

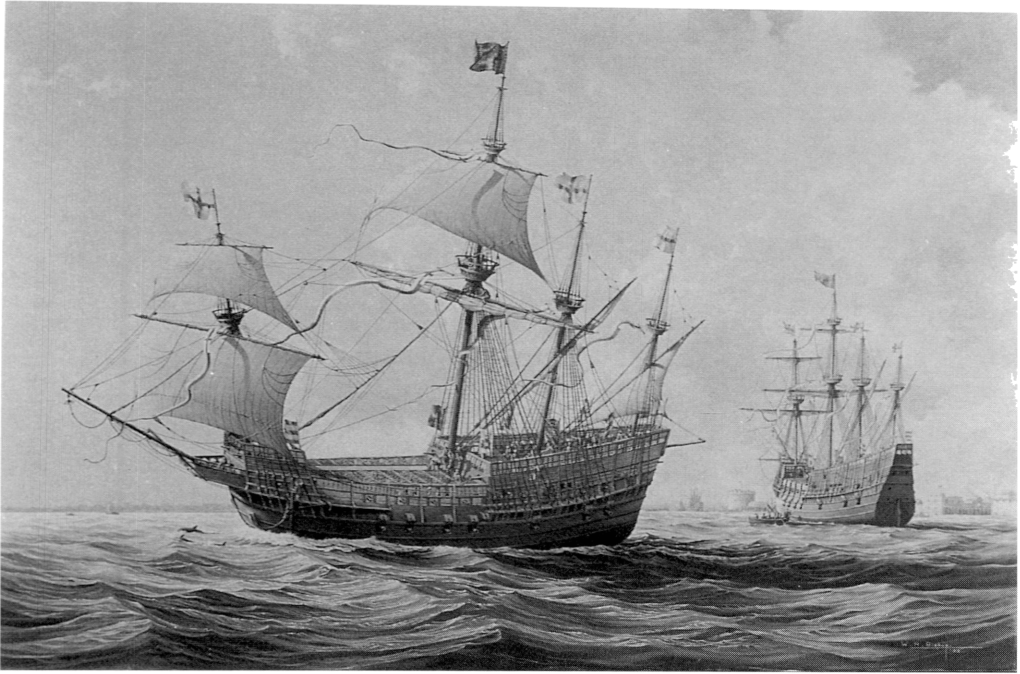
# TUDOR FURNITURE FROM THE *MARY ROSE*

David Knell

The warship *Mary Rose* was built at Portsmouth in 1509–10 as part of a major programme to strengthen the English navy and improve coastal defences as a means of safeguarding merchant ships using the Channel. On 19 July 1545, nine years after she had been partially rebuilt and refitted, the *Mary Rose* sank at Spithead, off Portsmouth, during a defensive skirmish with a large French fleet intending to invade England. As she was hoisting sail and going about to assist the *Henry Grace à Dieu*, the English flagship, the *Mary Rose* suddenly heeled and it seems that the weight of the water pouring through her open gunports made the list irreversible and, inevitably, fatal.<sup>1</sup> The ship descended rapidly to the seabed, where she lay heeled at 60 degrees from the vertical with the port side uppermost. By the late seventeenth or early eighteenth century the exposed port side and upper structures, weakened by biological attack and eroded by the abrasive currents, had collapsed and a hard layer of shelly clay had formed over the remaining silt-filled starboard side, protecting it and its contents beneath the seabed.<sup>2</sup> The lack of oxygen under this layer decelerated the microbiological degradation of the concealed part of the ship and many organic materials have been surprisingly well preserved. Unfortunately, iron — particularly wrought iron — has not fared as well and, with the exception of guns, has for the most part corroded away leaving only residual traces.

The wreck of the *Mary Rose* was rediscovered in 1971 and, after eleven years of arduous and meticulous excavation, the remains of the hull were raised and are now housed at Portsmouth Historic Dockyard. It is the salvaged contents which are naturally of most interest to the furniture historian, however, and it would be difficult to overstate their importance. The material clearly offers fresh scope for research and the advantages of examining artefacts excavated from an archaeological source (a rare opportunity in English furniture) are obvious enough. Firstly, since the *Mary Rose* furniture has been preserved purely by chance rather than by the more or less conscious process of selection usual in conventional survivals of early furniture, it is more likely to be a truly representative sample of everyday items (albeit in the limited context of a warship) than those pieces whose preservation has largely depended on their aesthetic, historical or qualitative merit. The *Mary Rose* furniture includes items which, because they were mundane and made from relatively perishable varieties of timber, would have stood little or no chance of survival in the normal course of events. Secondly, and just as significantly, we have the enormous benefit of a precise context, not only of a specific ship, and often of a clearly defined location on that ship,<sup>3</sup> but also a specific cut-off date.

