

**Channel Tunnel Rail Link
London and Continental Railways
Oxford Wessex Archaeology Joint Venture**

**The later prehistoric pottery from Cobham Golf
Course, Cobham, Kent (ARC CGC 98)**

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1 INTRODUCTION

A total of 939 sherds (8665 grammes) of middle and late Bronze Age pottery was recovered. The condition of the assemblage is moderate to good, and consequently surface treatments and usewear evidence are apparent on many but not all sherds. The mean sherd weight for the assemblage is 9.2 g. The material derived from 29 contexts, including 5 ditch cuts, 7 postholes, 12 pits, and one layer. There is also a small amount of pottery which is unstratified. The recovery and study of this pottery has the potential to contribute to fieldwork event aims and Landscape Zone aims by informing interpretation of the morphology and function of the settlement and by providing dating for the features and material for radiocarbon dating of specific vessels (cf Rayner 2001). The pottery was recorded using the methodology designed for the route-wide scheme in accordance with the recommendations set out by the Prehistoric Ceramics Research Group (PCRG 1995; 1997).

2 FABRICS

Thirteen fabric types within five fabric groups were defined on the basis of principal inclusions present (Table 1). Eight flint-tempered fabric types account for 97.6% of the assemblage by number of sherds, and the remainder consists of six sherds from one vessel in a grog-and-flint-tempered fabric (0.6%), five sherds which are in a flint and iron oxide-bearing fabric (0.6%), nine containing flint and quartz (1.0%), and a single sherd in a quartz-rich fabric (0.1%). All of the flint fabric types contain crushed, angular, calcined flint temper. One sample from fabric F3 was selected for petrological analysis in order to confirm the fabric description.

Table 1: Quantification of fabrics by sherd count and weight

Fabric Type	Count	% count	Weight (g)	% weight
F1	237	25.2	2006	23.2
F2	31	3.3	390	4.5
F3	401	42.7	3250	37.5
F4	13	1.4	173	2.0
F5	111	11.8	1615	18.6
F6	21	2.2	187	2.2
F7	43	4.6	369	4.3
F8	61	6.5	555	6.4
FI1	6	0.6	26	0.3
FQ1	4	0.4	14	0.2
FQ2	4	0.4	52	0.6
GF1	6	0.6	26	0.3
Q1	1	0.1	2	<0.1
Total	939		8665	

The fabric descriptions do not include labels such as very coarse, coarse, intermediate or fine. These are subjective and relative observations which have not yet been defined by the Prehistoric Ceramics Research Group despite their continued use in many ceramics reports. The detailed descriptions do, however, provide an understanding about the coarseness or fineness of fabric texture through the use of the comparative charts and grain-size classifications provided by the Prehistoric Ceramics Research Group (PCRG 1995; 1997, Appendices 3-7).

There are no examples of shell-bearing or glauconitic sand fabrics in this later prehistoric pottery assemblage, such as have been recovered from neighbouring sites along the route of the Channel Tunnel Rail Link. The only organic-tempered fabrics are associated with briquetage, or salt production ceramics discussed elsewhere in this site report. These aspects are discussed further in the synthesis of later prehistoric pottery from the project.

2.1 Flint-tempered group

F1 common to very common (25-30%) poorly sorted flint, ≤ 3 mm, with rare examples up to 6 mm, in a clay matrix with coarse silt or finer quartz grains; dense in texture, concoidal in fracture

F2 abundant (40-50%), moderately sorted flint, ≤ 2 mm, with rare (1%) larger pieces of flint up to 4 mm, in a clay matrix with coarse silt or finer quartz grains and rare iron oxides

F3 common (25%), moderately-sorted flint, ≤ 3 mm, in a clay matrix with coarse silt or finer quartz grains, and a small amount of red iron oxides; laminated in fracture

F4 very common to abundant (30-40%), well-sorted flint, ≤ 2 mm, in a clay matrix with coarse silt or finer quartz grains, and rare red/black iron oxides; slightly finer in texture than F2

F5 abundant (30-40%), poorly sorted flint, ≤ 6 mm, with rare (1%) pieces of flint up to 9 mm, in a clay matrix with coarse silt to finer quartz grains, and rare, rounded red iron oxides; single subangular to angular fragment of quartzose, fine sandstone, which may be a fragment of sarsen, 5 mm, observed

F6 sparse to moderate (7-15%), poorly sorted flint, ≤ 5 mm, in a clay matrix with very fine sand to coarse silt-sized quartz grains and rare rounded red iron oxides; laminated in texture (possibly slab-built)

F7 very common to abundant (30-50%) flint in two sizes, well-sorted 1-3 mm and well-sorted < 0.1 mm which may be referred to as 'flint dust' creating a 'bimodal' effect in a clay matrix with very fine, quartz sand, ≤ 0.1 mm

