AML Report 3707
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TITLE Wood Preserved by Contact with Metal Finds from the Grave of a Saxon Princess at Swallowcliffe Down, Wiltshire. AML site 950.

AUTHOR Jacqui Watson

DATE 15.7.82

ABSTRACTS

Wood identification report, and reconstruction of bed from the wood grain patterns preserved on the iron fittings. A catalogue of the iron objects studied is also included.

KEYWORDS

Wood, hardwood, conifer, metal preserved, iron, copper alloy, bed, bucket, casket, purse mount, knife, Saxon.

THIS REPORT IS Level III

THE INFORMATION IN THIS REPORT IS PROVIDED ON THE UNDERSTANDING THAT ITS AUTHOR WILL BE CONSULTED IF THE INFORMATION IS TO BE EDITED FOR ANY FURTHER PUBLICATION. SUCH CONSULTATION SHOULD ALSO INCLUDE PROVISION OF PROOFS FOR CHECKING AT ALL STAGES IRRESPECTIVE OF WHETHER ALTERATIONS HAVE BEEN MADE TO THE ORIGINAL TEXT, AS WELL AS FORMAT, LAYOUT, AND FRAMEWORK WITHIN WHICH ANY CONDENSED VERSION IS TO APPEAR, ESPECIALLY IF ATTRIBUTION IS TO BE MODIFIED.

ANCIENT MONUMENTS LABORATORY

MATERIAL WOOD

SITE: SWALLOWCLIFFE DOWN ..... **(DATE:**

SHEET: 1 .....

AM No	X-Ray No	SEM Stub	Description and Report	Ref No
820371		A.109	Wood from iron bound bucket: Taxus.sp (Yew).	780454
820372		A.110	Wood from copper alloy mounted casket: Acer.sp (Maple).	
820373		A.112	Wood from copper alloy bound bucket: Taxus.sp	
820374		A.140 A.159	Organic material from under the purse mount: wood in a very degraded condition, but the features observed include - T.S. semi-ring porous with narrow rays. R.L.S. simple perforation plates, with some remains of spiral thickening in the vessels. Probably one of the Rosaceae family, such as Prunus.sp (Cherry).	
820375			Mineral replaced wood from iron bed fittings: all were found to be Fraxinus.sp (Ash).* Many had traces of jointing, and this is discussed below.	
820376			Mineral replaced wood on small eyelets: Fraxinus.sp These are probably related to the bed structure and are discussed along with the other bed fittings.	
			Two iron knives with mineral replaced organic on their tangs: not wood, probably horn or bone.	750205

* Aldred refers to the use of Ash for beds in the Roman period, because of the natural springyness of this wood.

Reconstruction of bed from the grain of the mineral replaced wood found on the iron objects.

1. Large iron bar, possibly a handrail, measuring 285mm long with spikes covered in wood 32mm long. The main axis of the wood lies along the length of the bar, with the spikes piercing through and the bar resting on a radial section (R.L.S) of the wood. Because of the grain direction on the large eyelets (mentioned below), the bar must have been attached to the narrow edge of a plank that had been flat sawn, and therefore exhibiting faces of mainly tangential section (T.L.S), see Fig.1. According to Morgan (1975) Ash timbers are usually flat sawn as the wood tends to split along the annual rings.

Wood is preserved on the bar some distance from the spikes, but does not extend along the whole length. Possibly the plank has been cut away to afford a grip on the handrail.

2. Large eyelets are split spiked loops that have been put through the planking and their ends folded over to secure them. The eyelets could have been either hammered through the plank or put through made holes. The latter seems more likely as on x-radiograph there are no traces of wood between the spikes, and the loops do not show signs of distortion that would have taken place if they had been forced through the wood.

All the eyelets have been put through the tangential surface of the plank, with the "eye" arranged vertically (see Fig.1). The depth of wood on the shanks of the eyelets, that can be measured, is between 21-23mm, and this measurement gives the thickness of the planks.

Two of the eyelets have traces of leather or cord passing through the loop, W750181 and W780491, (see Miss Crowfoot's report).

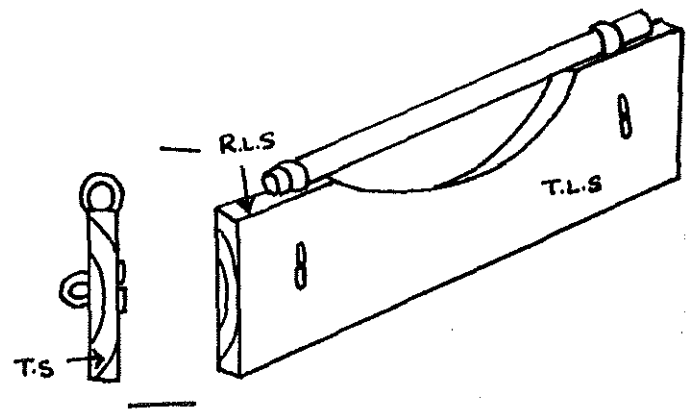


Fig.1 Relationship of large iron bar and large eyelets.

3. Headboard stay, a large curved piece of iron spanning 362mm, and attached to the bed structure by two different types of terminals. One is shaped to fit over the top of a plank with a smooth curved surface. This terminal is broken and the maximum width of plank it can be attached to, in this condition, is 12mm. The preserved wood has a tangential section. The other terminal is a flat plate secured to the bed structure with a large iron nail. The preserved wood remains only on the plate and can be seen as a narrow strip, 14mm thick, lying at right angles to the main axis of the headboard stay. The preserved wood has a tangential section.