Because the contents of the *Mary Rose* represent a moment frozen in time, historians have experienced the thrilling prospect of finding not only sixteenth-century chests, but chests still containing the remains of the clothing, weapons, books, jewellery and other articles placed there during that period.<sup>4</sup>



1. The *Mary Rose* at Spithead, off Portsmouth (modern reconstruction)

#### CHESTS

As might well be expected of items carried on board a ship, an overwhelming proportion of what may be broadly described as furniture (including that used merely for stowage) consists of chests. Evidence of at least 48 chests was found on the *Mary Rose*.<sup>5</sup> With the exception of some examples having dovetailed corners, all the chests are of boarded construction, either butted or rebated and either nailed or pegged together. The boarded chests include several simple crates which contained longbows or arrows. All these are of elm boards nailed together, with a pair of holes pierced at each end for rope handles. Naval inventories of the early Tudor period indicate that bows and arrows were commonly stored in chests and also mention the use of chests, presumably naval property, for storing several other supplies connected with ordnance and general dockyard provisions.<sup>6</sup> In a late fifteenth-century inventory for a ship named the *Barbara*, a single chest is listed under a separate entry for 'Storechestes', suggesting that empty chests were also sometimes provided by the navy for unspecified use.<sup>7</sup> A number of the chests found on the *Mary Rose*, however, appear to have been mainly intended for the storage of personal possessions and it seems likely that these were largely the private (and professional) property of individual members of the ship's company.

Most of the boarded chests not used as crates for bows and arrows bear clear traces of having originally been fitted with pairs of strap or staple (split ring) hinges and locks with externally mounted lockplates, and some of them have their end boards fitted with

the grain vertical and extended below the body of the chest to raise it from the floor. These vertical end boards generally have a portion cut out at the base in order to form the rudimentary feet conventional on this type of boarded chest. All the remaining boarded chests simply rest directly on the floor, and the dovetailed examples are also flat-based.<sup>8</sup> The footed chests lack any provision for handles and at least some of them, although pressed into service for storing their owner's belongings on board ship, may well have been intended primarily for ordinary domestic use on land. The higher examples of footed chest, in particular, do not at first seem ideally suited for shipboard storage and are essentially identical to many extant sixteenth- and seventeenth-century chests of standard domestic origin. We have to look a little deeper, however, before dismissing them outright as obvious interlopers. Marine chests generally served more than a simple storage function; as in the days of the Victorian clipper, they also provided the usual means of shipboard seating. The footed chests (aptly described as 'bench-chests' by the Mary Rose Trust) were, like many of their domestic counterparts, evidently intended as a space-saving combination of both a container and a stool or form (depending on length). Indeed, we can almost regard the footed chests as boarded stools or forms with a storage capacity, and, seen in this light, they were in fact items of hybrid furniture very well suited to the cramped living conditions on board ship. The advantage of their height over the normal flat-based chests increases their comfort and convenience as seats. Chests specifically described as 'shipchests' ('a shipchest att London with yren', 'Unam cistam vocatam shipcofre', 'a great ship chest standing at the stair's head')<sup>9</sup> or as 'sea chests' ('one sea Chest and another Coffre')<sup>10</sup> are mentioned in probate inventories of the fifteenth to seventeenth centuries but what form they took and in what ways, if any, they differed from conventional chests is not clear.<sup>11</sup>

The presence of dovetailed chests in the context of a sixteenth-century English ship may initially come as a surprise since the construction method is normally associated with Continental furniture and not that of English manufacture at this date. It is generally assumed that multiple dovetailing was an advanced technique little used in sixteenth-century England and that English furniture makers were largely restricted to boarded carpentry work or to the use of mortise-and-tenon joints for joined pieces. A great number of dovetailed chests were imported into England from places such as Germany and northern Italy during the Tudor and early Stuart periods and it is, of course, conceivable that the dovetailed chests found on the *Mary Rose* had been imported, or perhaps purchased when the ship visited foreign ports. Chests made on the Continent were apparently highly regarded in England at that time; the very fact that so many were imported suggests that they were considered to be superior to (or perhaps cheaper than) home products and the Guild of Coffers complained in 1483 that the vast number of chests being imported from Flanders could ruin their own trade.<sup>12</sup> Moreover, the navy regularly bought supplies such as softwood timber, ropes and cables from Continental sources and it is just possible that chests were occasionally included in the cargoes.

Yet there is no positive evidence to indicate that any of the *Mary Rose* chests are not of native manufacture. Indeed, it is evident that chests incorporating dovetailed work do have a long history in England. A monk who was present when the tomb of St Cuthbert (died 687, but reburied several times) was opened in 1104 observed that one

of the chests containing the remains was 'joined and united by the toothed tenons of the boards which come from this side and from that to meet one another, and by long iron nails'.<sup>13</sup> Dovetails have been noted in English house construction dating from the thirteenth century and, while relatively uncommon, they do occasionally appear on extant medieval English chests. Early examples of chests in which the front and back boards are dovetailed to the stiles have been recorded at Cound, Shropshire (mid-fourteenth century), Malpas, Cheshire (fifteenth century) and Neenton, Shropshire (early sixteenth century) and the framework on the ends of a late fifteenth-century chest at Westminster Abbey incorporates dovetailed joints.<sup>14</sup> Multiple dovetailing used to join wide boards at right angles — the type of dovetailing used in the *Mary Rose* chests — has been noted on a medieval (probably late fourteenth-century) chest at Haddon Hall in Derbyshire.<sup>15</sup> Early seventeenth-century English boxes in which the corners are joined by multiple dovetailing are not exceptionally rare. Indeed, the casual manner in which 'duftalled' chests, boxes and cupboard are mentioned in the ruling pertaining to the London Joiners' Company in 1632<sup>16</sup> suggests that the method was in common use by that time, and it may well be that the technique was far more widespread in England, particularly in the technically advanced atmosphere of naval dockyards, as early as the first half of the sixteenth century (and possibly somewhat earlier still) than the amount of surviving examples would lead us to believe. Perhaps the most likely explanation for the *Mary Rose* dovetailed chests, however, is that they were indeed made in England, but by immigrant (Flemish, German, Dutch or French) craftsmen. The fact that immigrant Flemish joiners were referred to as *skrynemakers* (chest makers) implies that they were particularly known for this type of work.<sup>17</sup>

