ASSOCIATION *of* ARCHAEOLOGICAL
ILLUSTRATORS *&* SURVEYORS

Technical Papers

ASSOCIATION *of*
ARCHAEOLOGICAL
ILLUSTRATORS
& SURVEYORS

AAI&S TECHNICAL PAPERS

The Association has had requests from both individuals and organisations for a chance to obtain Technical Papers which have sold out. This folder has been compiled using photocopies of AAI&S Technical Papers 1-7 (edited by Richard Bryant). These papers are now out of print although some are presently under revision.

The reader should be aware that some of the advise is now very dated particularly as work on information technology and computer aided design has advanced at an enormous pace. However even the old information is of considerable interest in the history of archaeological illustration in general and of the Association in particular. Paper 4 was a joint publication with IFA (their Paper 10) and was assigned this number at a later date as Technical Paper 4 was never produced
The papers are as follows:

1. **The Preparation of Archaeological Illustrations for Reproduction**
   by A.S. Maney (1980)

2. **Computers in Archaeological Illustration**
   by J.D. Wilcock (1982)

3. **Drawing Ancient Pottery for Publication**
   by C. Green (1983)

4. **Preparation of Artwork for Publication**
   by C. Philo and A. Swann (IFA Technical Paper 10 1992)

5. **The Archaeological Illustrator and the Law of Copyright**
   by M. Vitoria (1984)

6. **Photogrammetry & Rectified Photography**
   by R.W.A. Dallas (1981)

7. **Drawing for Microfiche Publication**
   by R. Bryant (1984)

Mélanie Steiner (Technical Papers Editor 1999)

added 2006

12. The Survey and Recording of Historic Buildings
by David Andrews, Bill Blake, Mike Clowes and Kate Wilson

Technical Papers
IFA
INSTITUTE OF FIELD ARCHAEOLOGISTS
Technical Papers

INSTITUTE OF FIELD ARCHAEOLOGISTS TECHNICAL PAPER NUMBER 10

Preparation of Artwork for Publication

Chris Philo and Andy Swann

on behalf of the

ASSOCIATION OF
ARCHAEOLOGICAL
ILLUSTRATORS AND
SURVEYORS

AA I&S

Introduction

This paper consists of two parts. The first is concerned with general guidelines, rather than specific instructions, on the production of artwork for publication. The second deals with the printing process and the printer's requirements: the illustrator needs to have some knowledge of these in order to produce suitable artwork. Finally, there is a check list of the various stages involved in book production.

Part 1: Preparation of the initial artwork

Preliminary considerations

A good archaeological illustration will convey information about a site or find more concisely, and more successfully, than the required amount of text. Most archaeological publications therefore rely heavily on illustrations to convey that information. On a superficial level the drawings will make an instant impact: a potential purchaser may well thumb through a publication and note the quality of the drawings rather than the quality of the text before making a decision. There are, of course, other considerations involved in illustration work. The primary concern is that of accuracy, whether we are dealing with a bone pin or a series of plans of a complex urban site. Almost as important is the way in which the information is presented. Thought has to be given to point sizes and line weights in order that the different types of information are visually distinct. The overall design and house style should be worked out before commencing the artwork.

Materials

Paper

A high quality line paper such as CS10 is an ideal medium for archaeological illustrations. Its highly compressed surface allows line-work to be erased using a scalpel. The surface can then be smoothed down using a pencil eraser and drawn over again. Drafting film does not have such an adaptable surface as CS10 and ink takes longer to dry.

Pens

For most illustrations where a standard thickness is required technical pens such as those produced by Rotring, Staedtler and Letratech should be used. For finds illustrations, where a variable pen thickness may be more appropriate, a mapping pen is useful. This can also be used to good effect when drawing rivers.

Priming powder

After tracing off and before inking in a drawing, rub over the drawing surface with priming powder. This will ensure that the ink line will take properly, by removing the effects of greasy deposits and excess graphite.