The sections of mineral preserved wood do not correspond to those of the handrail and large eyelets. Possibly this piece of ironwork was mounted on seperate pieces of wood jointed into the bed framework.

4. Riveted straps associated with the footboard. There are six similar straps, all incomplete, but some of the smaller ones may be fragments of the same item. Three were found at each corner.

W750192, largest piece has evidence of jointing with two pieces of wood lying at right angles to one another. Both replacements are of tangential sections. Other fragments of iron have tangential surfaces preserved on them.

W780390, only one fragment has signs of jointing, an oblique radial surface with a tangential surface at right angles to it. Other fragments of iron have radial surfaces preserved on them.

These straps were probably used to join two pieces of wood together, but their exact alignment with the other fittings is difficult to interpret.

5. Four thin iron plates attached to wood by small rivets or nails, although scattered over the northern half of the grave, are thought to be associated with the headboard. As none are complete they may be the remaining fragments of one thin iron bar. All show two pieces of wood joined together with a 1mm gap between the wood sections. The upper half appears to be a tangential section with varying depth of between 10-14mm. The lower half a radial section between 12-13mm deep. The different wood sections presented by the two planks may be a result of either a) one plank butt jointed to the edge of another plank. or b) two planks joined together, one having been sawn from the edge of the trunk, and the other across the centre.

6. W750176, an iron strap with folded ends that appear to have been driven into wood. An oblique radial surface has been preserved along the length of the strap. If this strap belongs to the same wooden structure as the

handrail and large eyelets, it must have been mounted vertically on the planking.

7. Large riveted straps. These were found in pairs running in two lines down the length of the grave. None of the pairs join together any longer, the pair with the longest remaining rivet shanks (W750185) gives a minimum distance between the two straps of 25mm. Some of the straps are stepped, as if they have been hammered over the join of two pieces of wood of different thicknesses or having tapering sections. The surfaces preserved vary from tangential to radial, and in the majority of cases the main axis of the wood lies at right angles to the length of the straps.

It is difficult to incorporate these straps onto the same wooden structure as the handrail and large eyelets. The preserved wood surfaces are very variable in their direction, and appear to have been mounted on planks thicker than the ones the eyelets were pushed through. Possibly they belong to some other piece of carpentry associated with the burial.

8. Small eyelets, split spiked loops that have been put through wood and their ends folded over to secure them, the points sometimes having been forced back into the wood. The complete examples vary between 23-34mm in height. All have been put through tangential surfaces, with the eye in line with the main axis of the wood. The depth of wood preserved on these eyelets falls into three categories: a) 11-14mm, six examples; b) 9mm, four examples; c) ones with jointing, two examples. W780331, each side of the eyelet shank has three sections of preserved wood, the middle section always with grain direction at right angles to the other two. This could be a result of the eyelet passing through a piece of wood 6mm thick sandwiched between two pieces of wood 3mm and 6mm thick and lying at right angles to it; or an off centre tongue and groove joint where two pieces of wood approximately 15mm thick meet at right angles. All types were scattered over the grave, and it is difficult to interpret their relationship. However, the thicknesses of the wood preserved on them and evidence of jointing suggest that they belong to a structure other than the main planking of the bed.

In many examples, traces of a cord passing through the eyelet were observed, along with traces of textile covering the looped end(see Miss Crowfoot's report). Possibly these small eyelets were used to secure a fabric lining of some kind to the bed structure.

9. Small nails, all of which have been forced through tangential wood surfaces, and their points hammered back into the wood. All have traces of jointing,

and there are two distinct types represented: a) two pieces of wood with their grain lying at right angles to each other. Both sections of wood are usually between 9-12mm thick, and could be part of a rebated or a lap joint (Hodges, 1964). b) Three sections of wood preserved on all sides of shank, with middle section always lying at right angles to the other two. This is the same jointing as seen on the small eyelet W780331.

Many of the nails have textiles replaced on the heads (see Miss Crowfoot's report).

From their positions in the grave, the nails may be part of a wooden lattice fixed to the base of the bed, and possibly the sides. The small eyelets appear to be incororated in such a structure. This latticework may have supported the mattress, which could have been held in place by cords attached to the small eyelets.

10. Square plates riveted together with wood between them. Two of these objects were found lying a few inches apart in the grave, and they sandwich between them 6mm of preserved wood. The plates are attached to radial surfaces and are pierced in the centre. They could be all that remains of a wooden object, and not in any way related to the main bed structure.

References

Aldred,C., (1957) "Furniture: to the End of the Roman Empire", in A HISTORY OF TECHNOLOGY, Vol II, 221-239, Ed. Singer,C.; Holmyard,E.J.; Hall,A.R.; and Williams,T.I., Clarendon Press, Oxford.

Hodges,H., (1964) ARTIFACTS, 112-122, John Baker, London.