One dovetailed chest (Figure 2) and a simple bench constituted the only furniture found in the barber-surgeon's cabin, a small compartment on the starboard side of the main gundeck. When discovered, the chest contained wooden ointment jars, German pottery jars, and an assortment of other medical equipment.<sup>18</sup> The basic features of this chest are typical of most of the dovetailed examples: the multiple-dovetailed corners were reinforced with nails; a wooden block was affixed to each end board and pierced to take a rope handle; and a lidded till was mounted at one end of the interior.<sup>19</sup> The base board of the chest was simply nailed in position. The chest lid, with battens nailed to its underside at each end, was affixed by staple hinges<sup>20</sup> and the front board had a lock with an externally mounted lockplate. The primary timber of the barber-surgeon's chest is walnut, with elm handle-blocks and beech battens.<sup>21</sup> The timbers used in the other dovetailed chests include elm, oak, walnut and poplar, with elm the primary timber in at least one of them.

While all the dovetailed chests are completely plain, a few of the boarded chests bear simple forms of decoration. Perhaps the most remarkable example of a decorated chest is a large boarded box (950 mm long by 400 mm wide) which was found on the main gundeck (Figure 3). This chest, constructed entirely of oak, originally had handle-blocks nailed to each end and the lid, with a hasp mounted on its underside, was affixed by staple hinges. There is no evidence of a till. The front board bears a mark (possibly of a merchant) within a shield outline below the lock cavity (Figure 4). This is flanked by rows of vertical channels, fourteen on each side and with circular depressions above and below each channel, which cover most of the remaining surface. The front board

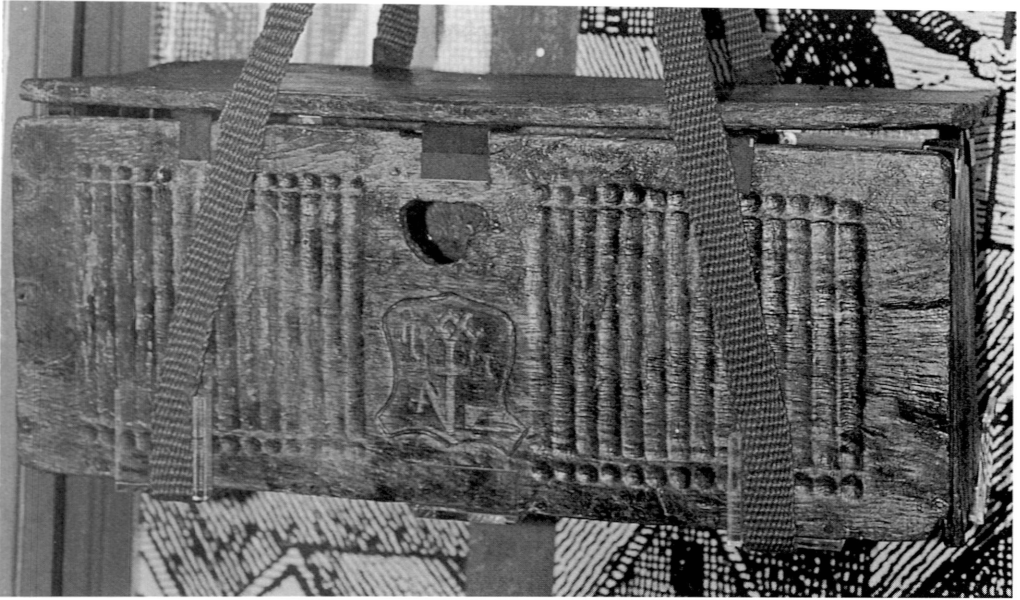




2. Dovetailed chest from the barber-surgeon's cabin

presents an enigma: both the shield outline and the mark within it appear to be inverted. An obvious conclusion is that the board has been reused from an earlier piece of furniture and deliberately inverted in order to allow the blank space previously below the shield to be used for the added lock. The nonsense this made of the shield was perhaps ignored as unimportant.<sup>22</sup> This scenario remains pure conjecture, however, since the board bears no evidence of having been re-used. There are no superfluous nail holes and, since the carved decoration leaves perfectly proportioned margins, it seems unlikely that the board has been reduced in any way (unless the channels were added later).

