The Finds Research Group AD700-1700

DATASHEET 45

Post-Medieval Palm Irons

by

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Introduction

This datasheet emerges from research undertaken by the present writer in preparation for a book about metal sewing thimbles found in Britain. The volume will include discussion of 'palm irons', and this Datasheet is intended to introduce these little recognised objects, in the hope that more examples might be brought to attention. A related text has recently been published in the metal-detecting press (Read 2010; see also Read 2012).

These substantial tools – most frequently referred to as sailmakers' or sailors' *palm irons* – are also known as 'plates' or 'palm-guard pushers'. Manufactured in a range of metals, they are usually circular in shape, and may feature lugs (also termed 'ears' in a catalogue dated to c. AD 1900). Although this researcher has recorded 15 examples of the lugged variant– all found in southern England - their precise purpose was not at first widely known. Their function has, however, now been established. For stitching heavy materials such as sail canvas and tarpaulins, sailmakers and sailors used large, steel needles, and considerable pressure was required to penetrate the canvas, making some form of guard necessary in order to protect the hand from serious injury. This was the purpose of the palm iron.

For stitching canvas sails, hatch-tarpaulins, and boat-covers (known as *seaming*), the needles used by sailmakers or sailors are straight, and of triangular section. In contrast, those used in sewing up sacks (and, until recently, for darning the canvas delivery-hose used by fire brigades) are of flattened triangular-section, with upturned points. These are known as *sack*, *pack* or *packing needles*. Just as seen on sewing thimbles, palm irons feature an array of pits which help prevent the eye-end of the needle from slipping. For stitching ropes around the edges of sails (called *roping*), heavier gauge needles were – and are still – used, necessitating larger pits in the palm irons. To thread the needle, several strands of yarn are passed through the eye, formed into a bight, and twisted together, before being drawn through a block of beeswax for lubrication.

Curiously, though there are now a number recorded on the PAS database (*e.g.* SUSS-864CD1), palm irons appear otherwise unrecorded by archaeology, and they do not seem to be well represented in the collections of national and international maritime museums.

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However, the National Maritime Museum in Greenwich does hold an undated album of sailmakers' tools (National Maritime Museum, n.d.). This album is illustrated with pen-and-ink drawings created by an anonymous French artist, and amongst these illustrations a lugged, metal palm iron is clearly depicted. The piece is seen both detached and affixed to a sailmaker's leather palm (not illustrated herein).

These objects may require some introduction. Essentially, a palm fits over the hand and thumb, with an iron inset seated near the ball of the thumb (**fig 1**). Palms were and are still made in versions suitable for right- or left-handed wearers. Possibly the earliest surviving example of a leather palm comes from the 1545 wreck of the *Mary Rose*. This was apparently found in association with a horn disc, but this is now lost. This may have been a palm iron, though a drawing of the palm shows no sign of a disc being sewn to the leather. Through the succeeding centuries, palm irons could be affixed to an extensive range of leather or canvas palms, in diverse styles.

Fig 1. *Sailmaker's leather palm, 19th century. Note angled section of rawhide and inset metal, probable* ***Type 1a*** *wedge-shaped iron. Image courtesy Penlee House Gallery and Museum, Penzance.*

Sailors' palms are generally of lighter construction than those used by sailmakers (Pawson 2010), while sailmakers' leather palms (complete with metal irons) were also used in the leather trade, though to a lesser extent than specialised iron 'collar palms' and 'plier-palms' (Salaman 1986, figs 9:5, 9:6, 9:10, 9.11, p.260).

Discussion

There is evidence that certain sailmakers' or sailors' palm irons date back at least as far as the late 17th century. These early examples were made from cast copper-alloy, malleable cast-iron, steel or even organic materials, but all lacked lugs. In more recent times, aluminium variants were introduced, and these are still produced and used today (Pawson 2010). The history of lug-bearing forms is less certain; Pawson's research provides solid evidence of lugged palm irons being used in the 18th, 19th and 20th centuries, but the degree to which they antecede this is unclear. Some of the lugged examples described in this paper were discovered by mudlarks on London's Thames foreshore, in deposits considered to be reliably 17th-century. Others are inland metal-detecting finds, recovered on arable land in southern England. Interestingly, the only extant iron or steel palm irons known were found on the Thames foreshore; their absence inland no doubt relates to a combination of disadvantageous preservation conditions, metal-detectorists discriminating against ferrous metals, and a failure to recognise items recovered for what they are. It is hoped that this Datasheet may help to address the latter.