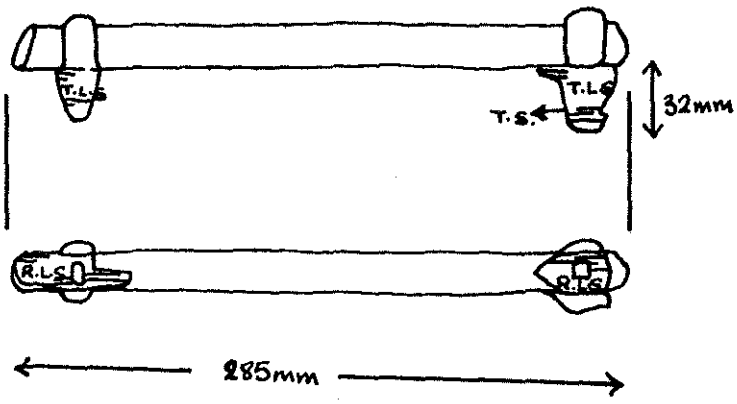
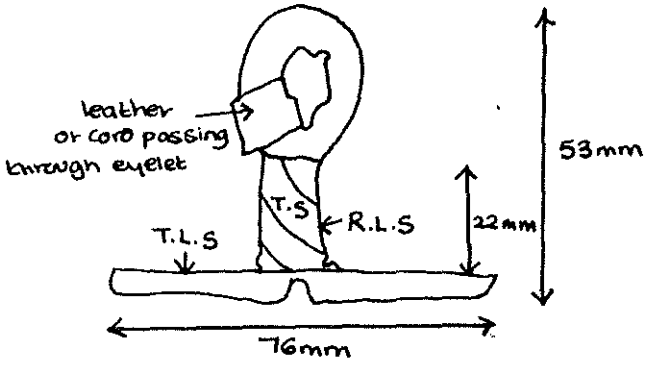
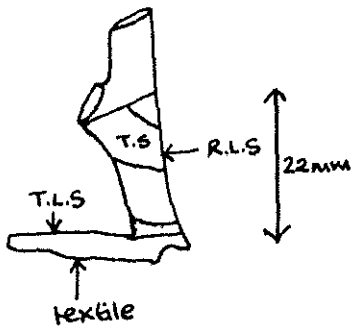
Morgan, R.A., (1975) "The Selection and Sampling of Timber from Archaeological Sites for Identification and Tree-ring Analysis", JOURNAL OF ARCHAEOLOGICAL SCIENCE 2, 221-230.

ANCIENT MONUMENTS LABORATORY

MATERIAL WOOD

SITE: SWALLOWCLIFFE DOWN ..... **(DATE:**

SHEET: 6 .....

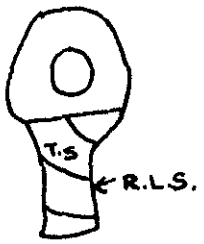
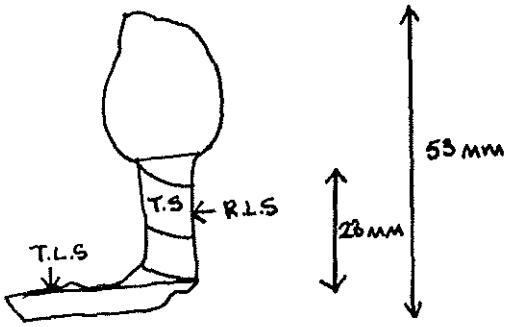
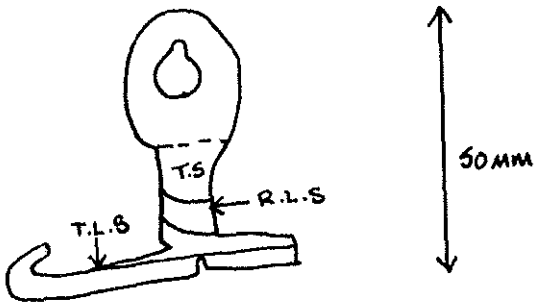
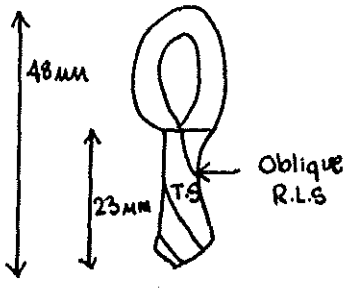
AM No	X-Ray No	Photo No	Description and Report	Ref No
			"hand rail": 	
	A4238		large eyelets: 	W760181 S: 1' 11" W: 12"
	A4275			W750183

ANCIENT MONUMENTS LABORATORY

MATERIAL WOOD

SITE: SWALLOWCLIFFE DOWN ..... **(DATE:**

SHEET: 7 .....

AM No	X-Ray No	Photo No	Description and Report	Ref No
				W. 750184
	A4238			W750185 S 2'6" E 2'8"
	A 4238			W750190 S 3' E 3'4"
				W780254 S 3'8" E 2½"

