National Gallery Technical Bulletin

Volume 8, 1984

Published by Order of the Trustees,
Publications Department,
National Gallery, London

National Gallery
Technical Bulletin

Garry Thomson, Scientific Adviser
Martin Wyld, Chief Restorer

Ashok Roy: Editor

ISBN 0 901791 94 6
ISSN 0140 – 7430

Designed by James Shurmer

Printed by Westerham Press,
Westerham, Kent

The Construction of Panel Trays for Two Paintings by the Master of Cappenberg

Janet Brough and Jill Dunkerton

Introduction

Jill Dunkerton

Christ before Pilate (No.2154, Fig.1) and *The Coronation of the Virgin* (No.263, Fig.2) by the Master of Cappenberg [1] are two of a series of eight panels which depict scenes during and after the Passion of Christ [2]. They are, in fact, fragments, since they result from the division of two large panels which formed the wings of an altarpiece, possibly with a *Last Judgment* (now lost) as its centre [3]. Each wing consisted of four scenes, arranged in two tiers and divided from one another by painted red and brown bands.

The unpainted borders along the left and bottom edges of *Christ before Pilate* and the right and bottom edges of *The Coronation of the Virgin* show that they were the lower left and lower right scenes of their respective wings. This is consistent with a logical narrative order for the eight scenes [4]. The presence of bands of red and brown paint along the top edge of *Christ before Pilate* and the top and left edges of *The Coronation of the Virgin* is further evidence of their original positions in the altarpiece.

Examination of the backs of the panels (Figs.3 and 4) shows that the wood (identified as oak) has been thinned down to slightly less than half of its original thickness, exposing the dowels used to reinforce the vertical joints between the planks [5]. The divisions quartering the originally large wing panels run horizontally across these joins and cut vertically through some of the dowels, making it possible to re-assemble the eight fragments in the correct order using information obtained solely by examination of the backs of the panels: for example, the missing tip of the dowel on the left-hand edge (as seen from the back) of the panel of *Christ before Pilate* can be found on the right-hand edge (also as seen from the back) of the *Christ Carrying His Cross* from Münster [6], while the widths of the planks along the bottom edge of *The Scourging at the Pillar* (also in Münster) correspond exactly with those along the top edge of the National Gallery panel.

The ridged and jagged texture of the back of the two National Gallery fragments [7] is also of interest, since it suggests that the panels have not been thinned down by planing, but that they may have been sawn through parallel to the picture surface, presumably to separate them from another series of paintings on their reverse sides which are yet to be identified [8].

Figure 1 Master of Cappenberg, *Christ before Pilate* (No.2154), 100.2 × 69.2 cm, after cleaning and restoration.

Figure 2 Master of Cappenberg, *The Coronation of the Virgin* (No.263), 98.2 × 71.1 cm, after cleaning and restoration.