Chests decorated with crosshatching or incised geometric patterns were found and there are examples of lid boards with their ends repetitively notched in the manner typical of much boarded furniture or with separate mouldings pegged around the perimeter of the upper surface, creating the impression of a framed panel. Another form of decoration occurs on a nailed, boarded chest (1040 mm long and standing 575 mm high) which was found on the orlop deck (Figure 5). This is a footed chest, with inverted V-shaped portions cut out from the bases of the vertical end boards, and a pair of attractively shaped spandrel brackets were mounted below the front board — a unique feature among the *Mary Rose* chests, although similar in principle to those



3. Boarded oak chest with decorated front



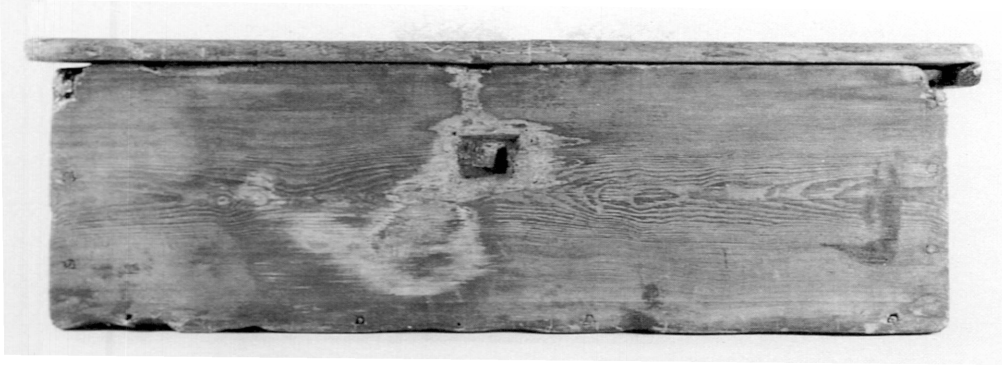
4. Mark within shield outline (detail of Fig. 3)



5. Boarded elm and oak chest with spandrel brackets

found on several contemporary chests from conventional sources.<sup>23</sup> In addition, the edges of the lids of both the chest itself and the till mounted inside are decorated with incised lines.<sup>24</sup> The chest is made entirely of elm, apart from oak used for only one of the spandrel brackets and the front and base of the till,<sup>25</sup> and its contents included a few gold and silver coins. In this case the strap hinges and hasp were mounted internally, but their position appears to have been somewhat arbitrary and in another example of a footed chest, made of oak and a little longer than the elm one, for instance, the strap hinges and hasp were fixed on the upper surface of the lid.

Two flat-based chests, recovered from the orlop deck, are startlingly modern in appearance and highly reminiscent of chests used by nineteenth-century seamen, in both timber and form (Figure 6). These are entirely of pine, the heavy boards (with an average thickness of 30 mm) being held together by large square pegs and originally reinforced by pairs of iron brackets at each corner. The front and back boards are canted, making the base considerably broader than the top and giving the chests stability in the manner typical of so many later chests designed for use on board ships. Both chests had locks and their lids, with battens at each end, were affixed by iron strap hinges. Each chest is provided with two tills, a lidded till on the left and an open one on



6. Boarded pine chest with canted front and back boards

the right, and the lidded till of one of the chests has a 'secret' compartment under a false bottom.

The timbers used in the other boarded chests include elm, oak, poplar and ash, and one of the first three timbers was used exclusively in some chests. It was noted that one chest bore traces of red and white paint.

#### POSSIBLE BUNKS

A cabin on the starboard side of the main gundeck, apparently that of a carpenter, was fitted with fixed work benches which may have doubled as 'bunks'.<sup>26</sup> These consisted of two oak, elm and poplar shelves arranged laterally, one either side of the central sliding door to the cabin. Each shelf, supported on oak battens, was approximately 130 cm wide and was provided with a stepped and lipped edge; one shelf was still covered with the remains of what may have been a hay-filled mattress.

#### STOOLS AND BENCH

The footed 'bench-chests' were supplemented as seating furniture by purpose-built stools. Three such stools were found on the *Mary Rose*, two of boarded construction and one wedged. The two boarded stools (identical, but one complete, the other consisting of end boards only) are made entirely from elm boards with an average thickness of 24 mm (Figure 7). The seat of the complete example is 424 mm long and the maximum length of the end boards is 300 mm. The construction is elementary: the seat was nailed to a pair of longitudinal side members which, in turn, were nailed to the rebated upper halves of the outer edges of the two end boards. The end boards were set slightly canted and with their grain vertical. The constructional form compares with stools shown in late mediaeval illustrations<sup>27</sup> and with several extant examples of the Tudor and early Stuart periods. But the decoration here is severely simple: the outer bottom edges of both the end boards and the side members are merely finished in a gently curved chamfer.



7. Boarded elm stool

The wedged stool, found on the main gundeck, consists of a rectangular oak seat (456 mm long by 280 mm wide and 28 mm thick) bored with four splayed holes to receive four stake-like legs, also of oak.<sup>28</sup> Two legs are round-section, the other two are square-section and no two legs are exactly the same (Figure 8). The top of each leg is notched to take a wedge. As far as the author is aware, this piece is the earliest known securely dated example of an English wedged stool. The long four-legged bench found in the barber-surgeon's cabin (mentioned above) is also of wedged construction and its general form resembles the traditional 'pig bench' (Figure 9).<sup>29</sup> The oak plank top is of tapering thickness (60 mm maximum) along its length and measures 1400 mm long by 200 mm wide. A staggered pair of round splayed holes are bored at each end to receive the four oak legs. A leg found *in situ* at the thicker end is somewhat longer than that found at the thinner end and it would seem that the low bench was intended to slope at a fairly pronounced angle. It has been conjectured that the bench, a work-surface rather than seating, was used by the barber-surgeon for preparing plasters or dressings.<sup>30</sup>