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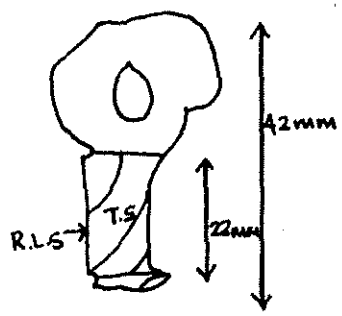
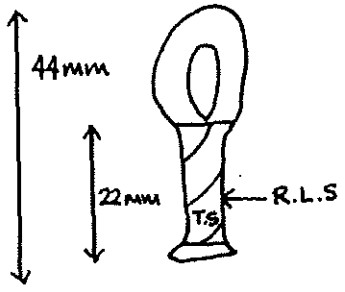
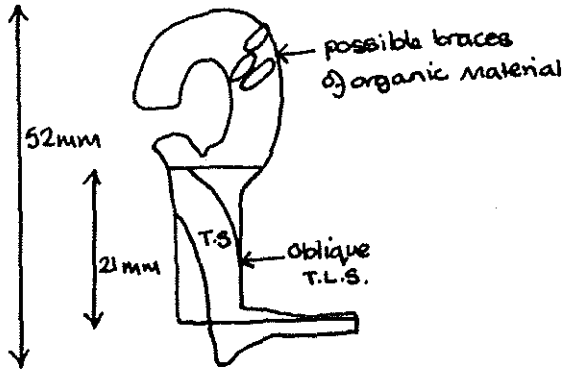
MATERIAL WOOD

SITE: SWALLOWCLIFFE DOWN ..... **(DATE:**

SHEET: 8 .....

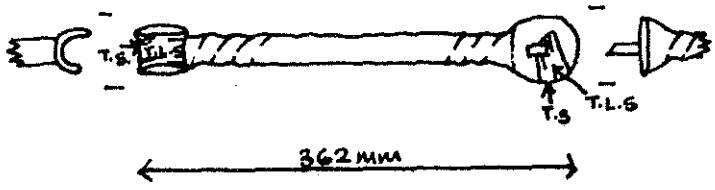
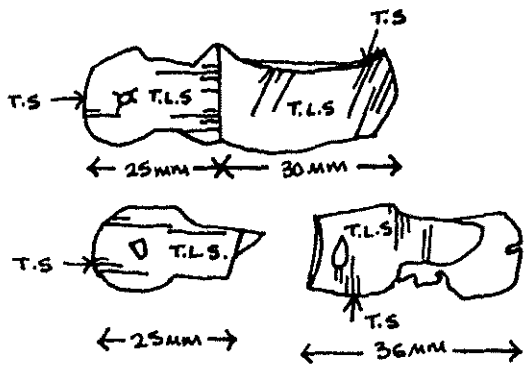
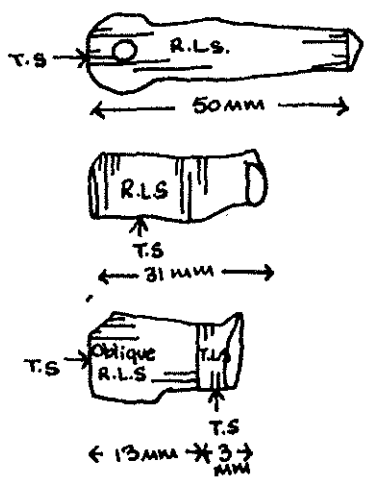
AM No	X-Ray No	Photo No	Description and Report	Ref No
	A4238			W780387 S 1'4" E 2'3"
				W780423 N 11" E 7"
	A4238			W780491 S 7" W 1'9"

ANCIENT MONUMENTS LABORATORY

MATERIAL WOOD

SITE: SWALLOWCLIFFE DOWN ..... (DATE:

SHEET: 9 .....

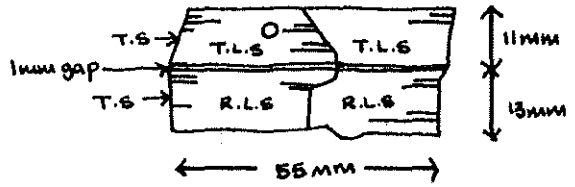
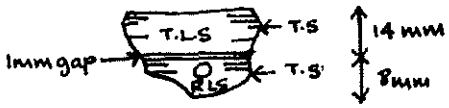
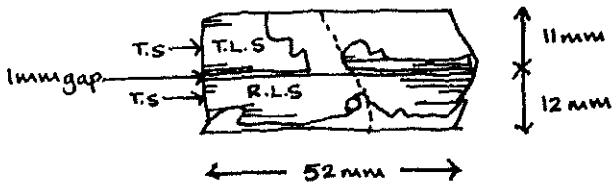
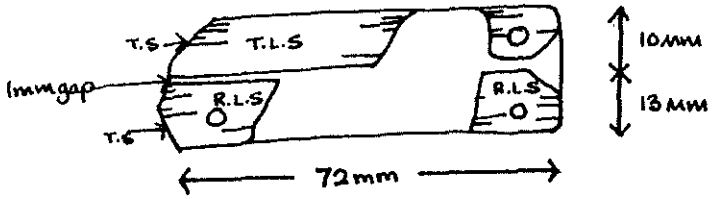
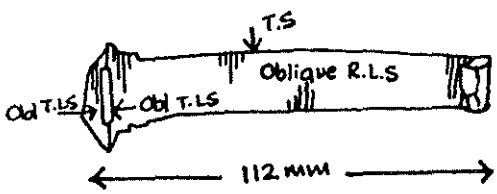
AM No	X-Ray No	Photo No	Description and Report	Ref No
			headboard stay:  	W150192 S 3'4" E 3'8"
				W180890 S 4'2" E 8"

ANCIENT MONUMENTS LABORATORY

MATERIAL WOOD

SITE: SWALLOWCLIFFE DOWN ..... (DATE:

SHEET: 10 .....

