

in practice

THE CREATION OF A CUSTOM-MADE CRADLE TO MINIMISE RISK DURING THE DIGITISATION PROCESS

by Flavio Marzo, book conservator working at the British Library Centre for Conservation

INTRODUCTION

In 2009, as part of the long-term digitisation strategy, the British Library digitised two hundred and fifty early Greek manuscripts. This was the first phase of an ongoing externally-funded project to digitise the entire Greek manuscript collection. The aim was to facilitate wider access to readers nationally and internationally and to help reduce the amount of physical and chemically-induced harm to their future preservation. The manuscripts chosen for digitisation ranged in condition from fair to good. All those in poor condition were excluded from digitisation and sent to be treated or put aside for later conservation.

The following article describes the creation of a book cradle designed for the handling of manuscripts during the digitisation process and provides instructions for its assembly.

Establishing the risks

The need for a book support for the digitisation process was highlighted during a risk assessment undertaken at the beginning of the project. This collection care risk assessment was aimed at identifying possible causes of harm to the manuscripts and to help mitigate such risks, whilst enabling the ease of project workflow. To manage these requirements, the project included the work of a full-time book conservator to evaluate the risks attached to the digitisation of this collection.

It was established quite early that the main risk factors were around the handling processes, particularly during

- Transport
- Digitisation in studios
- Storage

The main focus of the assessment was to evaluate the risks to manuscripts through the process of mechanical handling throughout the whole project and some aspects of storage.

As handling presented the highest risk overall, it was imperative that all those involved in the process of handling should first observe some of the basic preservation rules, such as clean hands, ensuring that the correct mechanisms were in place, such as trolleys and cradles, and establishing safe access routes before moving items from one place to another.

Handling during the actual digitisation process was identified as presenting the highest risk of all. It was important to consider the worst-case scenario, as handling during this process does not always take place in the presence of the collection care staff.

The need for the cradle

In order to mitigate those risks, it was decided to design and develop an easy-to-use and adaptable book cradle. It was intended to support manuscripts whilst they were being digitised.

The book cradle was designed to be used only where one page at a time was being photographed or digitised. It was used with a common photographic stand with the camera placed perpendicular to the page to be digitised. The book support is also adjustable depending on the type of spine of the book.

The resulting cradle enabled a safe and faster digitisation of many of the manuscripts so far and has also been used recently for other projects such as the digitisation of the St. Cuthbert Gospel this year. Positive feedback from digitisation staff confirmed the success of the implementation achieved with this simple device.

MAKING THE BOOK SUPPORT

The following instructions are intended to explain and show clearly and easily the construction of the book cradle. They are offered to anyone wishing to make a cost-effective cradle for use in their institution.

List of materials needed

- Board
- Buckram cloth
- Plastazote®
- Strips of linen tape or Tyvek®, the length depending on the dimensions of the book support plus the space for the book block.
- Self adhesive Velcro strips.
- Foam wedges

Fig 1 shows the finished article and Fig 2 shows the three components of which the support is made:

1. **A base** formed of two boards covered with Buckram
2. Two **Plastazote® supports** covered with the same archival cloth
3. **Strips of Velcro** placed on the edges of the support

The base is formed by two 3mm identical boards. The boards are covered with buckram or any suitable archival material that join them together creating a central hinge of approximately 10mm. See Fig 3.

The **Plastazote® supports** are made from a piece of Plastazote® and a 3 mm board of the same dimensions. They are covered in such a way as to create a slit at the back of each Plastazote® support into which the base board is inserted. To create this slit place the piece of Plastazote® on the cover material to the left and the same dimension piece of board on the right leaving between them a gap equal to the thickness of the Plastazote® plus the thickness of the