F8 very common (30%), well sorted flint, ≤ 2 mm, with the majority < 1 mm, in a clay matrix with a very fine, only slightly sandy texture, and rare red iron oxides

2.2 Flint-tempered and iron-rich group

F11 common (25%), poorly sorted flint, < 4 mm, and moderate (10%), rounded to subrounded moderately-sorted red iron oxides, ≤ 2 mm, in a clay matrix with coarse silt-sized quartz grains; most likely derives from a different clay source than that used to make the flint-tempered group due to the significant quantity of iron visible

2.3 Flint-tempered and quartz sand group

FQ1 moderate (15%), well-sorted flint, ≤ 1 mm, and moderate to common (15-20%), well-sorted, rounded, fine quartz, ≤ 0.2 mm, with rare grains of quartz up to 0.8 mm

FQ2 sparse to moderate (5-10%), poorly sorted flint, ≤ 6 mm, with the majority less than 1 mm, and common (25%) moderately-sorted, medium to fine quartz, < 0.5 mm, with rare organic matter, < 4 mm, and rare red iron oxides

2.4 Quartz sand group

2.5 Q1 common (20%), moderately sorted, rounded quartz, ≤ 0.5 mm, in the clay matrix

3 CLAY AND TEMPER RESOURCES

The area surrounding Cobham Golf Course consists of Upper Chalk and Clay with Flints, overlaid by the sands and clays of the Woolwich Beds, and sands of the Thanet Beds (Geological Survey Sheet 272; Dines, Holmes and Robbie 1954). This geology provides potential potting material. The Cobham Golf Course fabrics suggest reliance on locally available resources for ceramic production during the middle to late Bronze Age. This conclusion is based on a model of raw materials resource procurement for pottery production, whereby the preferred territory of exploitation for both clay and temper is 1 km or less, and the common range of exploitation within 7 km for clay and 6-9 km for temper (Arnold 1985, 54-5; Morris 1994a & b). Flint, the predominant temper in this assemblage, could have been obtained locally from the Upper Chalk, and the clays could have derived from a variety of local sources.

It is likely to be significant that there were at least two and probably three different clay sources used to make the fabrics: a very fine, silty clay matrix, a fine sandy clay matrix and an iron-rich, silty clay matrix. This suggests either that several potters were using different clay sources, or that different generations of potters were selecting different sources and the variability is chronological, or a combination of both. A detailed programme of clay sampling within the 7 km region is recommended for future research to help identify suitable clay resources which may have been used and to determine whether the flint temper and iron oxide fabrics could have been made from local clay.

4 DISCUSSION

Flint fabric F5 is the only fabric which had definitely been used to make middle Bronze Age pottery in the Cobham assemblage (Tables 2-3). Quantities of crushed, calcined flint had been added to a very fine, silty clay rather than sandy clay; this selection of silty rather than sandy clay for making pottery fabrics is a very common middle Bronze Age tradition in southern Britain. The more settled existence of this period would have allowed the accumulation of

burnt flint, which would have been associated with the processes of cooking, heating liquids and providing warmth (Woodward 2002, 31). Indeed, large quantities of crushed flint would have been needed to make the large thick-walled middle Bronze Age bucket-style jars from Cobham, and the time and skill involved in creating one of these pots is impressive.

In addition, it is highly likely that the five thick-walled (10-13 mm) body sherds from the lower part near the base angle of a vessel made from fabric F11 and found without any other pottery in ditch cut 199, part of the east-west boundary ditch system, were also middle Bronze Age in type. However, it may be that these sherds are late Bronze Age in date; there are no other characteristics to provide a clue either way. One other body sherd fragment (1 g) was recovered from pit 161.

The remaining fabrics are associated with late Bronze Age forms. These fabrics generally can be described as significantly finer, and more varied, than middle Bronze Age fabric F5. The flint inclusions are usually smaller and less dense in frequency, and more effort had been put into the clay preparation. Amongst the late Bronze Age fabrics there is a small number of sherds made from fabrics with a distinct presence of fine or medium to fine, sand-grade quartz grains, rather than simply silt-sized grains (fabrics FQ1, FQ2). However the vast majority of late Bronze Age fabrics are made only from silty clay matrices just like the middle Bronze Age tradition. Fabric F5, the coarsest, flint-rich fabric in the assemblage, had not been used to make any vessels diagnostic of a late Bronze Age date, and is indicative of a preference during the late Bronze Age for finer fabrics in order to make vessels with thinner walls and a greater variety of forms.