AM No	X-Ray No	Photo No	Description and Report	Ref No
				W780328 N 2" W 5"
				W780359 S 9" E 1½"
	A4275			W780446 S 10" W 1"
	A4275			W780482 N 2' W 2½"
				W750176 S 3" E 1'6"

ANCIENT MONUMENTS LABORATORY

MATERIAL WOOD

SITE: SWALLOWCLIFFE DOWN ..... **(DATE:**

SHEET: 11 .....

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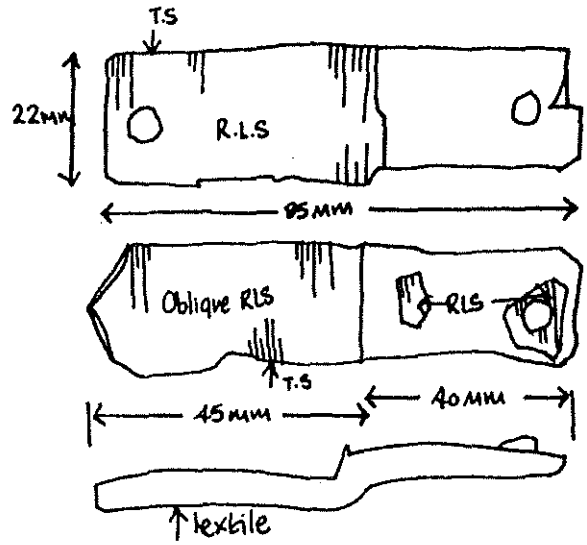
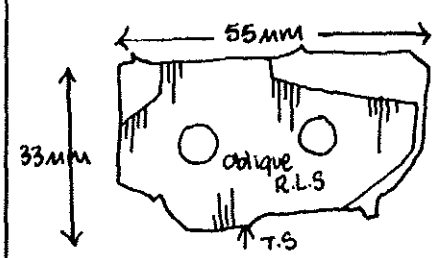
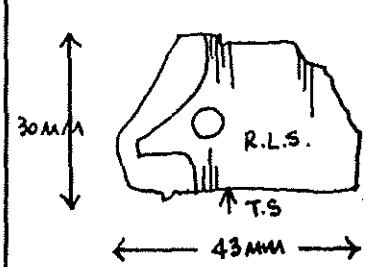
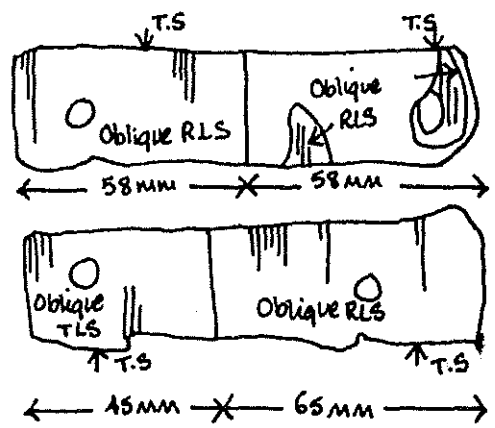
				W150170 S 2' W 7"
				
				
				W760177 S 6" E 1' 8"

ANCIENT MONUMENTS LABORATORY

MATERIAL WOOD

SITE: SWALLOWCLIFFE DOWN ..... (DATE:

SHEET: 12

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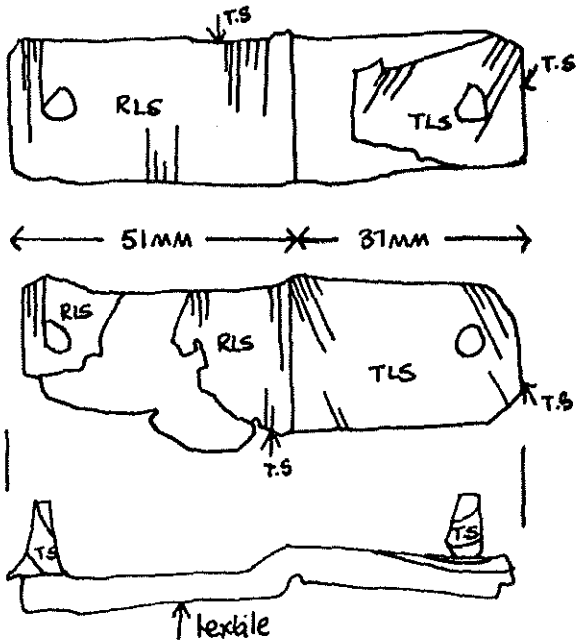
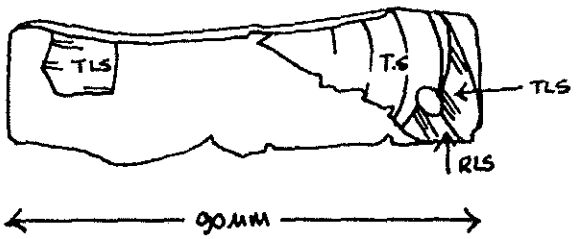
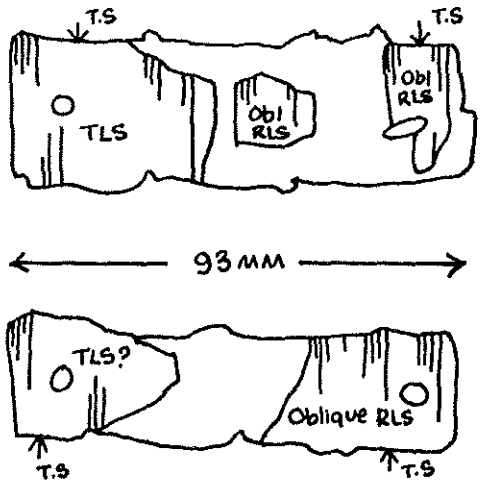
				W750178
				W780317 N 2' E 1"
				W780321 S 2' 6" E 3'

ANCIENT MONUMENTS LABORATORY

MATERIAL WOOD

SITE: SWALLOWCLIFFE DOWN ..... (DATE:

SHEET: 13 .....