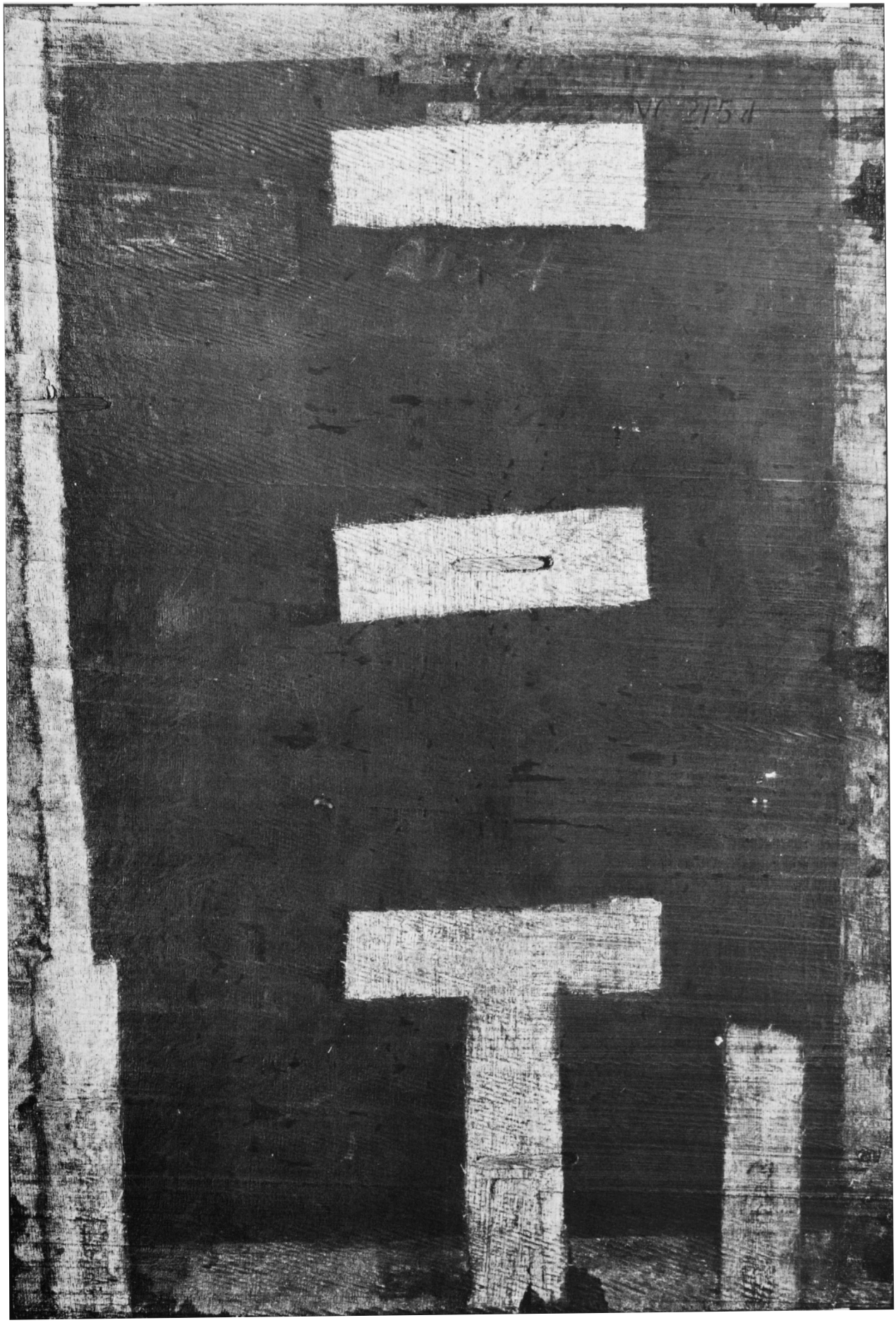


Figure 3 *Christ before Pilate* (No.2154), the back of the panel.