The vessel wall thickness of the six small, thick-walled body sherds from a single vessel made from grog-and-flint-tempered fabric (GF1) suggests that this fabric may belong to either the earlier or later Bronze Age. Comparison with similar fabrics amongst the Channel Tunnel Rail Link assemblages is likely to provide a clearer lead in this matter and will be discussed further within the synthesis of the later prehistoric pottery from the project. These sherds were found in ditch cut 222, in association with five sherds (72 g) from the central part of a flat base vessel in fabric F8. Assuming that F8 vessels are always late Bronze Age in date, it is likely that the GF1 vessel is also late Bronze Age; however, if future work demonstrates that fabric F8 was used during the middle Bronze Age or the transition from the middle to late Bronze Age, this assumption will need revision.

The date range for the single sherd in fabric Q1 could not be defined with any certainty but it is suggested that this vessel could have belonged to the changes from flint-dominated assemblages in the late Bronze Age to those made from flint-and-quartz and quartz sand fabrics in the late Bronze Age to early Iron Age period. This is most likely because the single radiocarbon date for a flint-tempered late Bronze Age type vessel fell directly within the 9th

century cal BC (NZA-21143, 2741±30BP; 890-820 cal BC) (Fig. 1, No. 11). The FQ and Q fabrics may herald activity extending into the next century in this area of Cobham.

5 FORMS

A total of nine rim form types, two base types, one handle or knob, and one angled shoulder type has been defined within the Cobham Golf Course assemblage (Tables 2 and 4). No complete vessel profiles remain. The term ‘jar/urn’ is used to discuss the middle Bronze Age forms out of respect for traditional middle Bronze Age terminology and the recognition that these vessels were not recovered in funerary contexts but appear to represent the debris from settlement occupation (Gibson 2002, 145).

Table 2: Correlation of fabric and vessel form (number of vessels)

Forms	Fabrics					Vessel	Date
	F1	F3	F5	F7	F8		
R1			3			bucket jar/urn	MBA
R2				1	1	round-bodied bowl	LBA
R3	2	2				round-shouldered jar	LBA
R4	2	1				jar	LBA
R5				1		round-bodied jar	LBA
R6	1					angled/shouldered jar	LBA
R7	1					ovoid jar	LBA
R8					1	angled/shouldered bowl	LBA
R9		1				jar	LBA
H1				1		handle or boss/knob	?LBA

5.1 Middle Bronze Age

A minority of sherds (108 of F5) was identified as middle Bronze Age, and others (6 of F11; 5 of GF1) may be middle Bronze Age. Three forms were present: a bucket-style jar/urn (type R1; Fig. 1, Nos 1-3); and a slightly carinated or angled, thick-walled sherd (type A1). Plain body sherds were identified on the basis of fabric and sherd wall thickness alone. The pottery consists of large, thick-walled bucket jar/urns made from the coarsest fabrics in the assemblage. As a whole this type of pottery finds general parallels with middle Bronze Age Deverel-Rimbury pottery from a wide variety of sites, including Kemsley, Kent (McNee 2002), Mile Oak in Sussex (Hamilton 2002), Ardleigh in Essex (Brown 1995a; Erith and Longworth 1960), and Coldharbour Road, Gravesend in Kent (Barclay 1994).

Feature 191 and ditch cuts 195 and 197, all part of the main east-west ditch complex, produced a significant quantity of middle Bronze Age pottery (Table 3). On the basis of fabric and sherd thickness, one angled sherd present is considered to belong to a middle Bronze Age biconical jar (Fig. 1, No. 5). Biconical profiles do occur within the Deverel-Rimbury repertoire, for example at Mile Oak (Hamilton 2002, fig. 2, 32), and Ellison (1975) noted that

biconical pots occur within her Lower Thames Group. There are other occurrences of fabric F5 within the assemblage but these are usually found in association with later pottery and are assumed to have been redeposited. Layer 164, for example, has several body sherds of F5.

Rim type

R1 rounded, upright rim from a bucket jar/urn (Fig 1, Nos 1-3)

Angled body sherd type

A1 slightly emphasised carination from bucket jar/urn (Fig. 1, No. 5)

5.2 Late Bronze Age

A number of characteristic late Bronze Age plain ware vessel forms is present in the Cobham Golf Course assemblage, and includes a wider range of vessels than is seen during the middle Bronze Age period.