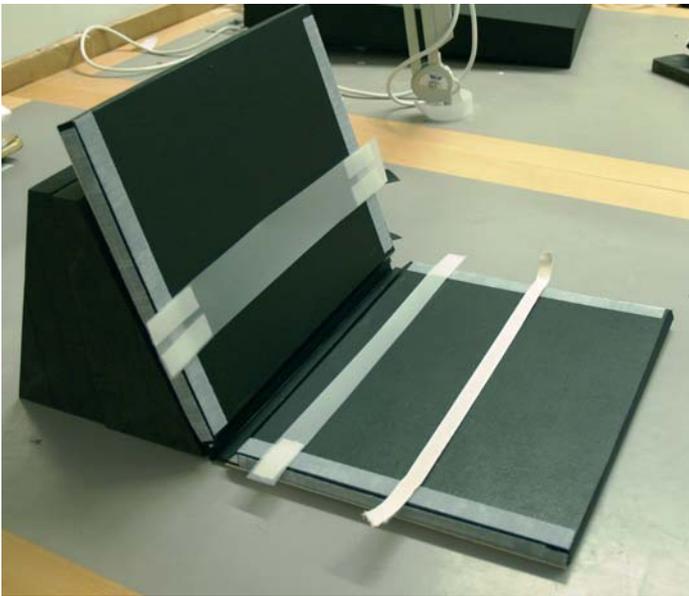


Fig 1 The book support with its holding strips

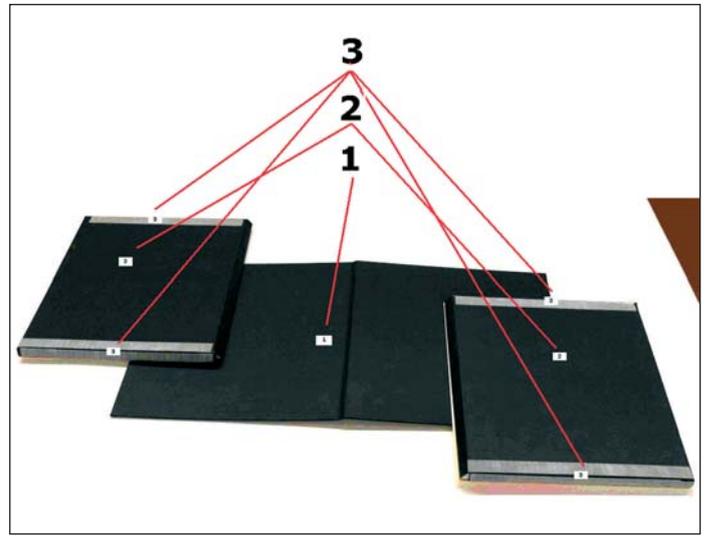


Fig 2 The components of the support

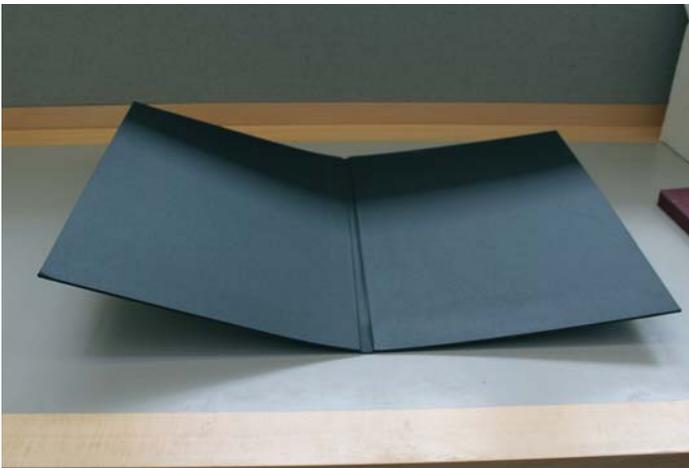


Fig 3 The base (component 1 above)