Morphological Variation

This first attempt at a classification is the author's own, and refinement may be necessary as further examples come to light. At present, three types of metal palm iron may be confidently recognised (no examples with four lugs have been examined by the present writer). Types 1 and 2 are further subdivided:

- Type 1 (**Fig 2**). Circular profile, flat cross-section, without rims or lugs.
- Type 1a (**Fig 3**) Circular profile, wedge-shaped cross section, with or without rims and without lugs.
- Type 2 (**Fig 4**) Circular profile, flat cross section, with or without rims, and with three or four equidistant peripheral lugs.
- Type 2a. (**Fig 5**) Circular profile, concave cross section, with or without rims, and with three or four equidistant peripheral lugs.

- Type 2b (**Fig 6**) Circular profile, wedge-shaped cross section, with or without rims and with three or four equidistant peripheral lugs.
- Type 3 (unknown in British Isles, and unillustrated) Hexagonal profile, wedge-shaped cross section, without lugs.

A circular panel of pits on the obverse (front) face is characteristic of Types 1, 1a, 2 and 2a. On some irons, the panel is recessed, with a rim that may be distinctive or less so (**Figs 3b, 4, 5b, 5c, 6**). Others are rimless, their panels being flat or shallow-concave with a convex back (**Figs 2, 3a , 3c ,5a**). Of the few palm irons studied that lacked lugs, three also lacked raised rims, and must have been either held in place by angled rawhide, or inset directly into the leather palm (**Figs 2, 3a, 3c**); **Fig 1** depicts a 19th-century palm fitted with a Type 1a iron, currently housed at Penlee House Gallery and Museum, Penzance. Pits on confirmed examples of Types 1 and 1a are circular, while Type 2 may also feature moulded lozenge-shaped, or, less commonly, triangular pits. On the basis of the examples studied by the author, and those depicted by Pawson, most circular pits appear to have been drilled, though other examples may have been moulded. They may be arranged randomly or decoratively; common designs include concentric circles, linear arrangements, and combinations of both. Compass-incised concentric circles, probably used for aligning the pits, are evident in the recess of the iron illustrated in **Fig**. **3f**.

***Fig 2**. Type 1 Palm Iron. Diameter 29.5mm. Note circular pits, including single pit on reverse. This example may be a reused 18th-century halfpenny. From Staffordshire. Image by the author.*

Of the palm irons and possible palm irons illustrated and discussed here, f**igs, 4a, 4b, 4c, 4e, 4f, 5a, 5b** and **7** have circular pits, while in **Figs 4b** and **5b** they are shallow and irregularly shaped, perhaps indicating poor drilling, wear, or inferior casting. Gouges in the recess of the example shown in **Fig 4b** may have been caused by needle slippage. The crudeness of some palm irons suggests that they were cast from moulds impressed with old, used irons (D Pawson pers. comm.). **Figs 4d, 5c** and **6** have lozenge-shaped pits, as have others depicted in previously published examples (see Pawson 2010). Several palm irons here have pierced pits (**Figs 4c**, **4d** and **5a**), probably worn through by extensive usage, and in the example illustrated in **Fig**. **4c** these are blocked with rust that also stains the recess, possibly representing the remnants of steel needles broken off in the perforations.

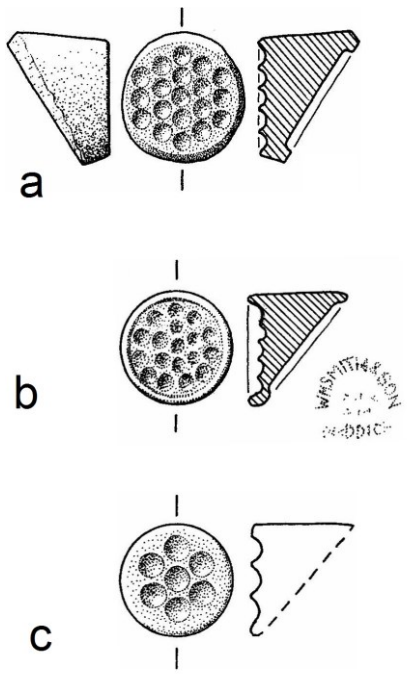

***Fig 3. Type 1a** Palm Irons. Note absence of lugs; rims present on b only. Diameters (a) 23mm, (b) 20mm, (c) 20mm. Note variation in pit size, and maker's stamp in **b**. All are steel, of 20th-century date, and in The Museum of Knots and Sailors' Ropework. Illustrations © Patrick Read.*