5.2.1 Bowls

There are two diagnostic bowl types: a round-shouldered bowl (R2; Fig. 1, Nos 6 and 19) and a bowl with a slightly carinated shoulder (R8; Fig. 1, No. 12). Rim types tend to be slightly flaring and body walls are thin. The round-shouldered bowl is similar to one from Carshalton (Adkins and Needham 1985, fig. 10, 320) and bowl type 7 from Potterne, Wiltshire (Gingell and Morris 2000, fig. 49, 37). The carinated bowl is similar to several from Runnymede (Longley 1980, figs. 20-42; Longley 1991, figs. 76, P2; 77, P20; and 81, P61), bowls from North Shoebury in Essex (Brown 1995b, fig. 65, 71 and 75) and bowl type 2 from Potterne, Wiltshire (Gingell and Morris 2000, fig. 47, 12-17). The Cobham bowls are usually black and shiny with quite well burnished internal, and often external, surfaces. They are classic examples of Barrett's post-Deverel-Rimbury plain ware tradition of Class IV fine bowls (1980). It may be significant that the Cobham bowls are not easily paralleled in Kent, and find little similarity with the Kemsley bowl types, which are predominately simple round-profile bowls (McNee 2002).

5.2.2 Jars

Six jar forms have been identified: a round-shouldered jar with a short neck, one of which is decorated with finger-tip impressions on the inner edge of the rim (R3; Fig. 1, Nos 9, 11 and 14-15); a flat topped, medium to long necked jar (R4; Fig. 1, Nos 7 and 10); a softly rounded-profile jar (R5; Fig. 1, No. 18); a shouldered or carinated jar (R6; Fig. 1, No. 16), an ovoid or convex-profile jar (R7; Fig. 1, No. 17); and a possible biconical or bipartite jar (R9; Fig. 1, No. 8). The Cobham jars are usually made from the coarser fabrics, and can be assigned to Barrett's post-Deverel-Rimbury, plain ware tradition of Class 1 jars. Jar types are not easily paralleled in Kent due to the lack of late Bronze Age plain ware assemblages. However, the carinated jar from Cobham may find similarities with Coldharbour Road, Gravesend (Barclay

1994, fig. 10, 10), and Kemsley, Sittingbourne (McNee 2002, fig. 9, 21). The Cobham shouldered and ovoid jar types can be paralleled at Knight's Farm, Berkshire (Bradley *et al.* 1980, fig. 11), Reading Business Park (Hall 1992, figs. 41-3), Carshalton, Surrey (Adkins and Needham 1985, figs. 3-5) and North Shoebury, Essex (Brown 1995b, figs. 63, 49-59, 64, 60-70 and 65, 72-80). One vessel from pit 137, made from fabric F3, is represented by a carinated or angled shoulder sherd, flat base sherds and plain body sherds only. As mentioned above, one type R3 round-shouldered jar thick with soot or burnt residue on the interior and exterior surfaces (Fig. 1, No. 11) was radiocarbon dated to the 9th century cal BC.

5.2.3 Bases

The two base forms present within the Cobham assemblage (flat - B1, Fig. 1, No. 13; and splayed flat - B2, Fig. 1, No. 20) are fairly typical of middle to late Bronze Age assemblages. Both types are simple flat-bottomed bases, and profusely gritted under-bases occur on three examples of type B1. These represent late Bronze Age jar forms, and may indicate that manufacture of the pot was carried out on a bed of burnt and crushed flint. This form of surface treatment has been noted for late Bronze Age/early Iron Age assemblages from Kent (Macpherson-Grant 1991, 19; 1994, 253). One of the Cobham examples was recovered from pit 137, which contained a sizeable assemblage of late Bronze Age plain ware jars and bowls, one of which has been dated to the 9th century cal BC (see above). Therefore, the occurrence of basal flints started at least as early as 9th century BC in Kent. Pottery with basal flints is found on many sites in Sussex, including Knapp Farm, which has been dated to the earliest post-Deverel-Rimbury phase (Hamilton 1997, 83). Three vessels identified as late Bronze Age jars have splayed bases. Splayed bases are present in late second millennium BC and early first millennium assemblages from lowland Britain (Hamilton 2002, 48).

5.2.4 Handle or Boss

A handle stub or boss (Fig. 1, No. 21) was recovered from layer 164. The fragment derives from a thin-walled (5 mm) vessel made from fabric F7. Whether it is a handle stub, a knob or boss, it is *as* likely to have derived from a middle Bronze Age globular urn as from a thin-walled globular vessel with a single perforated boss of late Bronze Age date similar one from North Shoebury in Essex (Brown 1995b, fig. 64, 62). The only other sherds made from fabric F7 in the collection are fragments from the central part of a rather thin base recovered from pit 161. Therefore, F7 is slightly more likely to have been a late Bronze Age rather than middle Bronze Age fabric but this is far from certain.