#### TABLES

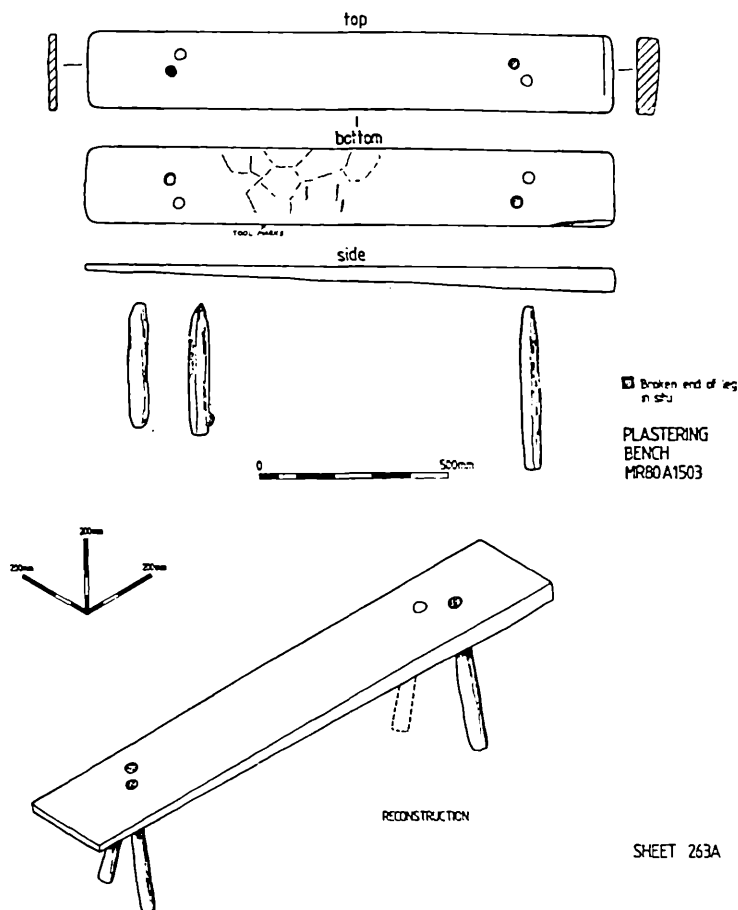
One of the most remarkable pieces of furniture found on the *Mary Rose* is a folding stand recovered from the main gundeck (Figure 10). It is of oak and is the only piece to incorporate the refinement of pegged mortise-and-tenon joints. The stand consists of two joined frames, one pivoting inside the other, and each frame, measuring 116 cm long by 75 cm wide, is made up of two decoratively chamfered uprights tenoned into



8. Wedged oak stool

top and bottom rails. At the points where the uprights meet the rails they are flanked each side by a shaped block resembling a buttress, which is a separate piece and also tenoned (with a single peg, like the tenons of the uprights) into the rails. The blocks lie flush against the uprights and were presumably glued to them. The chamfers of the uprights end in pyramid stops at the blocks and at the central pivot sections. The lower rails are shaped on the bottom edge with a shallow ogee arch. The upper rails, one of which is inscribed with the Roman numeral IV, bear central rebates on their lower edges, and various nail holes, and it seems likely that these upper rails were originally connected by three leather straps. A light table board could have rested loosely on top, making a 'campaign table', an easily portable and storable piece of furniture popular at the time for military use<sup>31</sup> and typical of those depicted in sixteenth-century illustrations. Just such a table, with turned rather than chamfered uprights, and draped with a table-cloth, is shown in Hilliard's portrait of Sir Anthony Mildmay, painted in about 1593.<sup>32</sup> The concept of folding furniture formed from a pair of pivoting frames is extremely early; several stools of this type survive from ancient Egypt and a Bronze Age example (c. 1200 B.C.) was discovered in northern Europe.<sup>33</sup>

The importance of the decorated folding stand is immediately obvious even to a casual observer, but our knowledge of furniture history can sometimes be advanced by the discovery of far less dramatic objects and two plain oak cross-bars found on the *Mary Rose* may be equally significant (Figure 11). They appear to be the primary components of two independent three-legged trestles of the kind used in pairs to



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9. Scale drawing of a wedged bench from the barber-surgeon's cabin

support a loose table board and are likely to be the earliest English survivals of the type. The cross-bars are similar but whether they were a pair for the same table is not known. Each cross-bar is pierced through with three rectangular mortises, two longitudinal and parallel at one end and one lateral at the other, and the mortises are angled so that the three legs would be splayed outwards. One rectangular-section oak leg was found *in situ* and several other timbers, some of which may have been other legs, were found close by. It would seem that the legs were kept in place by wedges rammed between the tenon of the leg and the mortise.

Independent trestles (or 'dormants', as they were apparently sometimes called) of precisely this kind are commonly shown supporting a table board, always covered with a table-cloth, in medieval illustrations<sup>34</sup> and they are frequently listed in sixteenth-century inventories ('a table lying on too trustles', 'a table with a pair of dormans', 'a table borde standinge upon a paire of trestells'<sup>35</sup>) but no English examples, apart from these remains from the *Mary Rose*, appear to have survived.



10. Joined oak folding stand from the main gundeck

#### MISCELLANEOUS ITEMS

Little survives of more sophisticated examples of decorated woodwork, either furniture or fittings, from the *Mary Rose*, but two fragments of carved oak recovered from the ship provide a tantalising glimpse of what must once have been. The 'Romaine' motif of a female profile within an arch, carved on the fragment of thick board (perhaps formerly part of a small door, Figure 12), is as evocative of the first half of the sixteenth century as the relatively complex design, with incised crosses, of the linenfold panel (Figure 13).

