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# Conservation of a leather slow match pouch from Medmerry, West Sussex Of The Report

Eric Nordgren and Angela Middleton

Discovery, Innovation and Science in the Historic Environment



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**MEDMERRY,  
WEST SUSSEX**

**CONSERVATION OF A LEATHER SLOW MATCH POUCH**

Eric Nordgren and Angela Middleton

NGR: SZ 83187 94483

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## **SUMMARY**

This report summarises the conservation work of a slow match pouch. This object was found in the intertidal zone at Medmerry, West Sussex (NGR: SZ8187 94483) by Mr D Screech and will be deposited with the National Museum of the Royal Navy. A conservation assessment and details of conservation treatment undertaken, including vacuum freeze drying is followed by a description of the object. The report concludes by comparing the slow match pouch from Medmerry with a similar artefact from the first HMS *Invincible*.

## **CONTRIBUTORS**

Eric Nordgren wrote the conservation section, and the artefacts are described by Angela Middleton.

## **ACKNOWLEDGEMENTS**

We are grateful to Peter Murphy who brought this artefact to our attention. We are also indebted to John Bingeman, who granted us permission to reproduce images of the slow match pouch from the first HMS *Invincible*.

## **ARCHIVE LOCATION**

National Museum of the Royal Navy, Portsmouth Historic Dockyard, HM Naval Base, Portsmouth PO1 3NH.

## **DATE OF CONSERVATION WORK**

This project was carried out between March and August 2018.

## **CONTACT DETAILS**

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## INTRODUCTION

The slow match pouch was found by Mr D Screech at approximately SZ 83187 94483 sticking out of a channel edge, well stratified under 2m of intertidal sediment at Medmerry, West Sussex (Murphy *forthcoming*). Mr Screech, a member of the Chichester District Archaeology Society, had been walking in the area after realignment works disturbed the sediment on the coastline. The object was found on land under the management of the Royal Society for the Protection of Birds (RSPB), who kindly donated it to the National Museum of the Royal Navy (NMRN). It was passed to the NMRN in July 2015 and was registered under number MBW 002.

The Receiver of Wreck was notified, as there is a possibility that the object comes from the *Hazardous Prize*, a protected wreck site in Bracklesham Bay, West Sussex (<https://www.historicengland.org.uk/listing/the-list/list-entry/1000048>). Originally it probably had a fuse inside, but the finder thought it might contain coins and scooped out and discarded the contents.

Following accession by the NMRN, the slow match pouch was transferred to the Historic England conservation laboratories at Fort Cumberland for conservation.



## CONSERVATION ASSESSMENT

The artefact was received wet and submerged in fresh water. A conservation assessment determined that it was in good condition. It consists of 2 circular dome shaped halves as well as a strap (Figures 1 and 2). There is some cracking near the centre of the strap. The leather is somewhat stiff, thick and relatively hard. Some amount of sediment and marine plant debris was present on the inner and outer surfaces as well as varying degrees of light iron staining. The remains of thread can be observed in many stitch holes (Figure 6). The grain side of the dome shaped halves shows some scratches and cracks. Most notably though are two incised letters “D Y” on one half (Figure 3). Next to these letters is a large area where the grain is missing in an irregular shape.



Fig 1: Slow match pouch, exterior, before conservation.



Fig 2: Slow match pouch, interior, before conservation.



Fig 3: Letters “D Y” on the exterior (red circle).

## CONSERVATION

### Desalination

No information was available about the storage or desalination of the object before arrival for conservation treatment at Fort Cumberland, other than that it was always kept wet following recovery. Conductivity measurements of the water in which the object had been stored showed low levels of Total Dissolved Solids (TDS) indicating that no significant soluble salts were being released from the object.

### Wet cleaning

Any remaining debris, sediment and light iron staining were removed from the object by wet cleaning using an air brush set up to spray deionised water. Varying the amount of compressed air and water according to the amounts needed resulted in a gentle but effective wet-cleaning process, clarifying details and removing potential barriers for effective impregnation and drying.

### Impregnation

Following desalination and wet-cleaning, the slow match pouch was impregnated with a solution of polyethylene glycol (PEG) 400 30% (v/v) in tap water for a period of 2 weeks. The object was removed after two weeks and excess PEG rinsed off with a gentle stream of deionised water.