5.2.5 Rim types

R2 slightly flaring rounded rim, gently rounded body, bowl form (Fig. 1, Nos 6 and 19); open form, bowl version of R3

R3 very short upright rounded rim, rounded body, jar form, can have fingertip impressions inside the rim (Fig. 1, Nos 9, 11 and 14-15); closed form, jar version of R2

R4 flat topped rim, jar form (Fig. 1, Nos 7 and 10); probably a fragmentary version of R3

R5 slightly flaring rim, softly rounded profile, jar form (Fig. 1, No. 18)

R6 flaring rim, slightly angled shoulder or carinated profile, jar form (Fig. 1, No. 16); closed form, jar version of R8

R7 ovoid or convex-profile, jar form (Fig. 1, No. 17)

R8 upright rounded rim with long neck, slightly carinated shoulder, bowl form (Fig. 1, No. 12); open form, bowl version of R6

R9 inward curving, rounded rim (Fig. 1, No. 8); possibly from a bipartite or biconical vessel

5.2.6 Base types

B1 flat-bottomed base, which can have basal flints (Fig. 1, No. 13)

B2 flat-bottomed, splayed base (Fig. 1, No. 20)

Angled body sherd type

A1 slightly emphasized carination (not illustrated)

Handle or Boss

H1 possible handle or knob attachment (Fig. 1, No. 21)

6 DECORATION

6.1 Middle Bronze Age

This is represented by a single bucket jar decorated with an applied, 'horseshoe'-shaped cordon with additional fingertip impressions from ditch cut 197 and by a single body sherd in very poor condition from feature 191 which appears to have a finger-tip impressed cordon as well. These are fairly common components of the middle Bronze Age Deverel-Rimbury style tradition, with examples from Kemsley in Kent (McNee 2002, fig. 5) and Ardleigh in Essex (Brown 1995a; Erith and Longworth 1960, fig. 3). An example of an undecorated applied cordon was identified in the Coldharbour Road assemblage (Barclay 1994, fig. 9, 7). It should, however, be noted that the Ardleigh urns are quite unique, and can be defined by profuse rustication as well as the 'horseshoe' type decoration. This may be indicative of the urns being either especially produced for burials or deliberately chosen from the domestic repertoire to be used within a funerary context. The appearance of 'horseshoe' handled decoration at Cobham and Kemsley may be indicative of wider ranging contact with areas such as Ardleigh, and differences in the pottery may be a reflection of its intended function. It is interesting to note the appearance of this type of decoration at Great Wakering, Shobury

(Brown 1995a, 133), and also Mile Oak and Downsview, Sussex (Hamilton 2002, fig. 7, 27). These previously unrecorded decorative techniques also suggest connections into Essex (Hamilton 2002, 48-9).

6.2 Late Bronze Age

There is a single example of finger-tip impressed decoration on the inside rim surface of a round-shouldered jar (Fig. 1, No. 9). This can be paralleled at Carshalton (Adkins and Needham 1985, fig. 3, 1) and amongst the 9th century cal BC pottery from Runnymede (Longley 1980, figs 21, 51; 29, 216; 30, 259; 32, 277; and 40, 498; 1991, fig. 92, P274) in Surrey. Coarse ware jars of this type usually have fingertip impressions on top of the rim if flat-topped, rather than just inside the rim. The occurrence of only one decorated vessel, amongst at least 35 different highly fragmented jars and bowls in the late Bronze Age range of this assemblage, clearly indicates that this pottery belongs within the plain ware phase of the later Bronze Age, post-Deverel-Rimbury tradition.

7 SURFACE TREATMENT

Six types of surface treatment were identified within the assemblage: smoothing; burnishing; applied clay slurry; basal flints; finger wiping, and grass wiping.

Simple wiping is the most common method of surface treatment occurring on a range of vessels from the middle Bronze Age through to the late Bronze Age. Most of the pots have been wiped on the interior and exterior, and there are a few example of exterior wiping only. Wiping may have been carried out with the fingers, or more probably with a pad of grass or straw. Impressions of some sort of vegetable matter are evident on the pottery surface.

Smoothing and burnishing occur within the late Bronze Age assemblage at Cobham. Burnishing on both surfaces varies from slight burnishing to a well-polished effect. Burnishing has been employed on vessels with very slightly flaring rounded rims, and slightly carinated or rounded bodies (Barrett's class IV bowls). Generally speaking, finer fabrics have been employed to make burnished pottery at Cobham, but some of the coarser flint-bearing fabrics have also been used, for example fabric F1. It is interesting to note that at Kemsley, similar flint-tempered fabric recipes were used to make late Bronze Age undecorated but burnished bowls. Finer sandy fabrics do not start to make a significant appearance until the decorated phase of the late Bronze Age. Burnishing vessels with profuse flint temper is not the easiest of tasks, and using a coarse fabric must have been a deliberate choice made by the potter. The fabrics used by the Cobham potters to make burnished bowls may suggest that certain fabric recipes were a popular tradition, and may serve as a useful chronological indicator.