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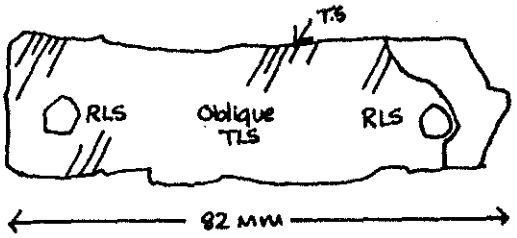
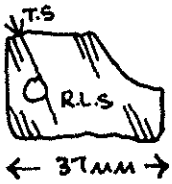
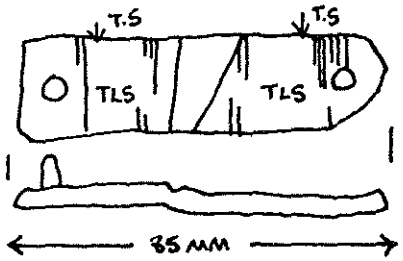
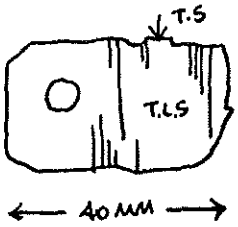
				W780325 S 1'7" W 4"
				
				W780325 S 10" W 12"
				W780333 N 1'5" W 2"
				W780428 S 9" W 1'3"

ANCIENT MONUMENTS LABORATORY

MATERIAL WOOD

SITE: SWALLOWCLIFFE DOWN ..... (DATE:

SHEET: 14 .....

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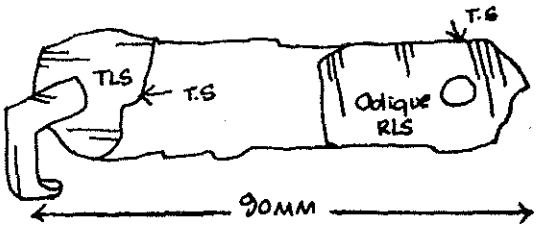
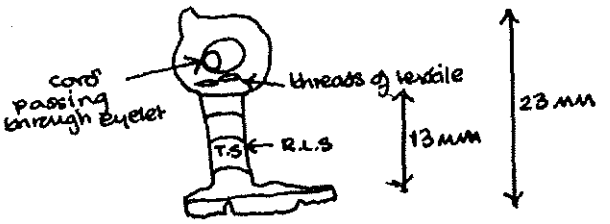
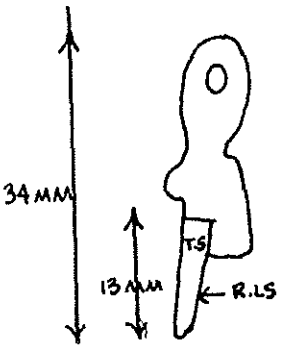
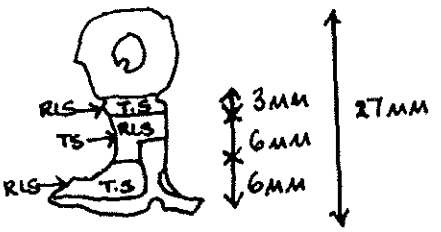
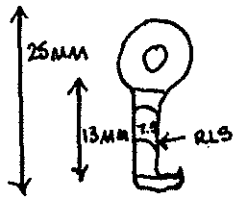
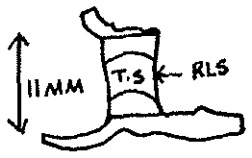
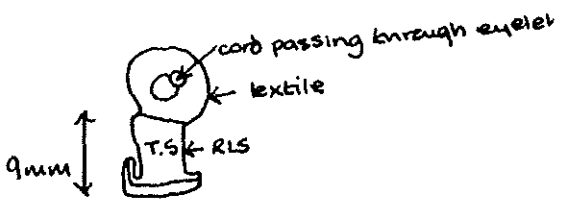
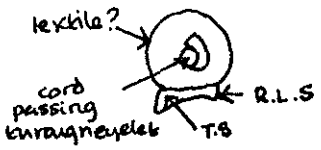
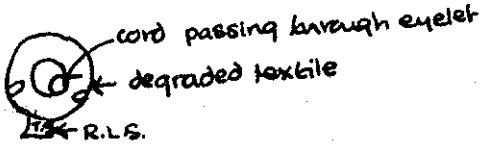
				W780457 S 4' E 2'2"
			Small eyelets:	
	AA275			W750189 S 3'4" W 3"
	AA275			W750190 S 3'3" W 3"
	AA275			W780551

ANCIENT MONUMENTS LABORATORY

MATERIAL WOOD

SITE: SWALLOWCLIFFE DOWN ..... **(DATE:**

SHEET: 15 .....