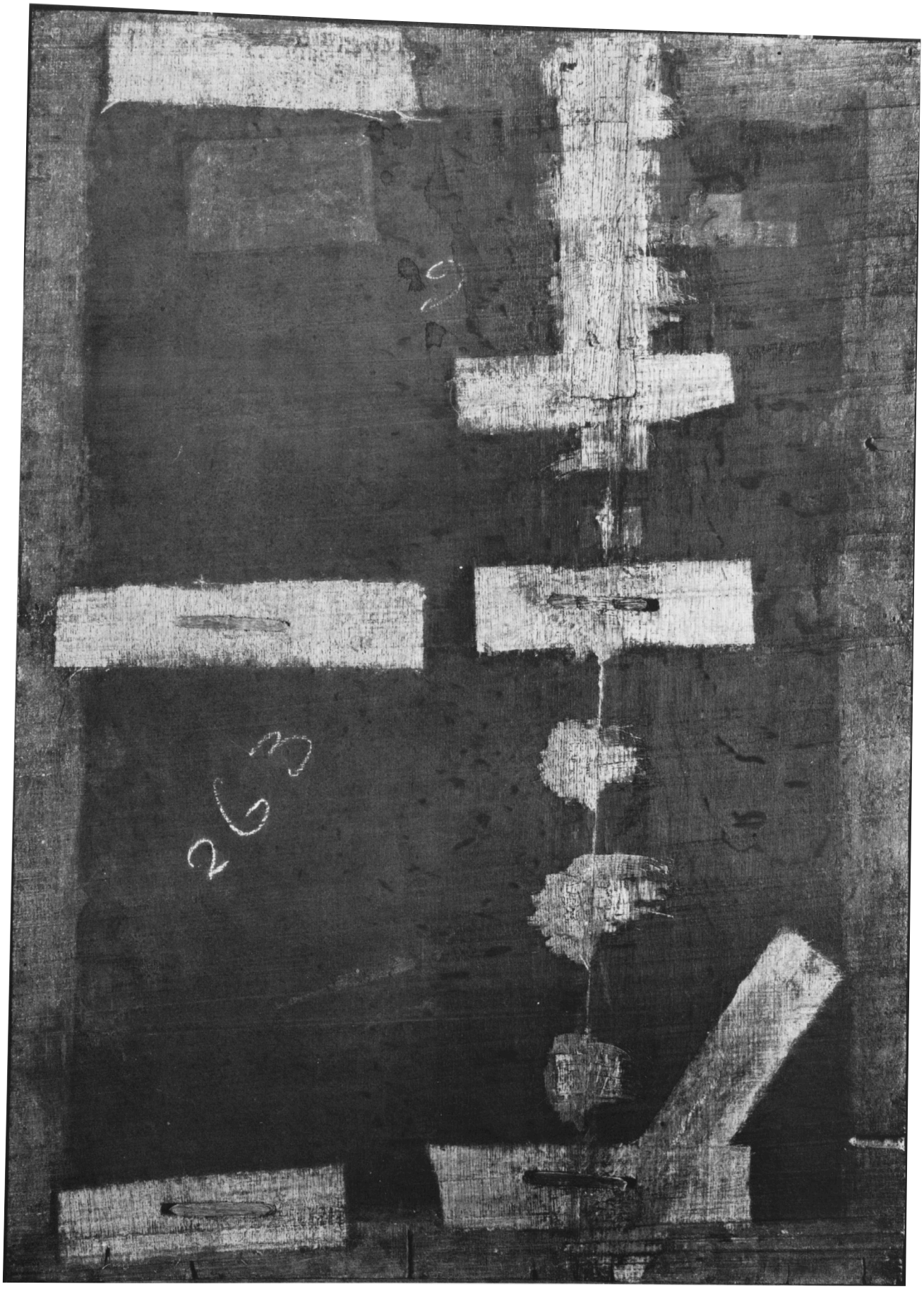


Figure 4 *The Coronation of the Virgin* (No.263), the back of the panel.

When, following recent conservation treatment [9], it was decided that the panels were too weak and flexible to be re-framed without some form of auxiliary support, the fact that the backs of the paintings contained so much information about the original construction of the altarpiece had to be taken into account. Building up the backs of the panels with balsa wood and a wax–resin cement [10] was considered unnecessary and obviously would have obscured this information, so it was decided to place them in supporting panel trays, the design and construction of which are described below.

Notes and references

1. The Master of Cappenberg is now usually identified with Jan Baegert whose activity as painter and craftsman is documented. See LEVEY, M., *National Gallery Catalogues: The German School* (London 1959), pp.65–70; and VAN OYEN, G.T., *Jan Baegert: Der Meister von Cappenberg. Ein Beitrag zur Malerei am Niederrhein zwischen Spatgotik und Renaissance.*

2. Of the other panels, five ('The Scourging at the Pillar', 'The Crowning with Thorns', 'Christ Carrying His Cross', 'The Resurrection' and 'The Ascension') now belong to the Westfälisches Landesmuseum für Kunst und Kulturgeschichte in Münster, and the eighth, 'The Pentecost', is in a private collection.

3. See LEVEY, M., *op. cit.*, pp.67–70.

4. The complete arrangement on the left wing would have been: top left, 'The Scourging at the Pillar'; top right, 'The Crowning with Thorns'; bottom left, 'Christ before Pilate'; and bottom right, 'Christ Carrying His Cross'. On the right wing: top left, 'The Resurrection'; top right, 'The Ascension'; bottom left, 'The Pentecost'; and bottom right, 'The Coronation of the Virgin'.

5. The panels are now approximately 7mm ($\frac{5}{16}$ in.) thick. The dowels have the same slight kink (producing a barbed profile at the junction between planks) noted in 'The Death of the Virgin' (No.658) attributed to a follower of Campin. See DUNKERTON, J. '"The Death of the Virgin": A Technical Approach to an Art Historical Problem', *National Gallery Technical Bulletin*, **7** (1983), p.21 and note 11.
Similar exposed dowels can be seen on the five panels in Münster. I would like to thank Prof. Dr Peter Berghaus and Dr Joseph Lammers at the Landesmuseum for making it possible to examine the backs of these panels.

