any grave goods. Lower down and to the left of the presumed location of the body lay a variety of weapons including two shields, an angon and a spearhead. Beyond one of the shields, a corroded mass of iron contained the remains of at least fourteen arrowheads (Figs. 135-6). The majority of the arrowheads were pointing to the top of the grave, although one was set at diagonally across the group. Below the cleft sockets of the arrowheads lay a space of 0.7 m, where the wooden shafts of the arrows may have been situated.

All of the arrowheads have the same lentoid shape and cleft sockets, and they are similar to Swanton's type C1 spearheads. They are significantly smaller than spearheads, however, with lengths of 115 – 120 mm. Arrowheads can generally be distinguished from spearheads in terms both of their length and their weight, although there is an overlap in size between the smaller spearheads and the longer arrowheads (Härke 1992, 87 and 138; Siegmund 1998, 95-6; Kazanski 2003, 42).

Arrowheads have mostly been recovered as single finds in early Anglo-Saxon graves. Within Kent, examples are known from Dover Buckland, Chartham Down, Chatham Lines, Eccles, Kingston, Mount Pleasant and St. Margaret's at Cliffe (Evison 1987, 30; Kerep forthcoming; Manley 1985, 232-3; Härke 1992, 87 and 107-8). Although they are not found exclusively in Kent, they are concentrated in the county, which has greater numbers than elsewhere in England (Evison 1965, 26; Welch 1983, 135; Härke 1992, 107-8 and abb 15).

Arrowheads are present as single finds in most of the Kent graves, although there were at least two at Chatham Lines (Evison 1987, 30; Manley 1985, 232). Details of the sex and age of the deceased are only known for the Dover Buckland and Mount Pleasant burials. Arrowheads have been found at Dover Buckland in graves 139, 301 and 411<sup>8</sup>. Two of the three graves are those of child or adolescents, whilst one is the grave of an adult. Mount Pleasant grave 1, which included an arrowhead, was also the burial of a child. On the Continent, single or small groups of arrowheads are also found predominantly in child graves (Koch 1977, 113; Heege 1987, 52). At Pleidelsheim specific forms and sizes of arrows were found in child graves, with longer examples and barbed forms occurring only in adult male graves (Koch 2001, 172-3).

The deposition of single arrows in graves should be distinguished, however, from the situation seen with Saltwood grave C1048, where a set of arrowheads lay on one side of the grave. Within Anglo-Saxon England, similar groups of arrowheads are known only from Buttsale in Kent and from Chessel Down on the Isle of Wight, as well as Empingham in Rutland (Payne 1893, 182-3; Baldwin Brown 1915, pl XXXII; Arnold 1982, 67; Manley 1985, 233; Härke 1992, 107 note 133). Chessel Down and Empingham are 7th century graves, whilst Buttsale cannot be closely dated. Unlike the other graves, Buttsale appears to have included a variety of arrowhead types, with both lentoid forms and barbed examples present (Payne 1893, 182-3). At Saltwood it appears that the deceased was equipped with a set of arrows, all of the same type. A bow may also have been present originally, but it has not survived.

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<sup>8</sup> The arrowheads described by Evison (1987, 30) from graves 57, 149 and 156 at Dover Buckland are pointed iron implements. This implement type is described in Riddler, Cameron and Marzinzik 2006.

Arrows may have been used as much for hunting as offensive weapons, although one example from Eccles was found lodged in the spine of a male adult (Manley 1985, 233; Härke 1992, 107 note 133; Shaw 1994, 180).

## 7 SPEARHEADS

*by Ian Riddler*

### 7.1 Introduction

37 spearheads were recovered from 34 separate graves distributed across the three cemeteries, but with relatively few examples from the Eastern burial ground. 23 examples came from the Central cemetery, 11 from the Western cemetery, and three from the Eastern cemetery. In most cases a single spearhead was found in each grave, although there were two in grave W1705 within the Eastern cemetery (Table 4). The spearhead from the Western cemetery (2664) is unstratified. Two ferrules for spears were also recovered from the Western cemetery, from graves C3779 and C4688.