### Vacuum freeze drying

Following PEG impregnation, the slow match pouch was vacuum freeze-dried according to the following steps: The pieces were placed on a tray and pre-frozen in a chest freezer to  $-30^{\circ}\text{C}$  over three days. The tray was wrapped in cling film to prevent uncontrolled drying at atmospheric pressure during pre-freezing. The cling film was then removed and the pre-frozen object weighed on an electronic balance to determine the pre-drying weight. The object was then placed in the freeze dryer which had been pre-cooled to  $-30^{\circ}\text{C}$  with the condenser temperature at  $-45^{\circ}\text{C}$ . The drying process was monitored at intervals of a few hours, at which time the vacuum was released and the weight of the object, as well as its appearance and flexibility, were checked. Drying was judged to be complete after about 1.5 days of drying time, after which the slow match pouch was removed from the freeze dryer and allowed to warm to room temperature, under layers of acid free tissue. The resulting object has a natural appearance and is in good condition. The vacuum freeze drying treatment was successful in preventing any significant shrinkage or distortion, although a small amount of cracking did occur on the outside of the strap.

### Post drying cleaning

Following freeze drying a few areas of the object required careful dry brushing under a stereo microscope to remove traces of dried, excess PEG (Figures 4 and 5).



Fig 4: Slow match pouch, exterior, after conservation.

Fig 5: Slow match pouch, interior, after conservation.

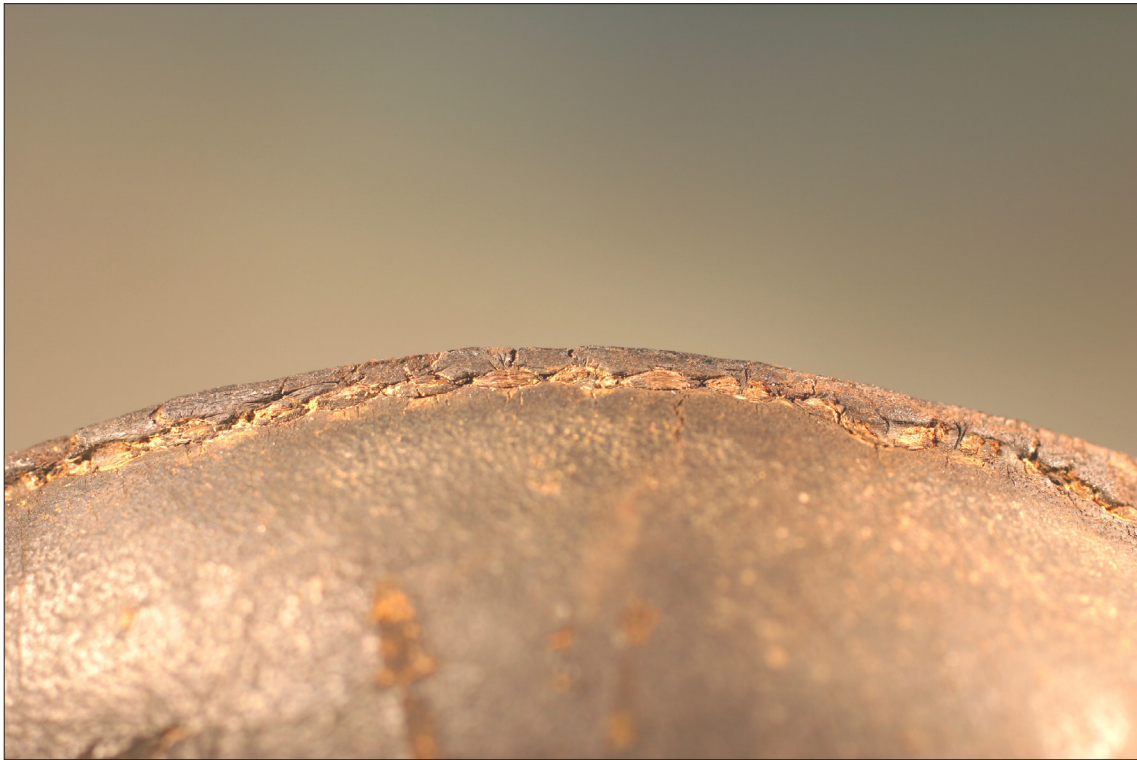


Fig 6: Thread remains in the stitch holes.

## DESCRIPTION OF THE SLOW MATCH POUCH

The slow match pouch consists of two dome-shaped, round pieces of leather and a separate strap. The strap is ca. 22.5cm long, ripped at one end and widens in width from ca. 3cm at the ripped end to 5.5cm. The two halves for the pouch are ca. 13.5cm in diameter. The two halves had originally been joined by a closed seam with flesh/ grain stitching (Goubitz 1984, 188), but are now separated. The strap was attached with two rows of flesh/ grain stitching. In the area, where the strap was attached, the two halves remained open, as the seam, that otherwise runs round the edges, stops either side of the strap (Figure 7).