Applied clay slurry or slip appears to have been confined to two late Bronze Age vessels, one of which is illustrated (Fig. 1, No. 8). The pottery appears to have been coated in some form of clay slurry which may or may not have been burnished; the condition of the illustrated sherd is very poor. Patches of this slip and vessel surface have abraded away to reveal the coarse flint fabric underneath. The application of this extra coating of clay may have helped reduce permeability in vessels intended for storage, or may have been used to make the pot more acceptable by disguising coil joins. Alternatively it could have been added in order to make the handling of the pot easier, or for a specific visual effect. Slipped jars and bowls are also a well-known phenomenon in the decorated phase of the late Bronze Age in southern England. The body sherds with possible slip found in pit 153 are from an FQ2 fabric vessel; this fabric type may signal a later technological phase of fabric production during the end of the late Bronze Age as discussed above.

Finger wiping occurs on two examples, including a very large coarser fabric jar. The exterior surface of the pot has deep, almost diagonal finger grooves, and evidence of fingertip impressions. This form of surface treatment is similar to the finger-wiped (finger-furrowed) sherds found in late Bronze Age assemblages, and is thought to be a constructional technique, used for bonding coil or slab joins, and for extending the height of the vessel wall (Hamilton 2002, 41). This particular example from Cobham has been poorly made, and the potter's fingers have caused the clay to become quite thin in places. This has ultimately created weaknesses in areas of the pot, which is evident from the type of fracturing, and may be suggestive of an inexperienced potter.

The occurrence of basal flints as a type of surface treatment has already been discussed.

8 EVIDENCE OF USE AND REPAIR

The Cobham Golf Course assemblage has several examples of sooting and/or burnt residue on a number of vessels. No limescale, scraping or pitting was observed.

Five examples show sooting on the interior of the vessel. This may indicate that the vessels were used in an inverted position over an open fire, or that they actually contained fire (Hally 1986, 275). Six examples have soot deposits on the exterior walls, and two of these examples are also sooted on the interior walls. It is interesting to note that one example is from a thin-walled, burnished bowl. This has been paralleled at Maiden Castle, and indicates that well-finished wares can be used for cooking (Brown 1991, 286). Four vessels have large amounts of burnt residue, including two large late Bronze Age jars of form type R5 and R9, which occurred in pits 137 and 161. There is no obvious correlation between fabrics and vessels which been used in a cooking context, indicating a lack of preference for cooking pots to be manufactured using a certain fabric recipe.

The most significant aspect, however, is that both middle and late Bronze Age pots were used for cooking at this location indicating that, although this was a funerary location in the early Bronze Age, it is more likely that it had become a focus for settlement activities during the middle and late Bronze Age.

The assemblage contains a single example of a middle Bronze Age bucket jar bearing a post-firing perforation (Fig. 1, No. 1). Holes drilled after firing are generally regarded as repair holes, enabling cracks or breaks to be repaired by binding (Cleal 1988, 139). Given the amount of time that it must have taken to make one of these vessels, it is suggested that the potter or its owner considered this particular pot to be worthy of repair. The pot has soot deposits on both the exterior and interior implying a domestic function such as cooking. It is curious, however, that the perforation was located at the end of the 'horseshoe' decoration, creating an 'eye' into the interior of the container. This could have been a functional addition to the vessel, having been inverted over a fire (soot on the interior) so that steam or smoke could escape; a spiritual addition to the pot as a metaphor for the human body or a stylistic addition to enhance the design motif.

9 OVERFIRED/REFIRED POTTERY

A number of sherds from six vessels (5 middle Bronze Age; 218 late Bronze Age) have the appearance of having been either overfired or refired. This takes the form of irregular firing resulting in an unusual degree of hardness which is variable across a sherd. The hardness is often observed as nearly isotropic in nature with a peculiar pale grey colour to the fabric. These sherds were from pits 123, 137, 149 and 161. This effect could have been caused by the pots having been caught in a fire within a structure such as a roundhouse, as was interpreted for similar sherds found in postholes at an early Iron Age site at Brighton Hill South (Morris 1992, 13-6), as the result of deliberate burning during a special event, or simply as firing errors during manufacture.

10 CHRONOLOGY

One of the key research aims was to establish a chronology for the site. On the basis of fabric, form and decoration, two distinct ceramic phases have been identified (approximately 1% of the assemblage could not be dated with any certainty):

Ceramic Phase 1: middle Bronze Age (Deverel-Rimbury), accounting for just over 11% of the overall assemblage (c 500-1100 BC)

Ceramic Phase 2: late Bronze Age (post-Deverel-Rimbury), accounting for 88% of the overall assemblage (900-800 cal BC)

There is no evidence within the area excavated as part of the Channel Tunnel Rail project for any pottery which could be identified positively as belonging to a transitional

phase linking ceramic phase 1 and ceramic phase 2. This is not to say that such evidence does not exist at the Cobham Golf Course settlement complex; in fact, it is most likely that such evidence does exist in the wider area just outside the easement. Radiocarbon dating of middle Bronze Age deposits from this and previous fieldwork needs to be conducted to determine how late or early the identified middle Bronze Age activity is before any further discussion of uninterrupted continuity at this site can be pursued with reasonable certainty. Identification of a transition phase can only be hinted at here within the Cobham assemblage, rather than singled out for detailed emphasis. It is noted simply for future reference.