Adhesives

Spray mount is an easy and effective form of adhesive. Positionable mounting adhesive (pma), manufactured by (for example) Scotch 3M, is a very useful alternative. This is produced on a backing sheet which transfers the glue to the required surface by means of a roller. This method of mounting up is particularly useful for lettering, where a whole page can be backed with pma and the individual

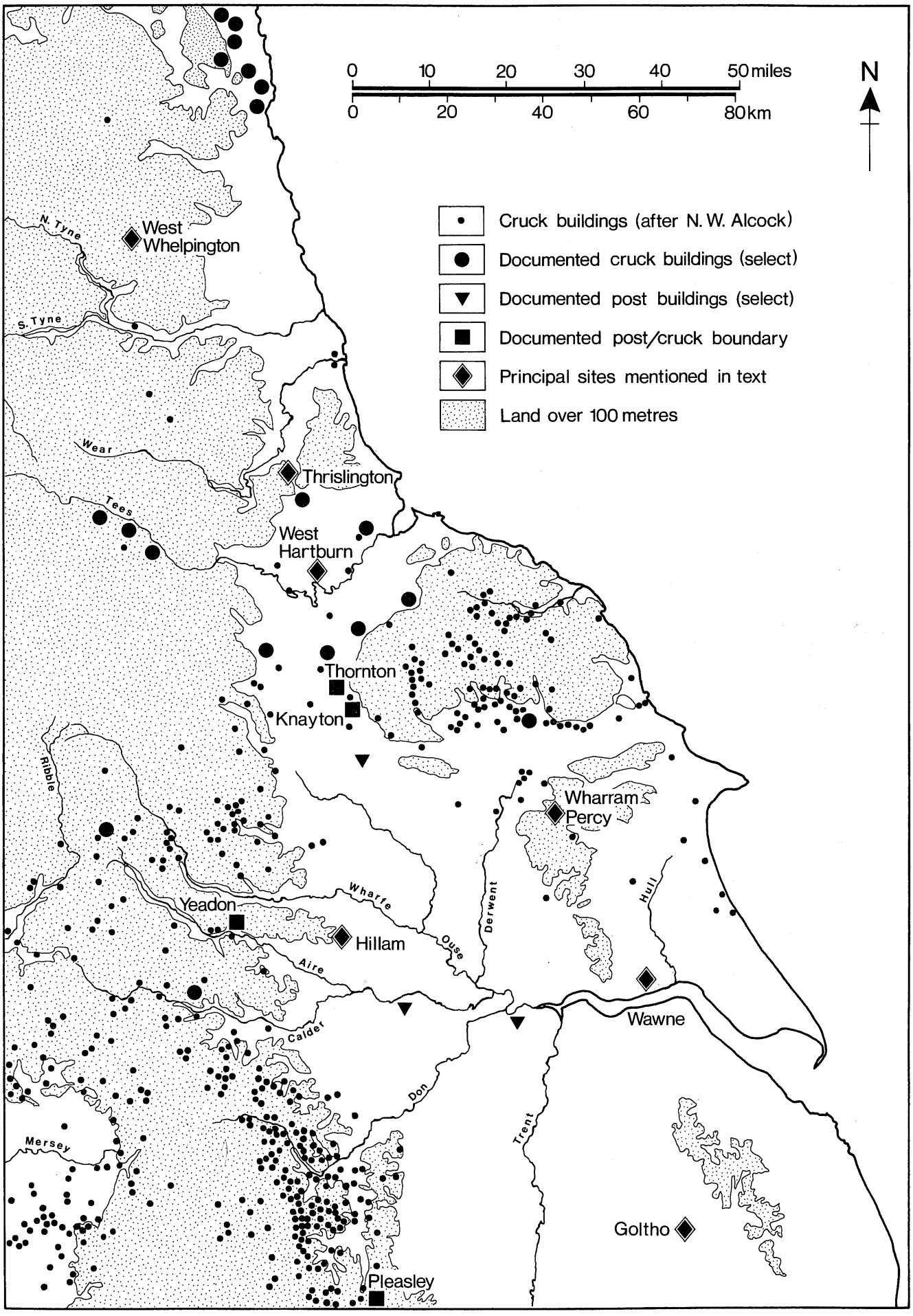


Figure 1: An example of the use of different line weights and point sizes (Wrathmell 1989, figure 14.1).

words cut out. Spray mounting individual words can be difficult. Cow gum is still used by some illustrators.