The spearheads have been catalogued and assigned to type following the typological scheme of Swanton (1973; 1974). The shortcomings of this scheme have been outlined elsewhere (Dickinson 1976, 291-2; Härke 1992, 85-6) but it remains of use and has yet to be replaced. The spearheads have also been considered in regional terms, utilising parallels drawn from Kentish cemeteries alone to build up a localised perspective, which can be useful for dating purposes, as well as for the distribution of specific types.

*Table 4: Spearheads*

<b>Cemetery</b>	<b>Grave</b>	<b>ON</b>	<b>Type</b>	<b>Length</b>	<b>Figure</b>
Central	C1031	786	F2	557	133
Central	C1048	864	G2	355	136
Central	C1132	895	H2		147
Central	C1145	1094	G2	478	150
Central	C1159	1183	E3	530e	152
Central	C1163	1160	D1	237	153
Central	C1189	1232	C3	350	156
Central	C1195	1133	D1		158
Central	C1197	1106	F1	250e	159
Central	C1204	1247	D2	325e	160
Central	C1214	1111	D1	202	162
Central	C1221	1120	D3	335	165

<b>Cemetery</b>	<b>Grave</b>	<b>ON</b>	<b>Type</b>	<b>Length</b>	<b>Figure</b>
Central	C1267	1129	D1	205	171
Central	C1286	1161	E4	337	172
Central	C1325	1238	G2	395	173
Central	C1352	1172	F2	280	174
Central	C2816	1698	D1		184
Central	C6406	2423	H1	130e	189
Central	C6532	2508	F3	200	200
Central	C6643	2490	C1	225e	205
Central	C6653	2457	G2	450	208
Central	C6673	2661	C1	270	210
Central	Pit 1522	832			
Eastern	W1705	263	E2		60
Eastern	W1705	263	E2		60
Eastern	W1767	306	F1	222	62
Western	0	2664	C2		
Western	C3713	1962			76
Western	C3779	2005	F2/H2	255	88
Western	C3779	2004	Ferrule		88
Western	C3885	2258	E3	460	93
Western	C3944	2065	C3H3		96
Western	C4650	2242	D1	265	108
Western	C4680	2149	H3	435	115
Western	C4688	2130/2220	H3		117
Western	C4707	2148	D2		120
Western	C6206	2405	D1		124
Western	C6231	2406	C3	378	125

## 7.2 Typology and dating

Almost all of the spearheads can be placed into Swanton's scheme, the only exceptions lying with two fragmentary examples, for which only the sockets remain. Within that scheme several broad phases of spearheads can be identified. The first phase consists of 6th century types (H1, H2, H3 and D3). The second is formed of spearheads dating broadly from the middle of the 6th century to the middle of the 7th century, but with the suspicion that they are clustered in the earlier part of that period (E2). The third phase consists of spearheads with sword-like blades, which belong to the late 6th and early 7th centuries (E3, E4, F2 and G2). 7th century forms can also be identified (D1) but there are no examples of spearheads characteristic of the later 7th century (C5).

The H series belongs predominantly to the 6th century and occurs at Lyminge, Mill Hill and Dover Buckland, but with the greatest number of examples stemming from Bifrons. There are

two examples of H3 spearheads from Saltwood, as well as single examples of types H1 and H2, the latter pair coming from graves in the Central cemetery (graves C1132 and C6406). Brugmann placed the Mill Hill graves with H3 spearheads in her Phase II (c. 500 – 540), whilst H2 examples from Dover Buckland extend into the second half of that century (Parfitt and Brugmann 1997, 85 and table 8; Kerep forthcoming).