6. The red and brown painted border which is absent from the right edge of the National Gallery panel can also be found running down the left edge of 'Christ Carrying His Cross'.

7. Only three of the panels in Münster have similarly textured backs, the other two having been thinned down further by planing, and then cradled.

8. It has been proposed that the eight panels by the Master of Cappenberg are those on the outside of the high altar at Liesborn for which Jan Baegert is recorded as having been paid in 1520, thereby securely identifying the Master of Cappenberg as Jan Baegert. It has further been suggested that the reason for sending some wing panels, not actually stipulated as being from the high altar, in 1517 from Liesborn to Wesel, where Baegert was active, was for a series of scenes to be painted on their reverse sides, and that these were the eight Master of Cappenberg paintings. For a more detailed discussion of this proposal see LEVEY, M., *op. cit.*, pp.65–70.
However, although the dimensions of the eight Cappenberg scenes and those of the surviving panels from the wings of the Liesborn high altarpiece are remarkably close, they cannot ever have been painted on the two sides of the same panel: while the Cappenberg panels appear to have been cut from other paintings, those fragments from the Liesborn high altar in the National Gallery and in Münster which are still on wooden panels (some have been transferred to canvas), are all on thick pieces of oak which do not appear to have been sawn through transversally or thinned down in any way. In the case of the fragment from 'The Adoration of the Kings' (No.258) a complete, uncut dowel can be seen in the X-radiograph. A different provenance therefore seems likely for the Master of Cappenberg panels and it is possible that any paintings which may have been on their reverses have not survived the dismemberment of the altarpiece.

9. The paintings were cleaned and restored and some loose joins in the panels were re-glued.

10. See SMITH, A., REEVE, A. and ROY, A., 'Francesco del Cossa's "S. Vincent Ferrer" ', *National Gallery Technical Bulletin*, **5** (1981), pp.47–54.