AM No	X-Ray No	Photo No	Description and Report	Ref No
	A4275			W780381
	A4275			W780355 N 11" E 7"
				W780376 S 1'3" E 2'3"
				W780399 N 2" E 1'10"
				W780403 S 3' ½" E 2' 2"
				W780407 N 6" E 2"

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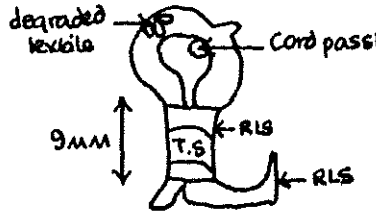
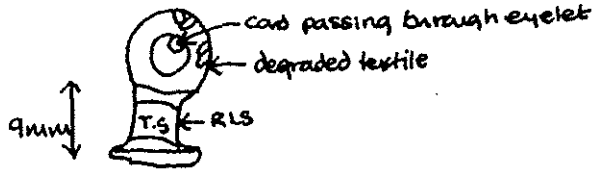
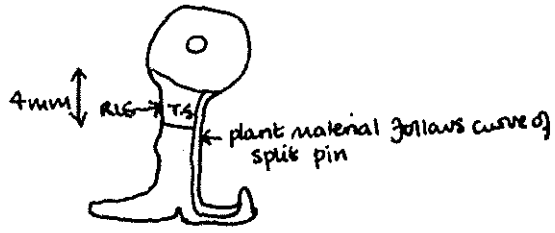
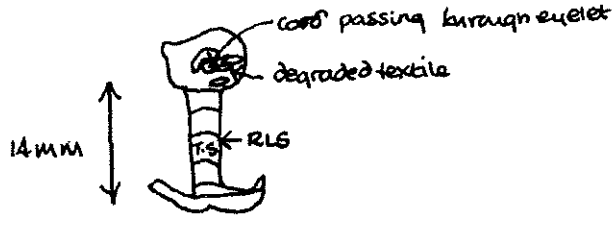
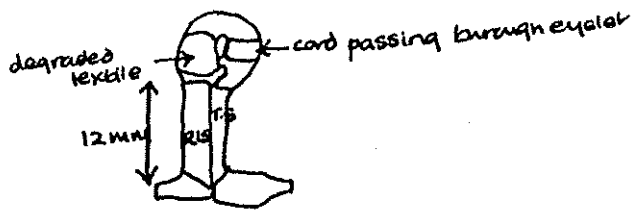
SITE: SWALLOWCLIFFE DOWN ..... (DATE:

SHEET: 16 .....

AM No	X-Ray No	Photo No	Description and Report	Ref No
				W780419 N 1'6" W 4½"
				W780430 N 1" W 2'
	A4275			W780444 S 3' 11" E 1' 4¼"
				W780470 S 2' 6" E 1' 4½"
				W780486 S 2' 9" E 3' 4"

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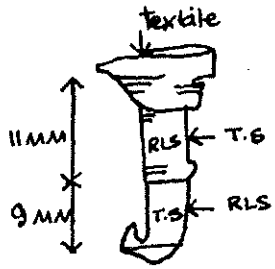
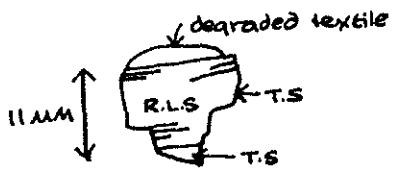
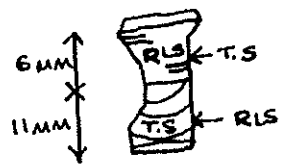
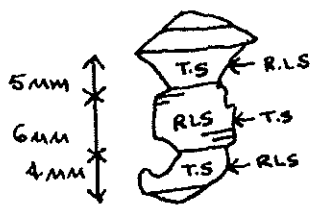
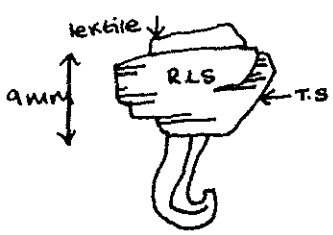
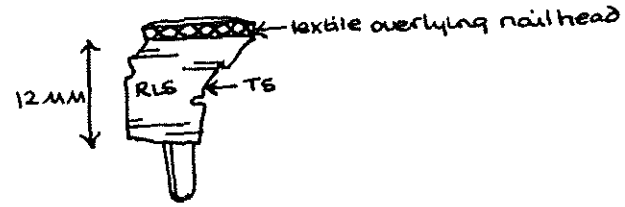
MATERIAL WOOD

SITE: SWALLOWCLIFFE DOWN ..... (DATE:

SHEET: 17 .....