Judging by the thickness (up to 4mm on the strap and 3mm on the pouch) and the grain pattern, the leather was probably manufactured from cattle hide.

It is most likely that the two leather halves were wetted and then dried over a form to give them their rounded shape; making it a robust storage pouch but at the same time not constraining the slow match and allowing it to be withdrawn easily.



Fig 7: Two halves of the slow match pouch and the strap assembled. The arrows indicate the point where the seam ends on one of the halves.

Fig 8: One half of the slow match pouch with the strap in position. The arrows indicate the darker area on the interior of one of the halves.

## DISCUSSION

This previously unidentified artefact is similar in style and size to an example from the first HMS *Invincible* (Bingeman 2010, 121). However the *Invincible* slow match pouch was made of fearnought cloth (a severely shrunk woollen fabric to give it a close weave); and furthermore retained its slow match. Whilst the two halves of the Medmerry slow match pouch are held together with a closed seam, the *Invincible* example has a whip stitch (Figures 9 and 10) (please note: This is based on published images. The artefact itself was not examined.).



Fig 9: Slow-match pouch from the HMS *Invincible*. The stitching has split open and the slow-match is visible. Image reproduced with the permission of J. Bingeman (Bingeman 2010, p. 121).

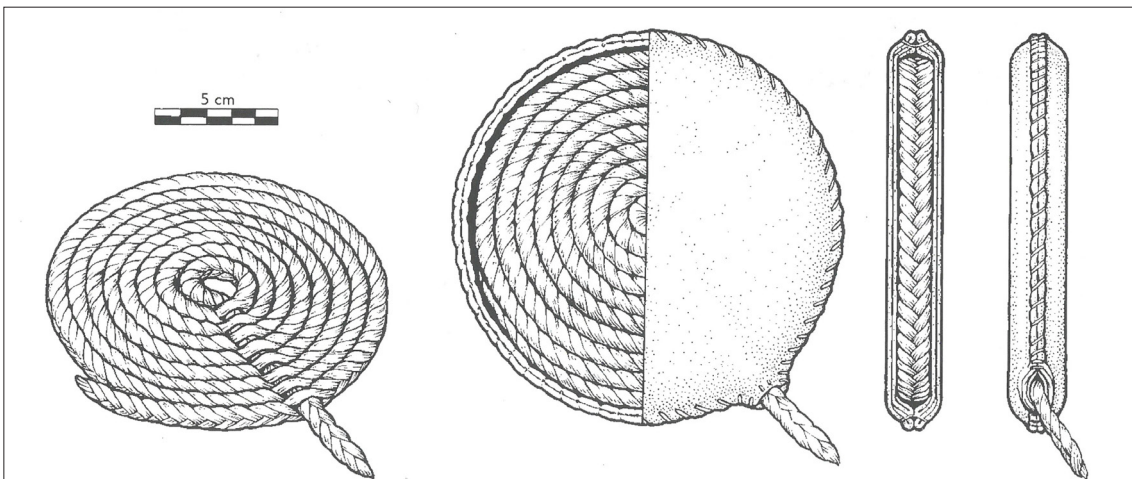


Fig 10: Illustration of the slow-match pouch showing its construction. Image reproduced with the permission of J. Bingeman (Bingeman 2010, p. 121).

It is unfortunate that the content was discarded, as the preservation of plant material used for slow matches is fairly rare. For example, no slow matches were recovered with any of the lintstocks recovered from the *London* wreck, despite some lintstocks showing clear signs of scorching from twisted rope.

The use of leather for a slow match pouch is not unusual. Leather is well known for its fire retardant properties. On the inside, on the flesh side, the pouch displays some darker areas near the opening (Figure 8). Whether these originate from the smouldering slow match, or are discolorations resulting from burial, cannot be established. The grain pattern has largely been abraded, especially at the raised parts of the pouch, which is indicative of a well-used object. As to whether this slow match pouch really came from the *Hazardous Prize* has to remain speculation, as ship related artefacts are not uncommon from Medmerry (Murphy *forthcoming*).

## REFERENCES

- Bingeman, J M 2010 *The first HMS Invincible (1747-58). Her excavations (1980-1991)*. Oxbow Books: Oxford
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