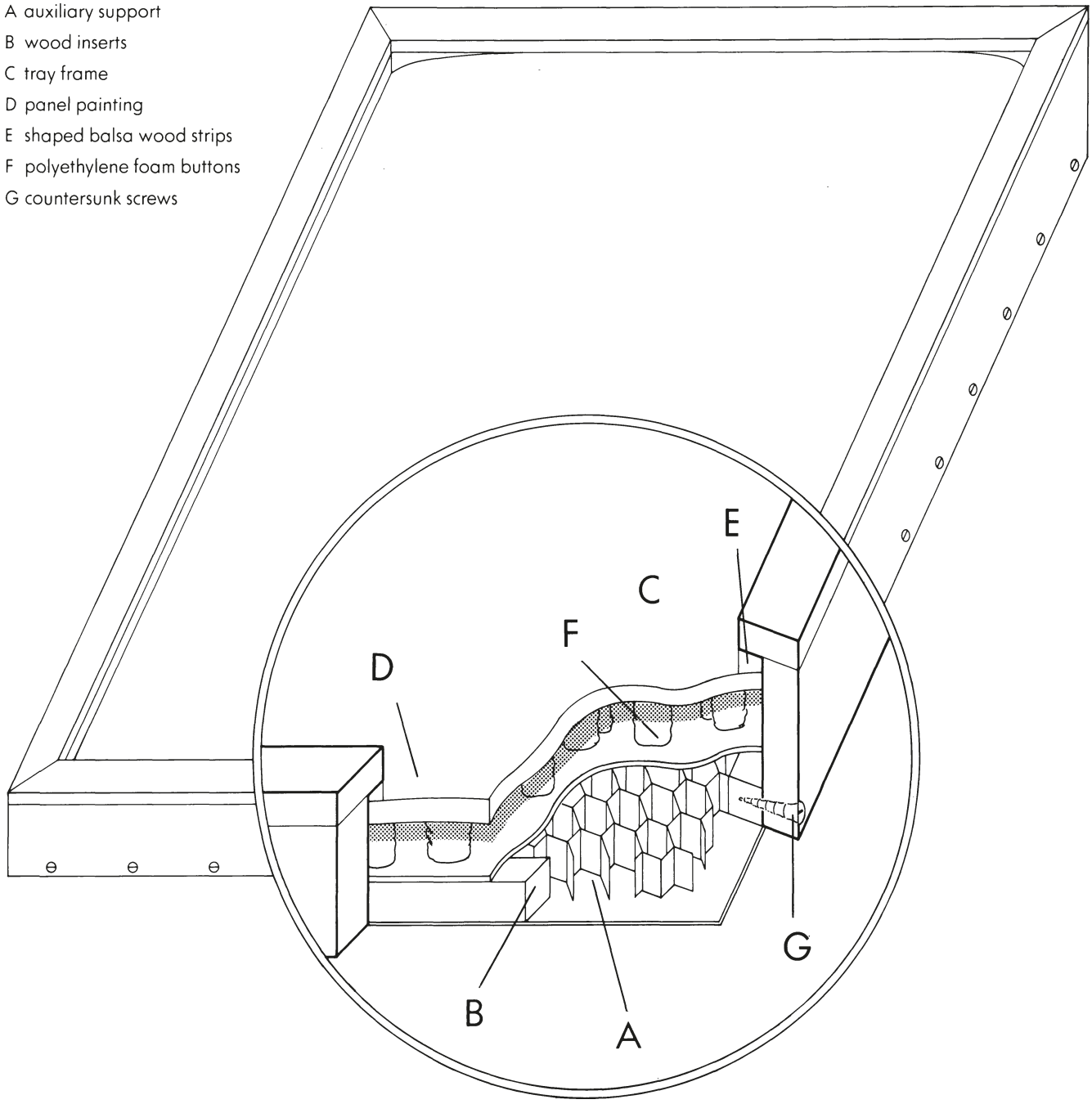


Figure 5 Cut-away diagram showing the structure of a panel tray.