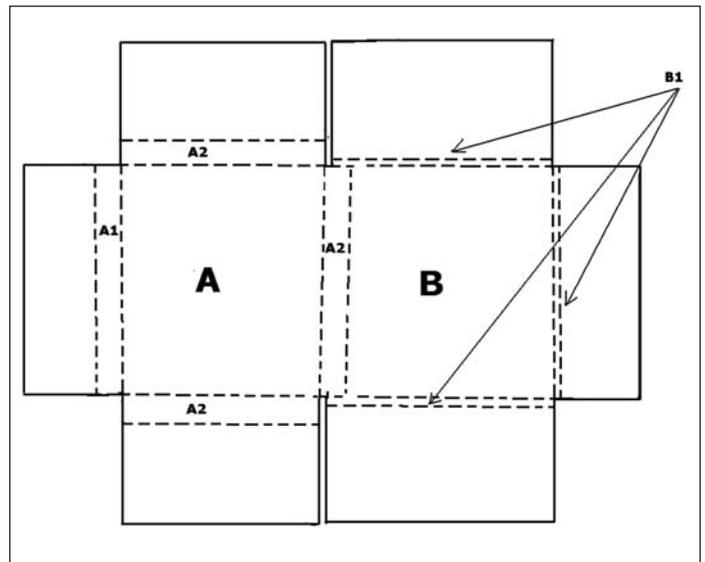


Fig 4
 A: Plastazote
 B: Board
 A1: Fold of covering material equal to thickness of A
 A2: Equals A1 plus thickness of covered base board
 B1: Fold of covering material equal to thickness of B

covered base board (5mm). The diagram at Fig 4 gives the template for the covering material for the Plastazote® bases

Next, secure the Plastazote® and the board bases to the cover material. Place the Plastazote® on A without gluing it but securing it with a weight. Glue the board on B aligning it with the Plastazote®.

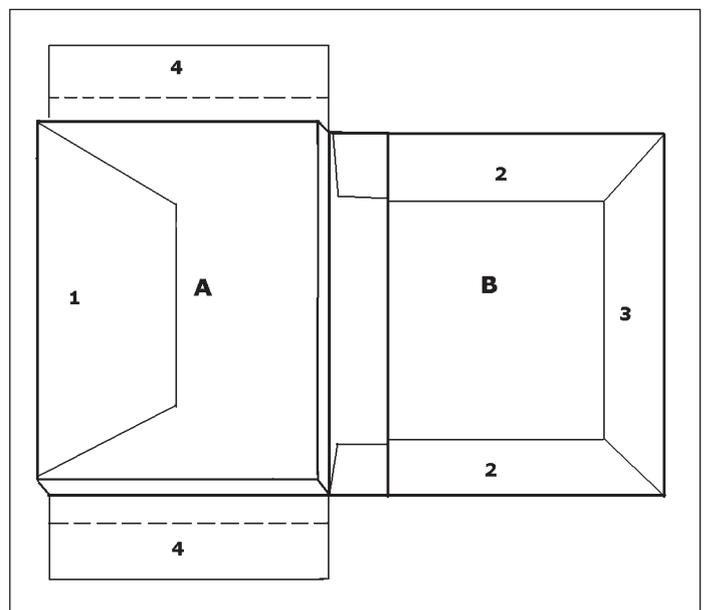
Fig 5 shows the folding sequence for the Plastazote® support covering material

Glue verso 1 to the Plastazote®, do the same with 2 (head and tail) to the board and finish attaching 3.

Close B onto A placing a compensatory thickness equal to the thickness of the covered base board (the base board itself can be easily used for this) to create the slit. Place the glue on 4 and fold it over the verso of B at both sides.

The support is shown end on in Fig 6.

Now place the **strips of self adhesive Velcro** (hook side of the Velcro) onto the Plastazote® supports at head and tail (short sides) of the Plastazote® bases and onto their thickness. This is illustrated in Fig 7.