Several articles found on the ship, while not strictly furniture, may nevertheless be of particular interest to the furniture historian. Among these are two open containers found near the galley. They are made of elm boards crudely nailed together; charred on the inside, they apparently served as 'ash boxes' for carrying warm ashes from the galley fire (Figure 14). The end boards of each container are extended upwards, tapering towards the top, and pierced for a rope handle.





11 Two oak cross-bars (undersides)

Various methods of construction are represented in the furniture found on the *Mary Rose*: wedged, boarded (both nailed and pegged), dovetailed and mortise-and-tenon joined. Smaller objects could be created by simply carving them from a solid block of wood (a craft particularly familiar to marine carpenters); a 'dug-out' technique, normally regarded as unsophisticated and generally associated with oblong bowls or other primitive items of unturned treen, was used to make five boxes discovered on the ship.<sup>36</sup>

#### TIMBER

As we have seen, the fairly wide range of timber used for the *Mary Rose* furniture and stowage includes oak, elm, walnut, poplar, beech, pine and ash. All these woods are also represented in either the structure of the ship or other equipment and items used on board.<sup>37</sup> It seems likely that at least some of the timber used to make the standard furniture and fittings supplied by the Navy to furnish one of its ships came from the same sources as that used in the construction of the ship itself.<sup>38</sup> Most hardwood timber employed for shipbuilding was supplied locally, as close to the dockyard as possible, since transport was expensive;<sup>39</sup> much of that used in Portsmouth may have come from the nearby Forest of Bere, just to the north.<sup>40</sup> The *Mary Rose* was brought to the



12. Board fragment with 'Romaine' design



13. Panel fragment with linenfold decoration



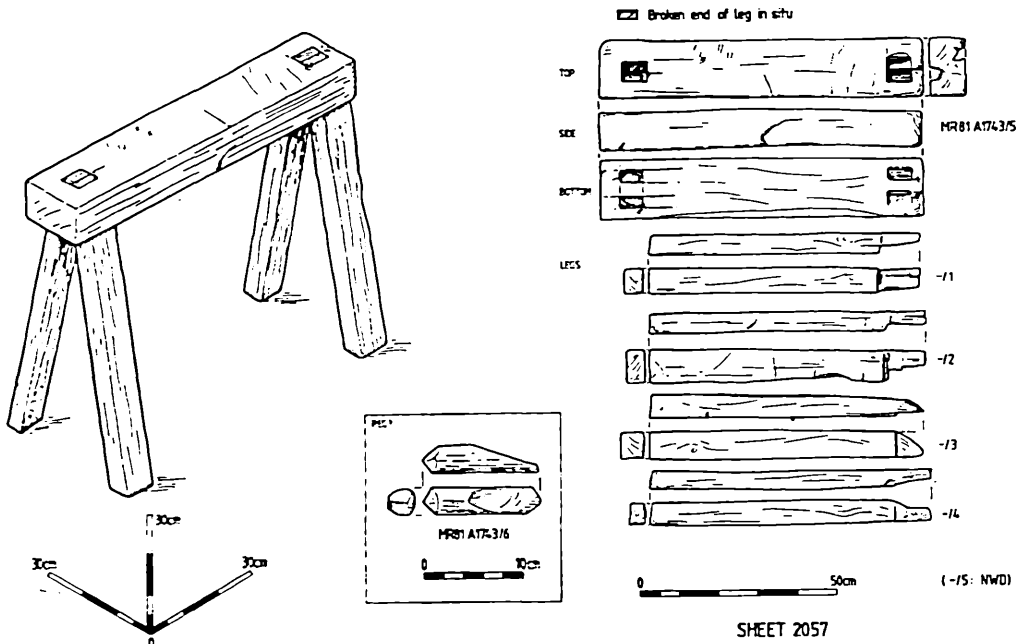
14. Boarded elm and ash box

Thames for the final stages of her fitting out in 1511 and her 1536 refit took place in the Medway.<sup>41</sup> Coniferous timber was largely imported from Scandinavia and the Baltic and, since it was especially valuable, the stores were closely guarded until required.<sup>42</sup>

#### WOODWORKING EQUIPMENT AND TOOLS

While there is no direct evidence to suggest that any of the *Mary Rose* furniture was actually made on the ship, the ship's carpenters were undoubtedly competent enough to supply pieces should the occasion arise and their surviving equipment and tools provide a valuable insight into sixteenth-century woodworking methods.

A stout oak cross-bar (810 mm long and 80 mm thick), standing on four rectangular-section oak legs, was found on the orlop deck (Figure 15). The legs were wedged into outwardly angled pairs of rectangular mortises, longitudinal and parallel, cut through at each end of the cross-bar. It is tempting to surmise that this robust trestle may have been yet another 'dormant' to support a table board, but the saw marks across the top surface of the cross-bar suggest rather that it served merely as a sawhorse. Little remains of the metal components of the tools recovered from the *Mary Rose* but much may be guessed from the surviving wooden parts. The tools evidently included a hammer, a mortise-gauge, augers, braces, gimlets, saws, spokeshaves, callibrated rules and a large variety of planes: grooving, block, jack, moulding, rebate and smoothing. The fact that one of the moulding planes is incorrectly cut for the blade position, and



15. Scale drawing of an oak trestle from the orlop deck

apparently a 'reject', suggests that at least some of the tools were made by the carpenters themselves, perhaps while on board. The woods used in their construction include oak, ash, elm, poplar, beech and boxwood.