The D3 spearhead from Dover Buckland grave 90 fits uncomfortably into that group, given that it is relatively short and lacks any appreciable length of solid stem, as noted by Geake (1997, 69). The type is better defined by the presence of a short blade and a long solid stem leading to a cleft socket, with those including a short length of solid stem belonging instead to type D2. Accordingly, Kent examples defined as type D3 in this manner come from Saltwood grave C1221, Mill Hill grave 40, Polhill East grave 1 and Sarre grave 256 (Swanton 1973, 175 and fig 67; Parfitt and Brugmann 1997, fig 34; Philp 2002, fig 13.4). They can be placed in the 6th century, with the emphasis on the second half of that century.

Spearheads of types extending from the middle of the 6th century into the first half of the 7th century are well represented at Saltwood and later types are practically absent. They include both spearheads with long, sword-like blades, as well as other forms with prominent blades. The E2 spearheads from Mill Hill Deal were placed by Brugmann into her phases II/III and III/IV and set into the 6th century (Parfitt and Brugmann 1997, table 8) and a single example from Dover Buckland was given a phase 3 date (c. AD 575 – 625) by Evison (1987, 26). An E2 spearhead also came from a grave at Cuxton (Blackmore 2004). The two examples from the same grave (W1705) in the Eastern cemetery at Saltwood may also belong to the second half of the 6th century. They are of similar dimensions and were found together in the upper part of the grave, on the left side, at the edge of the coffin. Pairs of spearheads are recorded from over eighty early Anglo-Saxon graves, including examples from Gilton, Howletts and Wrotham in Kent (Swanton 1973, 14-15 and note 39). In most cases, as here, the spearheads are of the same type.

Spearheads with long, sword-like blades occur in types E3, E4, F2 and G2 at Saltwood, with most of the extant examples coming from the Central cemetery, and stemming from graves C1031, C1048, C1145, C1159, C1286, C1325 and C6653. The majority of these graves lay in the northern part of the Central cemetery. An E3 spearhead came from grave C3885 in the Western cemetery as did an F2 spearhead in grave C3779. E3 spearheads have been found also at Bifrons, Mill Hill Deal and Polhill (grave 73), and they were particularly common at Dover Buckland (Kerep forthcoming). Type E4 represents an attenuated version of the E3 shape and is less common. The single example from Saltwood grave C1286 can be set alongside spearheads of the same type from Mill Hill grave 91 and Dover Buckland grave 346. The long tapering

blade of the spearhead from Saltwood grave 1031, alongside the section of solid shank extending below it, allow it to be placed in type F2. It is comparable in size with an example from Mill Hill grave 36, whilst shorter and squatter examples from Polhill graves 27 and 69 are close in form to the spearhead from grave C3779 within the Western cemetery. One example also came from the Cuxton cemetery (Blackmore 2004). Hawkes suggested that type F2 was popular in East Kent, largely within 7th century contexts (Hawkes 1973, 187). It is rare, however, at both Saltwood and Dover Buckland and it may not have been popular in the south-eastern part of Kent.

Type G2 is similar to E3 but includes a short socket and parallel sides to the blade (Swanton 1973, 101). The four Saltwood examples all come from the Central cemetery and include spearheads from the prominent graves C1048 and C6653, as well as grave C1145 and grave C1325, which also contained a short *seax*. Within Kent, G2 spearheads have also been found at Dover Buckland (Graves 33, 256 and 301), Aylesford, Folkestone and Holborough grave 7, in contexts of late 6th to early 7th century date.

All of the spearheads of 7th century date from Saltwood probably belong to the first half of that century. The two examples of C3 spearheads include one from the Central cemetery (grave C1189) and one from the fringes of the Western cemetery (grave C6231). Two examples from Dover Buckland were placed in phases 4 and 5, which extend into the 7th century (Evison 1987, 26) and a single example came from Cuxton (Blackmore 2004). The most common type of spearhead from Saltwood as a whole is the type D1, which was in use across most of the early Anglo-Saxon period (Swanton 1973, 64-7). Hawkes noted, however, that examples from Kent came largely from graves of the first half of the 7th century, echoing a suggestion of Swanton (Hawkes 1973, 188; Swanton 1973, 64). Five examples came from the Central cemetery and two others were retrieved from graves in the Western cemetery. Where dating evidence is present at Saltwood, it confirms that the type belongs to the first half of the 7th century.