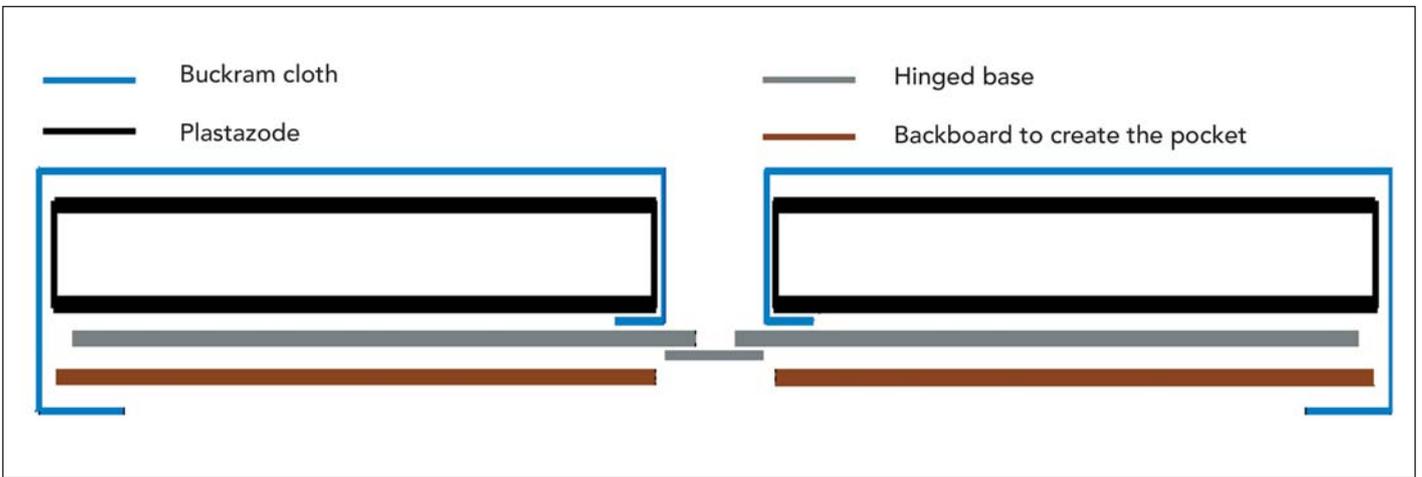


Fig 6 The support in tail view

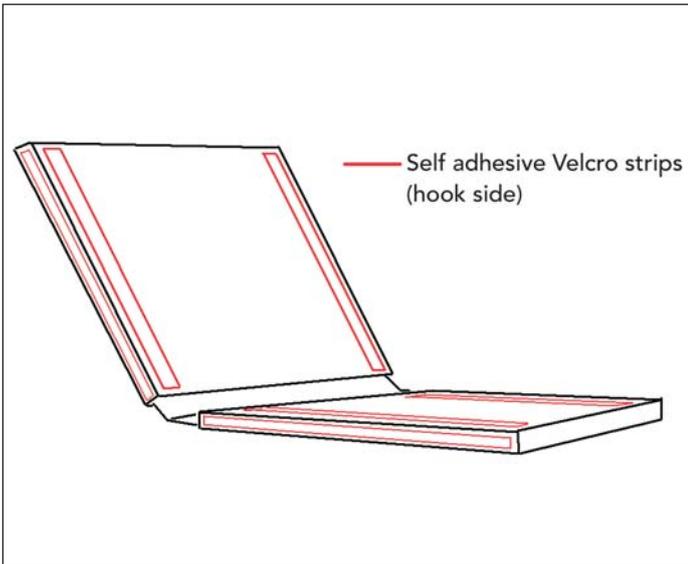


Fig 7 The placing of the Velcro strips

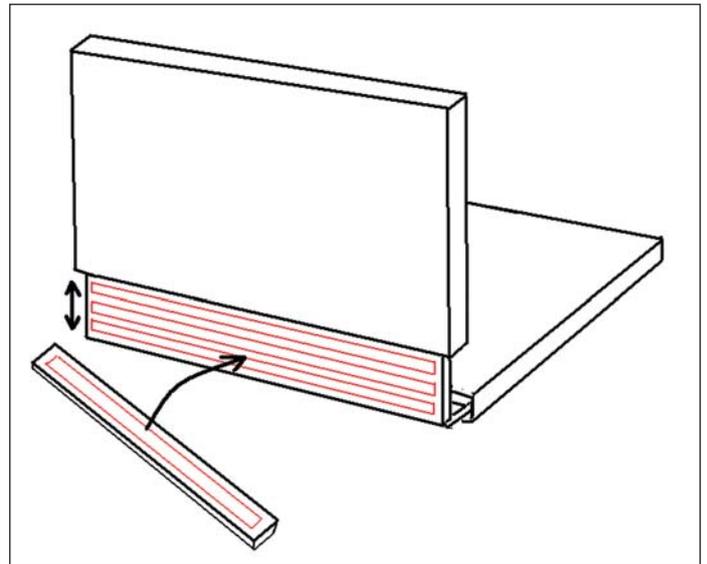


Fig 8 The holding strip

Fig 9 The adjustable groove houses different spine sizes



Fig 10 A pronounced spine properly housed

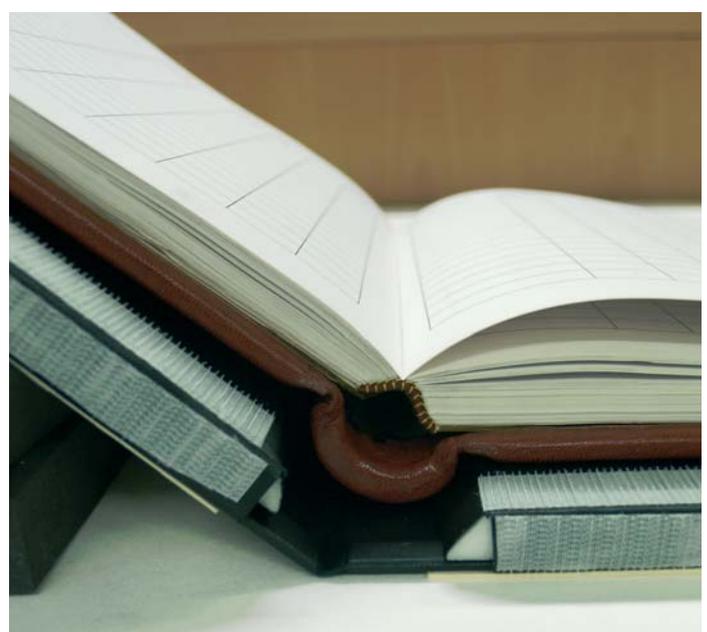




Fig 12 In use

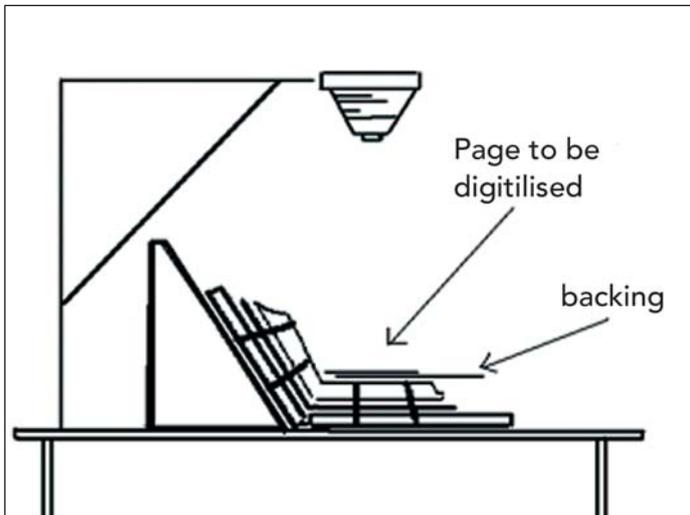


Fig 11 Ready for use

Adjusting the groove

To adjust the groove to accommodate different sizes of the raised spine of a book it is necessary to secure the left side of the Plastazote® support at different heights.

This is achieved by placing three strips of self adhesive Velcro (loop side) on the verso of the left part of the base board. These strips need to be placed at 1 or 2 cm interval parallel to the groove. Cut a strip of board of the length of the base board or slightly shorter and 40 mm wide. Adhere to the strip a new strip of self adhesive Velcro (hook side) and use the strip to support the Plastazote® base at the desired height.