AM No	X-Ray No	Photo No	Description and Report	Ref No
			Small nails:	
	A4275			W 750182 S 8" W 1'8"
				W 750205 under coffin
	A4275			W 780316 S 2' E ½"
	A4275			W 780335 S 2'2" E 1' 8"
	A4275			W 780355 N 11" E 7"
	A4275			W 780367 N 1'½" E 1'5"

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SITE: SWALLOWCLIFFE DOWN ..... (DATE:

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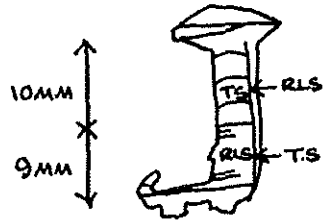
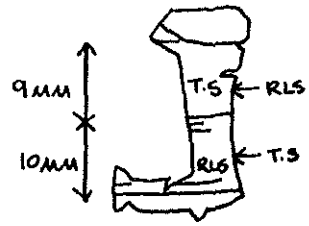
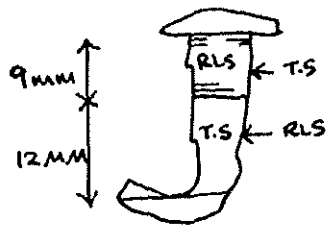
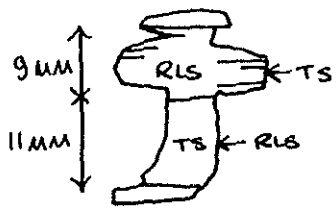
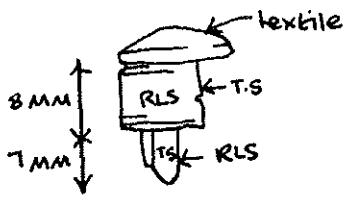
AM No	X-Ray No	Photo No	Description and Report	Ref No
	A 4275			W 180424 N 1'9" E ½"
				W 180450 N 1" W 2'
	A 4275			W 180449 S 3'6" E 1' 2"
	A 4275			W 180450 S 3'2" E 1'1½"
	A 4275			W 180453 S 2' 11" E 9"

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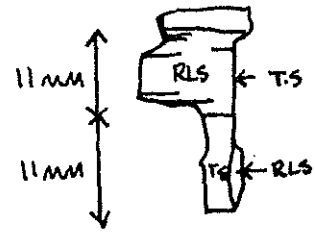
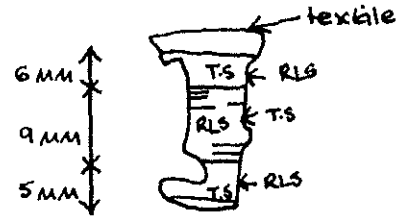
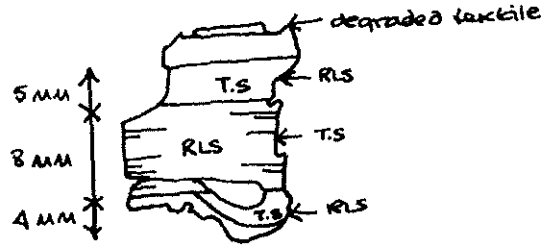
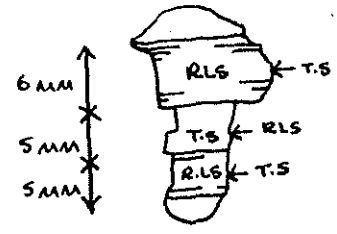
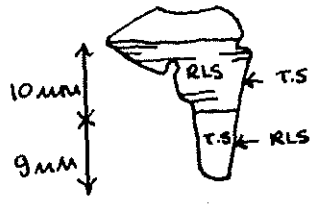
MATERIAL WOOD

SITE: SWALLOWCLIFFE DOWN ..... (DATE:

SHEET: 19 .....

AM No	X-Ray No	Photo No	Description and Report	Ref No
	A4275			W780468 S 3' 8½" E 1'5"
	A4275			W780473 S 3' 10" E 2' 1¼"
	A4275			W780474 S 3' 8" E 2' 3¼"
	A4275			W780485 N 1' 11¼" W 1'
	A4275			W480497 N 1'-11½" W 10½"

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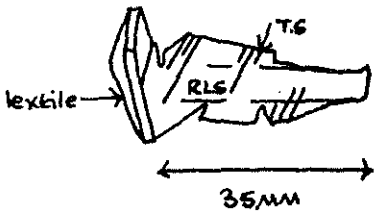
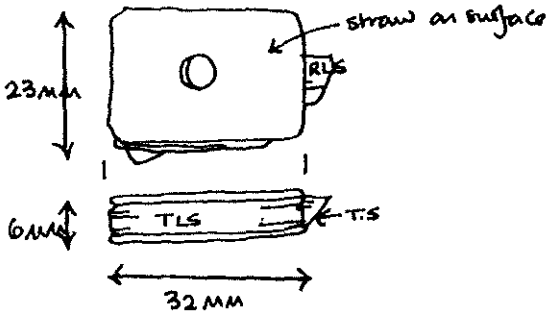
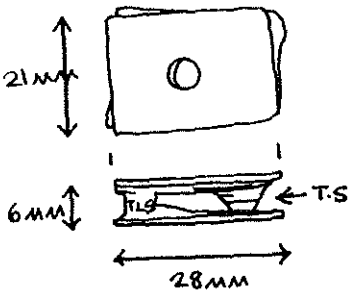
MATERIAL WOOD

SITE: SWALLOWCLIFFE DOWN ..... (DATE:

SHEET: 20 .....

AM No	X-Ray No	Photo No	Description and Report	Ref No
	AA275			W780379 S 3' 4" E 3' 1"
				S 1' E 1' 7"
				S 1' 4" E 1' 9"