10.1 Ceramic Phase 1 - Middle Bronze Age

This is characterised by a small assemblage of thick-walled, heavily flint-tempered, Deverel-Rimbury bucket-style jar/urns (Fig. 1, Nos 1-5). Decorative techniques include the application of finger impressed 'horseshoe' or horizontal cordons, and the surface of the pottery is simply wiped. The pottery derives from pit and ditch features and one layer (Tables 3-4).

10.2 Ceramic Phase 2 - Late Bronze Age

This ceramic phase is characterised as a late Bronze Age post-Deverel-Rimbury plain ware assemblage (Fig. 1, Nos 6-21) as defined by Barrett (1980). The pottery includes a variety of coarse, shouldered jars and fine bowls, in a range of fabrics, and with very limited finger-tip decoration. Within this phase the pottery derives from pits, ditches, postholes and a layer (Tables 3-4).

11 DISCUSSION

The later prehistoric pottery recovered from Zone 5 was mainly from the excavation area ARC CGC 98 at Cobham Golf Course, and derived from a series of pits, ditches, post holes and a layered feature. The majority of the ceramic assemblage can be placed within the Plain Ware phase of the late Bronze Age (post-Deverel-Rimbury), and a smaller assemblage can be assigned to the Deverel-Rimbury middle Bronze Age phase.

Table 3: Quantification of fabrics (sherd count) by feature

	Fabric													
Features	F1	F2	F3	F4	F5	F6	F7	F8	FI1	FQ1	FQ2	GF1	Q1	TOTAL
<i>Middle Bronze Age</i>														
feature 191					64									64
ditch cut 195					1									1
ditch cut 197					33									33
<i>Late Bronze Age (& redeposited middle Bronze Age)</i>														
pit 101		18												18
posthole 119	1	10	14					4						29
pit 123	16		1				2	2						21
ditch cut 133	15									1				16

	Fabric													
Features	F1	F2	F3	F4	F5	F6	F7	F8	F11	FQ1	FQ2	GF1	Q1	TOTAL
posthole 135		1	2											3
pit 137	7		339					45						391
pit 143	54		1										1	56
pit 147			1	5										6
pit 149	5			1	6	7								19
pit 153											4			4
pit 161	100	1					1	2	1	3				108
pit 163	1			5										6
layer 164	19	1	21		2	5	1	3						52
pit 173	7				1									8
posthole 177			1	2	3									6
posthole 179	4													4
posthole 187	2													2
ditch cut 199									5					5
ditch cut 222								5				6		11
pit 226	2					4								6
posthole 236			21			5	39							65
<i>Unstratified</i>	4				1									5
TOTAL	237	31	401	13	111	21	43	61	6	4	4	6	1	939

Middle Bronze Age pottery was recovered from one feature and two ditch cuts (191, 195, and 197) to the far north-east of the main east-west ditch. Pottery dating to this period was also recovered from pit 173 and layer 164, in association with late Bronze Age pottery. The late Bronze Age plain ware assemblage is particularly well represented in pits 137, 143 and 161, which are clustered to the east of ditch 133; one of the cooking pots from pit 137 has been radiocarbon dated to the 9th century cal BC. Late Bronze Age pottery also occurred in pits 123 and 163 to the west of this ditch. Pits 123, 143 and 161, and posthole 179, also contained fragments of briquetage, the ceramic material associated with salt production. There is good evidence for late Bronze Age settlement activity, in terms of cooking pots, jars, bowls, perforated clay slabs, loom weights and briquetage.

Table 4: Quantification of vessel forms (by count) by feature

	Form													
Feature	R1	R2	R3	R4	R5	R6	R7	R8	R9	A1	H1	B1	B2	TOTAL
<i>Middle Bronze Age</i>														
feature 191	2									1		1		4
ditch cut 197	1													1
<i>Late Bronze Age</i>														
pit 123		1		1					1				1	4
ditch cut 133													1	1
pit 137			2	1				1		3		5		12
pit 143			2	1								1		4
pit 161						1						2	1	4
layer 164											1	1		2
pit 226							1			1				2
posthole 236		1			1							1		3

	Form													
Feature	R1	R2	R3	R4	R5	R6	R7	R8	R9	A1	H1	B1	B2	TOTAL
TOTAL	3	2	4	3	1	1	1	1	1	5	1	11	3	37

To the north of the site was a linear stained area, which contained numerous fragments of burnt flint, charcoal and river pebbles. It is possible that this feature represents the eroded remains of a track way with which the ditch was associated (MoLAS 2001, 11). Late Bronze Age pottery, represented by small body sherds, was also recovered from this feature but is not part of the ARC CGC98 database.