Type 3 palm irons are made of steel, and were made in North America between 1900 and 1982, but none are noted as having been found in Britain (Pawson 2010). Similarly, McConnel (1991) notes 11th- to 15th-century Middle Eastern and Turkish copper-alloy palm pushers of a type apparently not used with leather/canvas palms. They are not covered herein.

For reasons that remain unclear, Type 2 palm irons have to date been more frequently recovered than Type 1. This is the case both at rural sites in southern England, and on London's Thames foreshore. Nonetheless, the 18 examples now in the known record represent a small sample, and the difference may not be statistically significant.

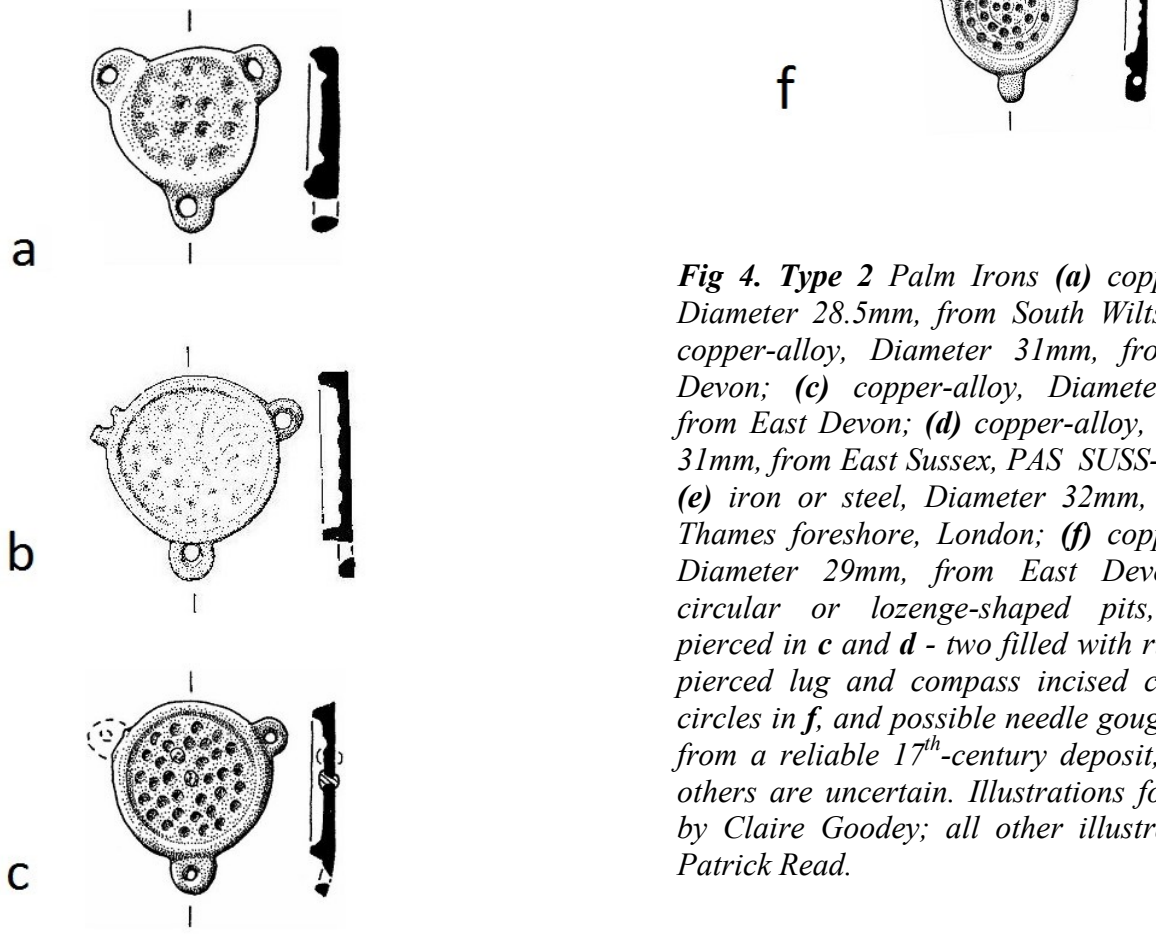

Fig 4. Type 2 *Palm Irons* ***(a)*** *copper-alloy, Diameter 28.5mm, from South Wiltshire;* ***(b)*** *copper-alloy, Diameter 31mm, from North Devon;* ***(c)*** *copper-alloy, Diameter 29mm, from East Devon;* ***(d)*** *copper-alloy, Diameter 31mm, from