Both spray mount and cow gum give off noxious fumes and are potential health hazards. Wax adhesives are another alternative. The wax is heated and then applied using a small hand-held roller.

Process white/Tipp-ex

Any lines which are superfluous to requirements can be hidden using either process white or Tipp-ex. On CS10 dry ink can be erased using a scalpel. There is a special eraser for use on film.

Lettering

If a desktop publishing (DTP) system is available, the quickest and most efficient method of lettering-up a drawing is by using laserset lettering on an adhesive backing. It is easy to position and ideal for experimenting with different typefaces and sizes. Alternatively, lettering can be set by a printer or a print bureau. Rub-down lettering, such as Letraset, will produce a higher quality finish but it is very time consuming, less adaptable, and requires an experienced eye to space correctly.

Computer Graphics

Computer graphics software should be regarded by illustrators as another tool with which to make their job easier and take away the tedium of repetitive types of work. If you are faced with a large assemblage of querns or architectural fragments hatching-in the sections can be very time-consuming and tedious. By using CAD software (such as AutoCAD), digitising the section outline and selecting the required spacing, the hatching can be accomplished very speedily. Presentation graphics software can be used to generate graphs. Once the data have been fed into the computer, the information can be manipulated in various ways until the most effective means of presentation is found. Perspective views of buildings can be produced from the basic measurements of ground plan and elevation. Many types of drawing can be produced on a computer, but just because it has been generated on computer does not necessarily mean that it is quicker or that it is a good illustration. For publication purposes an illustration should be viewed in the same critical manner whether it has been generated on computer or drawn by hand.

Drawing for reduction (Figure 1)

Artwork is generally produced at a larger scale than it will appear at in print: it is easier to draw at a larger size, and any slight irregularities will be less noticeable on reduction. Usually maps, plans, sections, etc will be drawn up for a 50% reduction. A site plan may have been drawn at 1:20 in the field; it will then be reduced to say 1:50 to be drawn up for publication, then reduced down by 50% for a final publication scale of 1:100. Finds drawings may be reduced down to 50%, 33% or 25%, but this will usually be decided by each specialist.

Consideration should be given to the amount a drawing is to be reduced *before* line weights and point sizes are chosen. Also within a drawing, line weights and point sizes should be varied to show up different aspects of the drawing. For example, on a location map showing coastline, rivers and contours, the coastline will be the thickest line, the rivers in a variable thickness, using a mapping pen, and the contours in a finer pen. Equally, the point size of the lettering to be used should vary according to the hierarchy of information.

Usually the minimum line thickness that a printer will guarantee is 0.1mm which means that if a drawing is being produced for a 50% reduction the finest line will be 0.2mm. Ten point (10pt) is probably the minimum size lettering that should be used for a 50% reduction.

Reduction factors (Figure 2)

When discussing reduction factors, illustrators refer to linear reduction: a 50% linear reduction reduces an A2 size illustration down to A4 size, or more simply, a 100mm line down to a 50mm line. A 50% area reduction would reduce A3 down to A4.