The diagram at Fig 8 illustrates the technique, whilst Figs 9 & 10 show the end result

Holding the book in place

The book is held in place by strips that can be made of linen tape, or conservation paper or even Melinex® or Mylar® or Tyvek®. These strips are secured to the base with Velcro (loop side of Velcro) at each end to secure the books to the book support during digitisation. The strips both gently hold the left part of the book block out of the camera range and also provide an easy and fast way to change the page. The strips, placed behind the page to be photographed can also help to secure the right side of the book block in place during the

photographic process. To hide the strips, a sheet of archival paper can be placed behind the page being photographed as a blending background as shown in Fig 11.

The diagram at Fig 11 shows the system ready for use, whilst Fig 12 and the front cover of this magazine show books in place with different opening angles

The opening angle of the book support can be changed as necessary. Different thicknesses of foam wedges can be used behind the book support to achieve a different opening angle. The opening of the book should not be more than 120 degrees and the book should never be forced to open further than it will naturally.

Refinements can be made to the design when you have made the basic cradle; for instance, the Plastazote® bases can be bevelled at the edge close to the groove where the book spine will be placed to follow the shape of rounded book spines. Also, where natural hollow or tight back spines need support a rolled linen cloth can be used to fill the groove to support the book block from behind, as illustrated in Fig 13

CONCLUSIONS

The book support cradle was designed to reduce the handling of the books during the digitisation process. The book is secured on a non abrasive surface that keeps a suitable constant opening angle and allows the book to be positioned on the photographic table without further direct handling as the book rest itself can be moved with the book already in place.

The dimensions of the supports can be varied depending on the dimensions of the books to be digitised, more than one dimension should be available to the photographer/imager and the book support needs to be bigger than the book to be digitised.

The strips made of conservation-grade material (Tyvek® and linen tapes were the more suitable choices due to their properties of strength and non-abrasive surface) keep the books open and reduce the risk of damage to delicate paper or parchment surfaces. The use of Velcro to secure the strips to the book support means they can be secured with a slight tension to prevent the angled opposing pages from slipping. The Velcro also means that the page turning operation is quicker and safer.



Fig 13 A hollow spine supported with rolled linen cloth

The adjustable space in the centre of the book support between the covered Plastazote® bases enables the safe positioning of the spine of the books placed on the support. Different book sewing structures open in different ways during use, for example: hollow back books need space to accommodate the spine which is detached from the text block. Positioning books properly on the support enables the pages to be turned more easily and the adjustable cradle enables the dimensions of the gap to be increased or decreased to accommodate books of different thicknesses safely.

The increase of book digitisation projects has meant that the involvement of conservation/preservation departments is an essential part of successful project planning. Never before has so much emphasis been placed solely on the books as mere textual carriers. Much of the funding for these projects is awarded towards the accessibility of this textual information alone. For this reason, book conservators have a vital responsibility to contribute to these projects by supervising the safety of the physical items through the stressful process of digitisation.

Books now, more than in any other period, need to be preserved for future generations as artefacts and museum objects too. Important features of the artefacts can be lost,

simply because they are presently undervalued due to pressing work schedules and other agendas, but it must be remembered that they are carriers of information on many levels, not just intellectual content.

Experience at the British Library has demonstrated that the involvement of the conservation/preservation element in digitisation projects must be factored-in at the beginning of the planning process. The early assessment of condition and risks is vital for the future conservation and safety of our irreplaceable heritage.

Acknowledgements

I would like to thank my then manager Roswitha Ketzer for her mentoring and immeasurable support during the project and especially during the conception of the overall Risk Assessment, the book cradle itself being only one of the mitigating tools for the risks uncovered.

I would like to also thank the Manuscript Department, the Imaging Department and Preservation Department for their constructive and open working approach.

Thank you to my colleague Isabelle Egan for her support in pushing me to share through this article my experience and for her invaluable editing.