East Sussex, PAS SUSS-864CD1;* ***(e)*** *iron or steel, Diameter 32mm, from the Thames foreshore, London;* ***(f)*** *copper-alloy, Diameter 29mm, from East Devon. Note circular or lozenge-shaped pits, several pierced in* ***c*** *and* ***d*** *- two filled with rust in* ***c.*** *- pierced lug and compass incised concentric circles in* ***f****, and possible needle gouges in* ***b****.* ***e*** *from a reliable 17th-century deposit, dates of others are uncertain. Illustrations for figs 4d by Claire Goodey; all other illustrations by Patrick Read.*

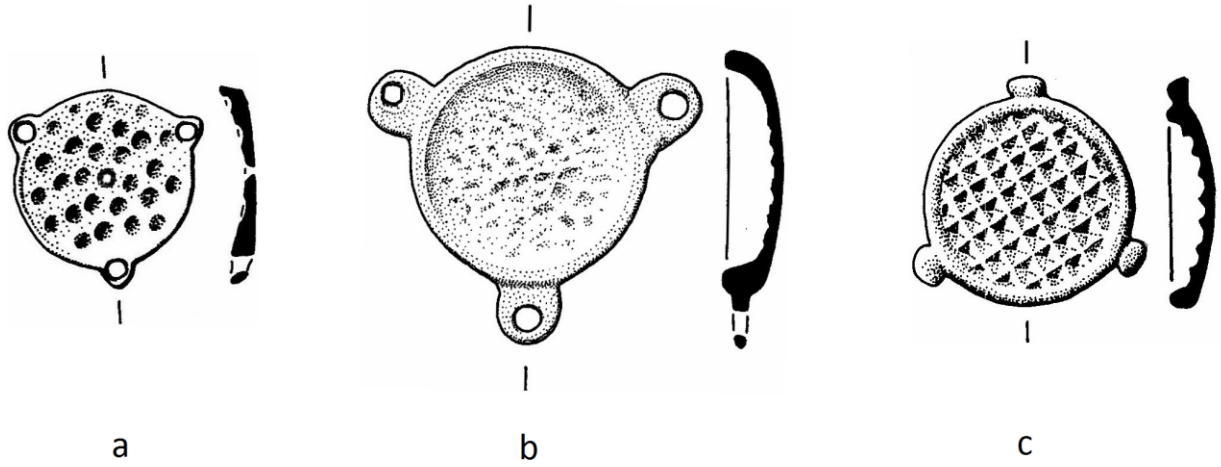

Fig 5. Type 2a *Palm Irons:* ***a.*** *copper-alloy, Diameter 26mm, from East Devon;* ***b.*** *copper-alloy, Diameter 35mm, from the Thames foreshore, London;* ***c.*** *iron or steel, Diameter 30mm, from the Thames foreshore, London. Note circular or lozenge-shaped pits, one pierced in* ***a****, worn or poorly cast pits in* ***b****. Dates uncertain. Illustrations by Patrick Read*