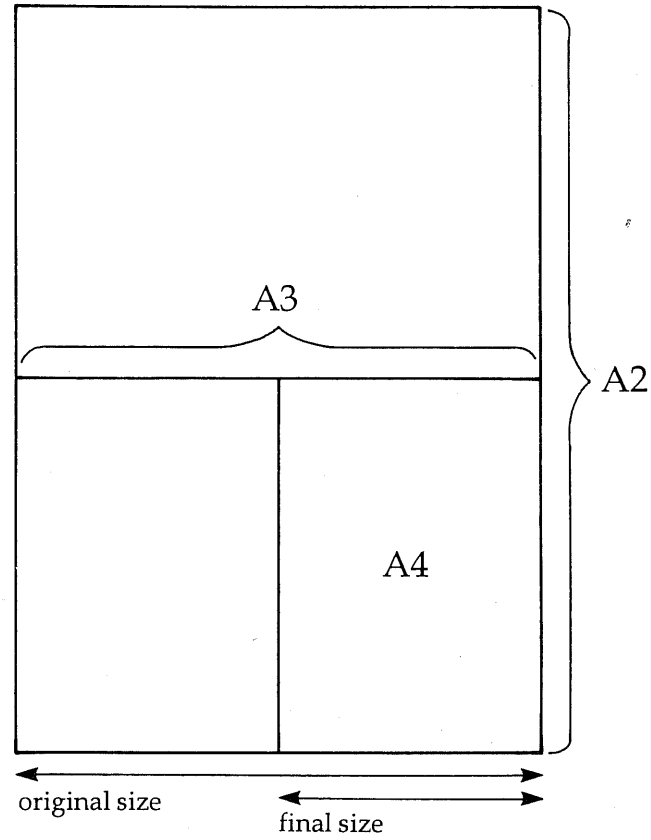


Figure 2: 50% linear reduction from A2 down to A4.

Page frames (Figure 3)

The page frame is that area of the page which is to be covered by text. *Before* commencing the drawing, the page frame size should be known so that the artwork can be drawn to a scale that will fit into that frame. The caption will also have to fit into the page frame so that the drawing will be about 5mm shorter than the frame, depending on the length of the caption. Plans and sections should be at a standard scale throughout the publication.

Portrait/landscape

Academic archaeological publications are usually designed with a portrait layout. Ideally, full-page figures should appear as portrait pages as these are easier to look at. Where this is not possible they can appear as landscape pages, with the bottom of the illustration on the right hand side of the page, whether it appears on an odd (right hand) page or an even (left hand) page. Single-column width portrait figures help to break up the text. Single-column width landscape figures do not integrate very well visually with the text so are best avoided.

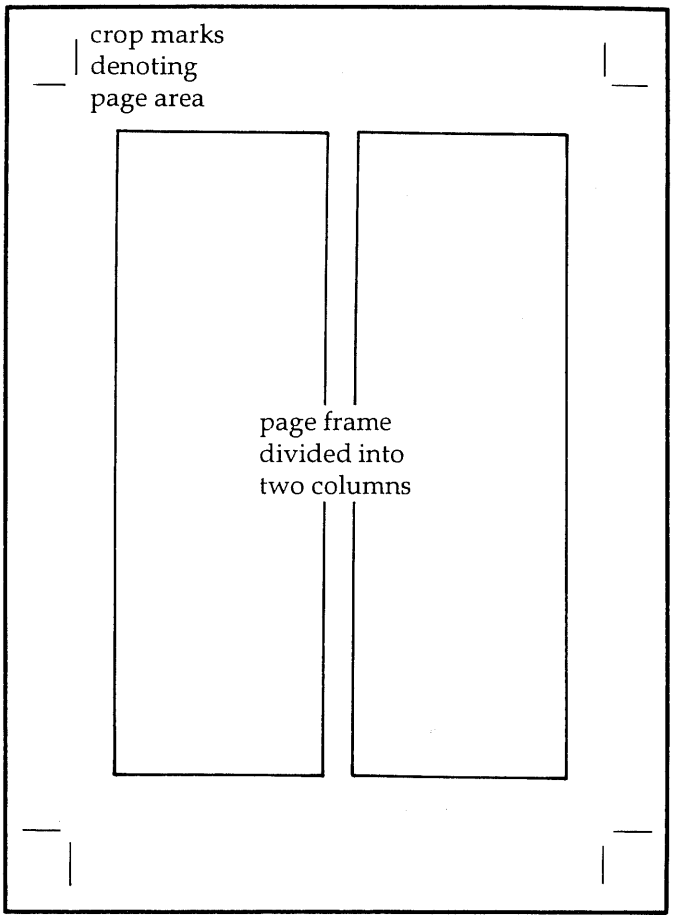


Figure 3: Page frame and 'crop marks'.