A full and detailed account and evaluation of the *Mary Rose* furniture awaits the publication of the archaeological report by the Mary Rose Trust. In the meantime, this brief article provides an interim indication of the material found.

Much of the furniture found on the *Mary Rose* bears only a fundamental resemblance to the finer examples of sixteenth-century furniture we are accustomed to seeing preserved in country houses and national museums, and the phrases 'earliest known example' or 'only known example' could be applied, in one sense or another, to nearly every piece. But its rarity serves to remind us that the survival of early furniture is generally in an inverse ratio to its original distribution: it was not the rich furnishings of the manor but plain utilitarian objects, such as the footed chests, simple stools and workmanlike trestles represented on the *Mary Rose*, that must have been the commonest types of their day. This opportunity to examine them contributes to a more balanced perspective of furniture during the Tudor period.

#### ACKNOWLEDGEMENTS

I am deeply indebted to Dr Margaret Rule, Alex Hildred, Dr Mark Jones, Maggie Richards, Clare Venables and their colleagues at the Mary Rose Trust for their invaluable help and advice. Much of the information given here is based on data painstakingly compiled by the Trust over many years of hard work; their permission to share it with members of the Regional Furniture Society and to reproduce photographs is a generous gesture and warmly appreciated.

## REFERENCES

1. For a more detailed account, see Margaret Rule, *The Mary Rose: The Excavation and Raising of Henry VIII's Flagship* (Windward, 1983).
2. *Ibid.*, pp. 41–45.
3. The precise original location of some objects is not always clear due to the violent upheaval caused by the sinking itself, the redepositing of items when the port side and upper decks broke up, and so on.
4. Sixteenth-century attempts to raise the ship were abortive and any disturbances caused by divers during the nineteenth century are limited in nature and easily recognisable.
5. In a few cases it is nearly impossible to tell whether two or more dissociated parts were originally components of only a single chest or of more than one.
6. M. Oppenheim (ed.), *Naval Accounts and Inventories of the Reign of Henry VII*, Navy Records Society, 1896.
7. *Ibid.*, p. 118. Unfortunately, the last inventory of the *Mary Rose* (Anthony Roll, 1546) is extremely concise and makes no mention of any furniture whatsoever.
8. The view that the term 'chest' should be applied only to receptacles having feet appears to be merely a modern pedantry. This fine distinction was certainly not observed by the compilers of Tudor naval inventories, in which containers for bows and arrows (demonstrably flat-based) are described as 'chests'.
9. Penelope Eames, *Furniture in England, France and the Netherlands from the Twelfth to the Fifteenth Century*, Furniture History Society, 1977, pp. 119–20; and Victor Chinnery, *Oak Furniture: The British Tradition*, Antique Collectors' Club, 1979, p. 353.
10. Gabriel Olive, 'Furniture at Corfe Castle', *Regional Furniture*, IV, 1990, p. 117.
11. It is likely that all chests specifically designed for travel were particularly robust, often iron-bound and usually provided with handles, but whether a domed lid was standard on 'ship chests', as suggested by Penelope Eames (*op. cit.*, p. 120), is open to question. Not one of the chests found on the *Mary Rose* has a domed lid. Indeed, on board ship, where every cubic inch of space is precious, it is more practical for chests to have flat lids, enabling them to be stored under bunks or easily stacked if necessary.
12. See Victor Chinnery, *op. cit.*, pp. 120, 241 and 354–56. There is no knowing in most cases whether the large number of chests described as 'Flanders' in medieval, Tudor and Stuart inventories were instantly recognisable, distinguished from English pieces by a specific constructional form (it has been suggested that the early examples were joined and panelled at a time when English chests were generally not), or whether the term merely refers to their provenance. It has been pointed out (Penelope Eames, *op. cit.*, p. 137) that some references to Flemish chests seem too early for panelled types. Multiple dovetailing, however, was evidently in use by the fourteenth century and many dovetailed chests must have been imported from (or at least via) Flanders. Could the use of multiple dovetails in their construction have been a common distinguishing feature?
13. Penelope Eames, *op. cit.*, p. 228, fn 564.
14. *Ibid.*, pp. 149–50, 156–59 and pls 38, 42–44.
15. David Knell, *English Country Furniture: The National & Regional Vernacular 1500–1900*, Barrie & Jenkins, 1992, p. 232, note 14 to ch. 1. Despite the presence of English coats of arms carved on the front, the chest may have been made on the Continent and the arms carved to order there or added later in England. Nevertheless, it does indicate the early presence in England of the type of chest which may have inspired English craftsmen.
16. Victor Chinnery, *op. cit.*, pp. 42–43. The source is given as E. B. Jupp, *Historical Account of the Worshipful Company of Carpenters*, London, 1887.
17. The best known examples of chests made by foreigners working in England belong to the so-called 'Nonsuch' type, probably made by German immigrants in Southwark (and possibly Norwich) towards the end of the sixteenth and the beginning of the seventeenth century.
18. The contents of the cabin and the chest are fully discussed in Margaret Rule, *op. cit.*, pp. 122 and 186–96; and in James Watt, 'Surgeons of the *Mary Rose*: The practice of surgery in Tudor England', *The Mariner's Mirror*, Vol. 69, 1983, pp. 3–19.
19. The occasional use of the past tense in the descriptions of *Mary Rose* furniture reflects the present (mainly disassembled) condition of most items. Ironwork such as nails, locks and hinges has largely disappeared. Some items have been loosely reconstructed for museum display.
20. The use of staple hinges conforms with Continental practice but they also appear on English pieces.
21. David Knell, *op. cit.*, fig. 25. The secondary timbers given in the caption (pine and poplar) are incorrect.
22. The practice of reusing timber from another piece of furniture was certainly widespread during the seventeenth and eighteenth centuries (e.g. David Knell, *op. cit.*, figs 65 and 96) and, incidentally, it is interesting to note that the recycling of timber in Tudor shipbuilding is also recorded. Much of the timber used in the *Sovereign* (1488) came from the *Grace de Dieu*, broken up in 1486. See R. C. Anderson, 'The Grace de Dieu, 1446–1486', *English Historical Review*, XXXIV, 1919, pp. 584–86.