Spearheads of the later 7th century, and type C5 in particular, were not found in any graves at Saltwood. Within Kent, they are known from Dover Buckland, Finglesham and Polhill (Hawkes 1973, 188; Swanton 1973, 61-2; Evison 1987, 26 and 29). Similarly, there is only one example of a type C2 spearhead, and that unfortunately is unstratified. The type is essentially of 7th century date in Kent (Swanton 1973, 52; Hawkes 1973, 188) and occurs in late graves. In summary, it can be said that there are no types from Saltwood that can be placed conclusively in the period from 650 onwards.

### 7.3 Spearhead technology

The spearheads were examined by Brian Gilmour, in the hope of correlating the technology of their manufacture against the typological scheme outlined above (Gilmour 2006). In the event, only seven were suitable for analysis, due to the poor survival of metal. Of these, the spearhead from grave C3885 (type E3) proved to be the most interesting because of its unusual bi-metallic structure, mixing a very high carbon steel with a fairly homogeneous low carbon iron; it is likely to be an imported product. The spearheads from graves C1159, C1197 and C4680 (types E3, F1 and H3) were formed of three welded sections, the latter invoking at least a partial pattern-welded design. The same manufacturing techniques could clearly be used on spearheads of different shapes. Moreover, the spearhead from grave C1159 is of the same E3 type to that from grave C3885, but was constructed in a different way and the patterning of its blade would have looked distinctly different in its original form. Thus two spearheads of the same shape may have been produced by two different craftsmen, utilising two different technologies. In contrast, to these elegant blades, the spearhead from grave C6532 (type F3) was a poor product, possibly an unsuccessful attempt at a steel bloom, utilising a local ore, quite possibly of Wealden origin; and it was effectively a child's weapon. The spearhead from grave C6231 (type C3) was similar in also being produced from a single piece of iron, generally of poor quality.

### 7.4 Sockets, ferrules and symbols

All of the spearheads have cleft sockets. There is no evidence for the use of any bindings to secure them to their shafts, but nails were commonly seen, set laterally across the sockets, as an additional reinforcement. There are no examples of additional iron or copper-alloy rings, set along the shaft, as encountered at Dover Buckland, and no metal pins had been used to secure wrapped textile to the spear blades (Evison 1987, 29), although mineralised textile adhered to several spearheads (Walton Rogers 2006).

One spear of type F3 from grave C3779 in the Western cemetery was equipped with a ferrule. The distance between the spearhead and the ferrule was 1.48 m. In general, ferrules tend to be associated with spearheads of earlier forms. Within Kent, they are found with a variety of spear types, but with few examples of 7th century date (Table 5).

*Table 5: Ferrules and spearhead types from East Kent cemeteries*

<i>Type</i>	<i>Quantity</i>
H3	6
H2 or H3	1
H2	2
L	1
D3	1
F1	1
E3	4
C2	2
F2	2
G2	1
E4	1
C4 or E4	1
D1	2
C1 or E2	1
Type Indeterminate	2

A spearhead from grave C1204 has a fragmentary blade, the lower part of which includes two symbols, representing a + and an O, inlaid on one side. Inlaid markings have been found on spearheads from Holborough grave 7, as well as Dover Buckland Graves 93 and 301 (Evison 1956, 97-100 and fig 7; Evison 1987, 29; Kerep forthcoming). Evison noted that they are broadly related to runic inscriptions seen on Germanic spearheads of third and fourth century date (Evison 1956, 98). Scandinavian spearheads also include markings of this type, as with an example from Espe (Nikolajsen 1987, fig 616.2). In this case, however, there is no obvious relationship with the Anglo-Saxon *futhorc*, or with Alamannic designs, which show the Christian cross, as well as other patterns on spear blades (Evison 1956, 99; Veeck 1931, tafn 71.B7 and 78.A3). The Saltwood design is related to that from Dover Buckland grave 93, which consists of a circle and a swastika, rather than a circle and a cross (Evison 1987, fig 43.3). As Evison suggests, these motifs may be an Insular device, with this particular type confined to Kent and occurring on blades of late 6th and 7th century date (Evison 1987, 29).