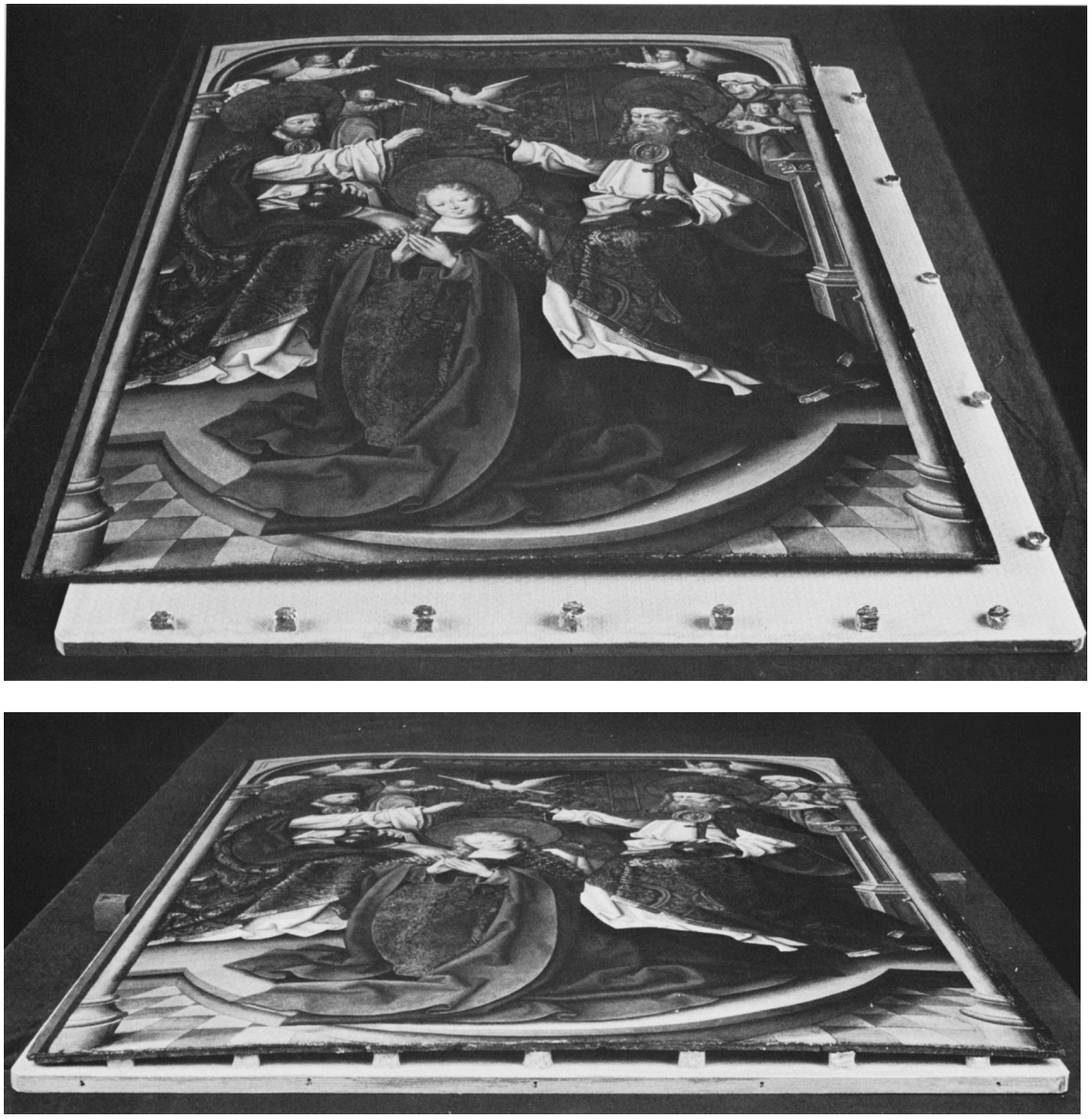


Figure 6
(Left and right) Stages in the fitting of *The Coronation of the Virgin* (No.263) into its panel tray.

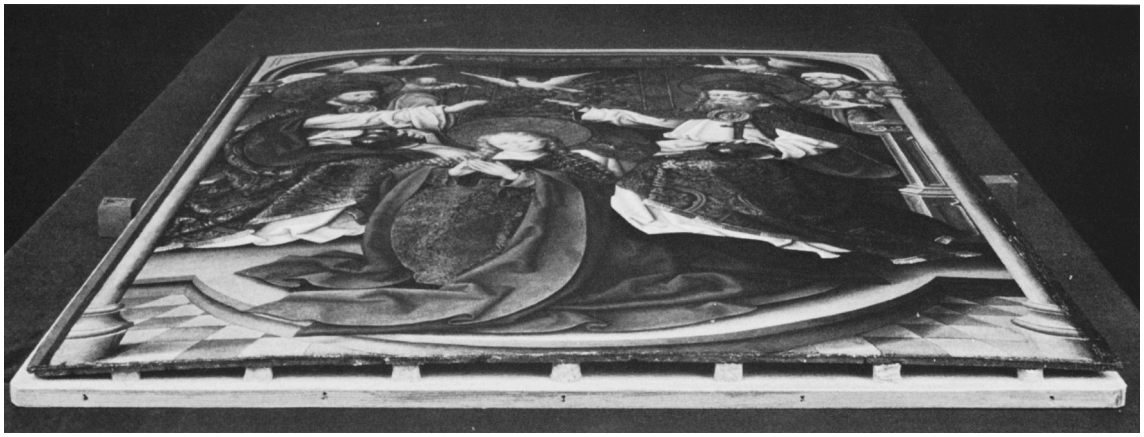
The construction of the panel trays
Janet Brough

A panel tray is a system in which a fragile or flexible painting is held against a cushioned auxiliary support [1] by means of an L-section frame which caps the front edges of the painting and is screwed to the sides of the auxiliary support.

The concept of the panel tray is not new, but for the two paintings by the Master of Cappenberg the heavy plywood and cork support used in earlier versions has been replaced by one of aluminium honeycomb board and polyethylene foam. This results in a lighter and more stable tray (Figs.5 and 6).

Before work began on the two panel trays, a template was made for each painting to indicate the chosen sight size. These templates served as patterns for the front edges of the L-shaped tray frames. The height of the sides of the tray frames consisted of the sum of four measurements: the thickness of the panels, the depth of their warp, the thickness of the foam buttons and the thickness of the aluminium honeycomb board. The front edge and side walls were cut from oak and glued together to form the L-section. Lengths of this L-section were then cut with mitred corners to form the four sides of each tray frame. In this case, oak was chosen to blend with the frames in which the paintings were to be exhibited [2]. The tray frame should not be so bulky that it is obtrusive when the painting is in its display frame, but it must be sufficiently strong not to be distorted by handling, and in proportion to the weight of the painting which it is to support.