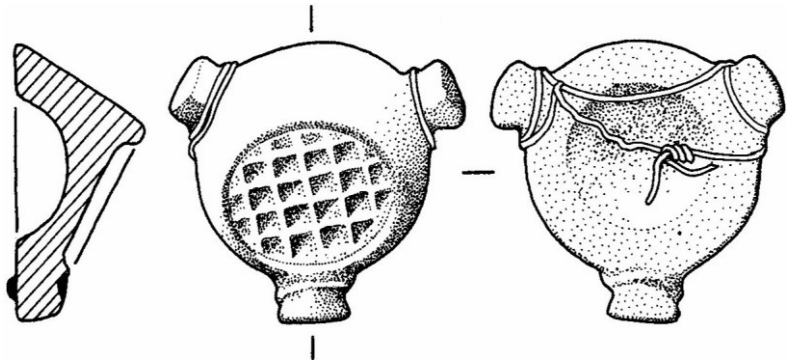

Fig 6. Type 2b *Palm Iron. Iron or steel. Diameter 30mm, from the Thames foreshore, London. Note lozenge-shaped pits and copper-alloy attachment wire. Date uncertain. Illustration by Patrick Read*

It is of course possible that a number of forms remain to be identified. For instance, rectangular palm irons with lugs may also have existed, though this is speculative, and other possibilities are represented by four discoidal examples. One in Otley Museum, Yorkshire has oval, probably moulded pits and a single pierced lug (Pawson 2010), while a mid-17th-century specimen , found in the Netherlands, has three pairs of attachment-holes in its raised rim (pers. comm. D Pawson). A 'scalloped-edge' curiosity, which may be an iron, with circular pits and a central perforation (perhaps a rivet-hole) was found near Wolverhampton (**Fig 7**); while we should also mention a French jetton (dated AD 1500-25) found in London, and featuring punched circular pits and three probable attachment-holes (Egan 2005, no. 969) suggesting reuse as a palm iron. This last example was recovered from a deposit dated to *c*.AD 1500-1550, which may suggest that metal palm-iron usage dates back to at least the 16th century. Indeed, we might expect that coins would also have served as makeshift palm irons (Pawson 2010); the morphology of the example in **Fig 2** suggests that it may be a reused 18th-century halfpenny.

Fig 7. Possible palm iron. *Circular, flat, copper alloy, Diameter 28mm. Note circular pits, scalloped edge and central perforation, perhaps a rivet hole. Staffordshire. Date uncertain. Illustration by Ian Hennwinkle.*

Lug Morphology

Palm irons of Types 2, 2a, and 2b feature lugs, used to secure palms by means of stitching with twine and wires (**fig 6**) and (apparently less commonly) riveting (Pawson 2010). Lugs may be semicircular (**Figs 4a-c, 5a-b**), roughly globular (**Figs 4d-f**, **5c**) or of triangular-section (**Fig 6**). The latter two forms may also be waisted, and those of triangular-section are also collared. Irons with semicircular lugs typically feature a single attachment-hole, piercing all lugs from front to back. These perforations are circular or subcircular, the former suggesting drilling, and the latter perhaps moulding, untidy drilling, or wear. On all irons with lugs of roughly globular or triangular section discussed here – other than **4f**, which has one of its lugs pierced transversely from side to side (possibly drilled) – the lugs are unpierced.

Two palm irons with pierced semicircular lugs and one without lugs, all from 17th- to 18th-century contexts on the Thames foreshore, are described by Holmes (1993) as 'Early Sailors' Palms'. Holmes also provides evidence for irons with pierced semicircular lugs and those without lugs being made by *R Timmins & Sons*, a Birmingham firm of toolmakers active between *c*.1791 – *c*.1889. An engraving produced by this firm is depicted in Kenneth D Roberts' Pattern Book, *Tools for the Trades and Crafts* (republished 1976). This volume was originally printed *c*.1845, though the engravings may date to *c*.1820 or earlier. The Timmins engraving (see Roberts 1976: Pl. 66) shows four irons, one of which lacks lugs, while the other three have pierced, semicircular lugs. Globular lugs (pierced or otherwise) are absent from the Pattern Book, and it is uncertain whether R Timmins & Sons produced irons of this type. Pawson provides additional evidence for palm-iron manufacturers in Britain, America and mainland Europe, and classifies their respective output of irons as 'British Style', 'Dutch Style', 'French Style', 'Hamburg Style' and 'Portuguese Style'.

Clearly, our understanding of these objects would be greatly improved had we a larger number of artefacts to study. It is hoped that this Datasheet will facilitate the recognition of further examples. The author would be pleased to hear about any findings.

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