One feature (context 364; not part of the ARC CGC98 database) contained cremated bone, which could not be identified with any certainty as human (MoLAS 2001, 16). A small amount of coarse pottery was found with the bone, and has been tentatively assigned to the late middle Bronze Age. It is interesting to note that one of these sherds is overfired or refired. This pottery may possibly belong to a cremation urn, or a pot selected to accompany a deceased person. The pit is to the south of the settlement site, and may possibly be part of a cremation or burial site.

It may be significant that there appear to be parts of sets of late Bronze Age vessel forms in this rather modest assemblage (after Woodward 1998-9). There is a jar type with rounded shoulder (R3) and a bowl type with rounded shoulder (R2); there is a jar type with an angled shoulder or carinated profile (R6) and a bowl type with an angled shoulder or carinated profile (R8).

In summary, this assemblage from Cobham contains sherds from both the middle Bronze Age jar/urn tradition and the late Bronze Age plain ware tradition. The character of the pottery suggests two phases of settlement activity represented by utilitarian pottery for local consumption reliant on exploiting local clay resources. Activity at this part of the site appears to cease by 800 BC on the basis of both one radiocarbon date and the absence of pottery which can be assigned to the decorated phase of the late Bronze Age. There is no evidence from this excavation which can be used to identify a transition from the middle to late Bronze Age period. Apart from the settlement site at Kemsley, there are few sites within the Kent area that have produced good assemblages of later Bronze Age pottery and, consequently, the transition is represented by a ceramic tradition that is not very well understood.

12 CATALOGUE OF ILLUSTRATED POTTERY

(PRN, Pottery Record Number)

Figure 1

12.1 Middle Bronze Age

1. Bucket jar/urn; R1; fabric F5; applied 'horseshoe' shaped cordon with fingertip impressions and repair hole or eyelet; PRN 1094-95; context 196, ditch 197.
2. Bucket jar/urn; R1; fabric F5; PRN 1131, context 190, feature 191.
3. Bucket jar/urn; R1; fabric F5; PRN 1132, context 190, feature 191.
4. Decorated body sherd; fabric F5; applied cordon with finger-tip impressions; PRN 1068, context 190, feature 191.
5. Angled, shouldered sherd; A1; fabric F5; PRN 1069, context 190, feature 191.

12.2 Late Bronze Age

6. Round-shouldered bowl; R2; fabric F3; burnished both surfaces; PRN 1007, context 122, pit 123.
7. Jar; R4; fabric F1; possible slashed decoration on rim top; PRN 1008, context 122, pit 123.
8. Jar; R9; fabric F3; possibly both slipped and burnished externally; PRN 1006, context 122, pit 123.
9. Round-shouldered jar; R3; fabric F3; wiped externally; finger-tip impressions on interior of rim top; PRN 1013, context 136, pit 137.
10. Jar; R4; fabric F1; wiped on both surfaces; PRN 1015, context 136, pit 137.
11. Round-shouldered jar; R3; fabric F3; wiped on both surfaces; burnt residue on both surfaces; PRN 1022-3, context 136, pit 137.
12. Angled-profile bowl; R8; fabric F3; burnished on both surfaces; PRN 1026-9, context 136, pit 137.
13. Flat base; B1; fabric F1; flint 'grits' on base underside; PRN 1018, context 136, pit 137.
14. Round-shouldered jar; R3; fabric F1; PRN 1031, context 142, pit 143.
15. Round-shouldered jar; R3; fabric F1; PRN 1033, context 142, pit 143.
16. Shouldered jar; R6; fabric F1; finger-wiped on both surfaces; burnt residue on upper vessel exterior; PRN 1049-50, context 160, pit 161.
17. Ovoid jar; R7; fabric F1; soot/burnt residue on upper vessel interior; PRN 1100, context 225, pit 226.
18. Jar; R5; fabric F7; diagonal finger impressed grooves; PRN 1106, context 235, pit 236.
19. Bowl; R2; fabric F7; burnished internally; PRN 1118, context 235, pit 236.

20. Splayed, flat base; B2; fabric F3; PRN 1009, context 132, ditch 133.

21. Possible handle or boss; H1; fabric F7; PRN 1079, layer 164.

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