The inside measurements of the pieces of tray frame indicated the exact sizes to which the two auxiliary supports should be made. These were cut from 14mm aluminium honeycomb board with glass-fibre outer skins [3]. The aluminium core was channelled out around the edges of each support to the depth of 12mm so that wood to take the screws could be inserted. The aluminium can be removed using a chisel (leaving the two glass-fibre skins intact), but the cleanest result was obtained using a router fitted with an edge cutter of the correct size. Cedar wood was used for the inserts because of its lightness and stability, and these were glued in place using an epoxy resin.



Each of the two aluminium honeycomb supports was then used as a form around which the mitred corners of the four pieces of L-section frame could be glued, thus ensuring a perfect fit between tray frame and support. A web-clamp was used during glueing [4].

Once the basic construction of the tray frames and supports was completed, the fitting of the paintings began. Shaped slips of balsa wood were cut to conform to the front warp at the edge of the panels. Balsa wood was chosen because of its softness (should the panels move, it will compress to some extent). These balsa slips were glued inside the rebates of the tray frames and lined with velvet ribbon which serves as an extra cushion and prevents abrasion of the varnish and paint surface. The paintings were then placed face down into their tray frames so that measurements for the buttons could be taken.

Squared grids were first marked on the aluminium honeycomb supports with the intersections 100mm apart. Sets of marks were also made on the back edges of the tray frames to correspond with the grids. A straight-edge was then moved across the backs of the tray frames and depth measurements were taken to the backs of the paintings at the grid intersection points. After subtracting the thickness of the honeycomb board, each measurement gave the exact thickness for each button.

The buttons were punched out from strips of polyethylene foam [5], cut to the required thickness and stuck in place on the grid with a contact adhesive. The paintings were then removed from their tray frames and were laid face-up on the cushioned supports and checked to ensure that each button was in contact with the back of the painting. The tray frames were then placed over the paintings and screwed to the inset edges of the aluminium honeycomb support through countersunk holes drilled about 50mm apart.

Once the screws were in place, the panels were fully supported, but the use of soft balsa wood and compressible foam still allows the panels the possibility of movement in the event of relative humidity changes. These panel trays might be adapted for use with other fragile or flexible paintings such as pastels or works on metal supports, adding protection with only a small increase in weight, yet leaving the back of the painting readily accessible for future examination.

Notes and references

1. Two accounts of alternative treatments using auxiliary supports can be found in EMILE-MÂLE, G., *The Restorer's Handbook of Easel Painting*, Van Nostrand Reinhold (New York 1976), p.29; and MARTIN, M. and REISMAN, S.N., 'The Surface and Structural Treatment of a Fayum Portrait', *Preprints of the Oxford Conference on the Conservation of Wood in Painting and the Decorative Arts*, IIC (London 1978), pp.191–8.
2. If a panel is to be placed in a panel tray, the frame in which it is to be exhibited must be taken into consideration. The rebate of the display frame may need enlarging, or the frame may need to be built up at the back to accommodate the depth of the panel tray. However, the sight edge of the tray can be made to coincide exactly with that of the frame, and stained or gilded to match so that it does not detract from the setting of the original frame.
3. The aluminium honeycomb boards used were Aerolam F boards, (with woven glass-fibre reinforced skins), manufactured by and available from Ciba-Geigy, Bonded Structures Division, Duxford, Cambridge, CB2 4QD. The boards do not warp or shrink, and weigh less than half their equivalent in plywood. Three thicknesses of core are available (12.5mm, 25mm, 50mm). For larger panels than the ones treated here, it might be necessary to use one of the thicker grades, or strengthen the support with an internal structure to ensure its rigidity.
4. If wished, a small triangle can be cut from each corner of the support, and a block of wood of matching size glued to each inside corner of the tray frame to give it extra strength.
5. The polyethylene foam used was Neopolen, manufactured by BASF, available in the UK from Hytech (packaging supplies), Back Heaton Park Rd., Newcastle upon Tyne, NE6 1UJ, Tel. Newcastle 658762.