23. See 'Additional References'.
24. The chest lid is without battens and its lack of overhang conforms with common medieval practice.
25. David Knell, *op. cit.*, fig. 22. Recent analysis has revealed that the primary timber is *elm* and that it is the *right-hand* spandrel (in oak) which is the exception.
26. Discussed by Margaret Rule, *op. cit.*, p. 122.
27. E.g. the well-known central panel (*The Last Supper*) of the altarpiece painted by Dieric Bouts for the church of St-Pierre, Louvain, between 1464 and 1468.
28. David Knell, *op. cit.*, fig. 33. The timber given in the caption (*elm*) is incorrect.
29. See 'Additional References'.
30. Margaret Rule, *op. cit.*, p. 188; and James Watt, *op. cit.*, p. 16.
31. It is interesting to note that in Nelson's day Thomas Sheraton illustrated a plain folding 'Camp Table', essentially similar in principle to the *Mary Rose* table, in his *Cabinet Dictionary* of 1803 and observed that such furniture 'will also suit a cabin or sea voyage'.
32. This portrait, at the Cleveland Museum of Art, Ohio, has been widely reproduced: e.g. Roy Strong, *The English Icon: Elizabethan and Jacobean Portraiture*, The Paul Mellon Foundation for British Art, 1969, fig. 13; and Erna Auerbach, *Nicholas Hilliard*, Routledge & Kegan Paul, 1961, pl. 93.
33. Hollis S. Baker, *Furniture in the Ancient World*, The Connoisseur, 1966, p. 137 and fig. 200. Folding furniture recurs frequently in medieval illustrations and its use, both military and domestic, continued long after the Tudor period. A circular table board supported on a folding stand is depicted serving as a tea table on a fan-leaf of c. 1700, reproduced in Peter Thornton, *Authentic Decor: The Domestic Interior 1620-1920*, Weidenfeld and Nicolson, 1984, pl. 94.
34. A pair of trestles comparable to those found on the *Mary Rose* are clearly shown supporting a table board presided over by Janus in the Aquarius miniature of an Anglo-French Book of Hours by the Fastolf Master (the so-called 'Hours of Henry VII'), second quarter of the fifteenth century; Bodleian Library, Oxford; MS. Auct. D. inf. 2.11 f. 1r. Similar trestles, but with a brace between the two front legs, are depicted in a woodcut of 'The house of rest' in Gringore's *Castel of Laboure*, printed by Wynkyn de Worde at London in 1506, and this type has been reconstructed to furnish Bayleaf, a medieval farmhouse at the Weald and Downland Open Air Museum, Singleton, West Sussex. See Diana Zeuner, *The Bayleaf Medieval Farmstead: The Research — A Road of Discovery*, Weald and Downland Open Air Museum, 1990, p. 6.
35. 'Table clothes' are occasionally among the items listed in Tudor naval inventories (M. Oppenheim, *op. cit.*).
36. Victor Chinnery, *op. cit.*, p. 287.
37. Treen tinder boxes, with internal divisions and sliding lids, are noted by Edward H. Pinto, *Treen and other Wooden Bygones*, G. Bell & Sons, 1969, p. 115 and pl. 117. On a larger scale, of course, the 'dug-out' technique was also used to make chests, mostly of medieval date but persisting certainly into the sixteenth and probably into the seventeenth century.
38. The conservation techniques applied to the wooden objects from the *Mary Rose* are discussed by Margaret Rule, *op. cit.*, pp. 89-93.
39. Even the timber used to make a few of the private chests may well have come from naval supplies. No doubt some timber was purchased by naval personnel or occasionally given as a perk. In addition, dockyard and shipboard pilferage has a long history and was apparently more or less accepted by some authorities as inevitable. See *British Naval Documents 1204-1960*, Navy Records Society, 1993, p. 292.
40. Transport cost twopence per ton per mile. See David Loades, *The Tudor Navy: An administrative, political and military history*, Scolar Press, 1992, p. 86.
41. Margaret Rule, *op. cit.*, p. 22.
42. *Ibid.*, pp. 23-28.
43. *British Naval Documents 1204-1960*, p. 113. Coniferous timber was mainly required for masts and spars. Its exceptional value is indicated by the fact that a twenty-four hour watch was kept over it. In an estimate for building ships at Portsmouth in 1691 (*Ibid.*, pp. 262-63) softwood is second only to oak as constituting the largest expenditure for timber.