### **7.5 Location in the grave**

Most of the spearheads were found in the customary position within early Anglo-Saxon graves in Kent, close to the head, either on the left or the right side of the grave (Evison 1987, 28). The only exceptions to this lay with three graves within the Central cemetery. Within Graves C1048



and C6653 single spearheads lay to one side of the grave, towards its midpoint, facing towards the base of the grave in each case. Both were accompanied by angons. In grave C1163 the spearhead lay in the lower left hand corner, facing the foot of the grave. This position is more commonly seen in Frankish graves, as at Lavoye, for example (Joffroy 1974, 26). Several graves from Dover Buckland and Mill Hill at Deal also included spearheads facing the foot of the burial (Evison 1987, 28; Kerep forthcoming; Parfitt and Brugmann 1997, 84).

## 8 LARGE KNIVES AND SHORT SEAXES

by Ian Riddler

Eight knives, all of which come from the Western and Central cemeteries, have blades up to 167 mm in length and can be placed in the category of large knives, which equates with Härke's knife Group 3 (Table 6). A further four knives, the longest from Saltwood, with blades exceeding 200 mm in length, can be described as *Kurzsaxe*, or short *seaxes*, being smaller than the *Schmalsax* or narrow *seax* (Hawkes 1973, 189-90; Härke 1992, 89-90; cf also Siegmund 1998, tab 12). One of the graves with a short *seax* (W1767) came from the Eastern cemetery and the other three were located in the Central cemetery. All but one of these twelve knives has a blade of type A and most have relatively short tangs in relation to the length of the blade. At Saltwood, as elsewhere, large knives can be distinguished from short *seaxes* from the length of the blade.

The large knives and short *seaxes* were found entirely in graves of male gender, where that gender could be established (Table 6). They occurred in association with swords in two graves, of phase 3 (grave W1767) and phase 3b – 4a (grave C4665). In grave W1767 the short *seax* was beside the sword and aligned with it, with the blade pointing to the head of the grave. This was the only grave in which a *seax* was associated with both a sword and a shield, as well as a spear. In grave C4665 the large knife was almost perpendicular to the sword, with the blade pointing towards the side of the grave (Fig 193). Smaller knives were found in close association with several of the other swords, including those in grave C1081 and C1163. Short *seaxes* or large knives occurred in five graves with spearheads (graves C1767, C1132, C1325, C6673 and C3713) and in six cases there were no other weapons in the grave, and this may reflect a late stage in the weapon burial rite, of c. AD 625 – 700.

*Table 6: Large knives and short seaxes*

<i>Cemetery</i>	<i>Grave</i>	<i>Sf</i>	<i>Blade Length</i>	<i>Tang Length</i>	<i>Type</i>	<i>Form</i>	<i>Gender</i>	<i>Figure</i>
Eastern	W1767	385	230	88	Short Seax	A	Male	62
Central	C1325	1162	230	87	Short Seax	A	Male	173
Central	C1154	896	210	83	Short Seax	A	Not known	151
Central	W1319	40	205	64	Short Seax	A	Male	220
Central	C6673	2663	167	78	Large Knife	A	Male	210
Central	C1045	779	164	76	Large Knife	A	Male	134
Western	C4665	2240	164	66	Large Knife	A	Male	113
Western	C3998	2069	163	86	Large Knife	D	Not known	102
Western	C3713	1961	155	64	Large Knife	A	Male	76
Western	C3953	2067	150	68	Large Knife	A	Male	101
Western	C4614	2241	150	60	Large Knife	A	Not known	106
Central	C1132	899	145	60	Large Knife	A	Male	147

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