Fold-outs

In some reports the use of fold-outs for plans and/or section drawings is unavoidable. These should, however, always be kept to an absolute minimum as the printer has to insert them by hand, and this increases enormously the production costs. Fold-outs should fold from the spine outwards rather than up and down. They should also fold out in the direction which enables them to be referred to whilst reading the relevant text. The use of a double page spread is not recommended as it will be virtually impossible for the printer to register exactly the two halves of the drawing.

Captions

Captions will normally be set as part of the text, so space needs to be left at the bottom of the page for portrait illustrations and at the side of the page for landscape illustrations. It is not usually necessary to include the captions as part of the illustration.

Conventional symbols

If conventional symbols are to be used on a series of drawings, they should be established definitively beforehand, and be specified either on the first illustration or before it. As well as conventions for use on plans and sections, keys, north pointers, and scales should be standardised throughout the report. Conventionally the north pointer is placed at the top right-hand side of the page and the scale at the bottom, either right or left. It is a good idea to standardise the side at which the scale appears but this is not always possible, particularly with finds. If a single artefact appears centred on the page then the scale will look best centred as well. Any key to the conventions used will generally appear above the scale.

Mounting up finds (Figure 4)

Finds should be mounted up as full pages where possible. There should be enough space between each artefact to allow a catalogue number and to avoid confusion with other artefacts. In the case of pottery drawings, lining up the centres will produce a more orderly layout. Generally each group of finds will have been drawn to the same scale, and so requires a standard scale at the bottom of the page. Even if the scale is noted in the caption, it is useful to have a bar scale as well, so that if the page is copied and the size altered (by making a transparency for projection, for instance), the scale is still apparent.

Occasionally a single find in a group has been drawn at a different scale, so an appropriate individual scale needs to appear immediately underneath it. Finds drawings should be mounted up in their catalogue sequence as far as possible. Sometimes, because of the size and shape of the finds this is not possible, but the sequence should only be re-ordered within the page, and only after discussion with the finds specialist.

Shading

Letratone has a tendency to reproduce poorly in publications, so where appropriate, hand stippling or hatching will produce a more stable form of shading. An alternative is for the printer to produce a grey tone where required. This is expressed as a percentage. To produce several tones that are noticeably different from each other they need to vary by at least 20%.

Colour overlays

Colour overlays can be an effective method of showing certain information such as 'crop marks', on a black-and-white base map. Consideration should be given to the extra printing costs involved. To produce the artwork for a colour overlay, trace off the detail which is to appear in colour, at the same scale as the base, on to drafting film or line paper, ensuring that there are registration marks on both base and overlay.

Preparing finished artwork for printers

For drawings that will be reduced at the printers.

It should be made clear on each drawing where it will lie on the finished page. This can be done by the use of registration or 'crop marks', or, alternatively, by giving the printer the exact size artwork eg, A2 size for 50% reduction down to A4. Clear instructions as to the reduction factor, whether portrait, landscape or column width, and the figure number, can be written in light blue pencil which will disappear when photo-mechanically reduced by the printer. Where more detailed instructions are necessary, as with different areas of colour, these can be shown on an overlay sheet. Bleed-offs (where the image is trimmed on one or more edges) should be marked up and the image should extend beyond the trimming line.

For same size camera-ready artwork

In this case pages of text will have been produced with appropriate spaces left for figures. The captions will have been laserset at the same time as the text. Spaces should be left for the half-tones which are best screened by the printer.

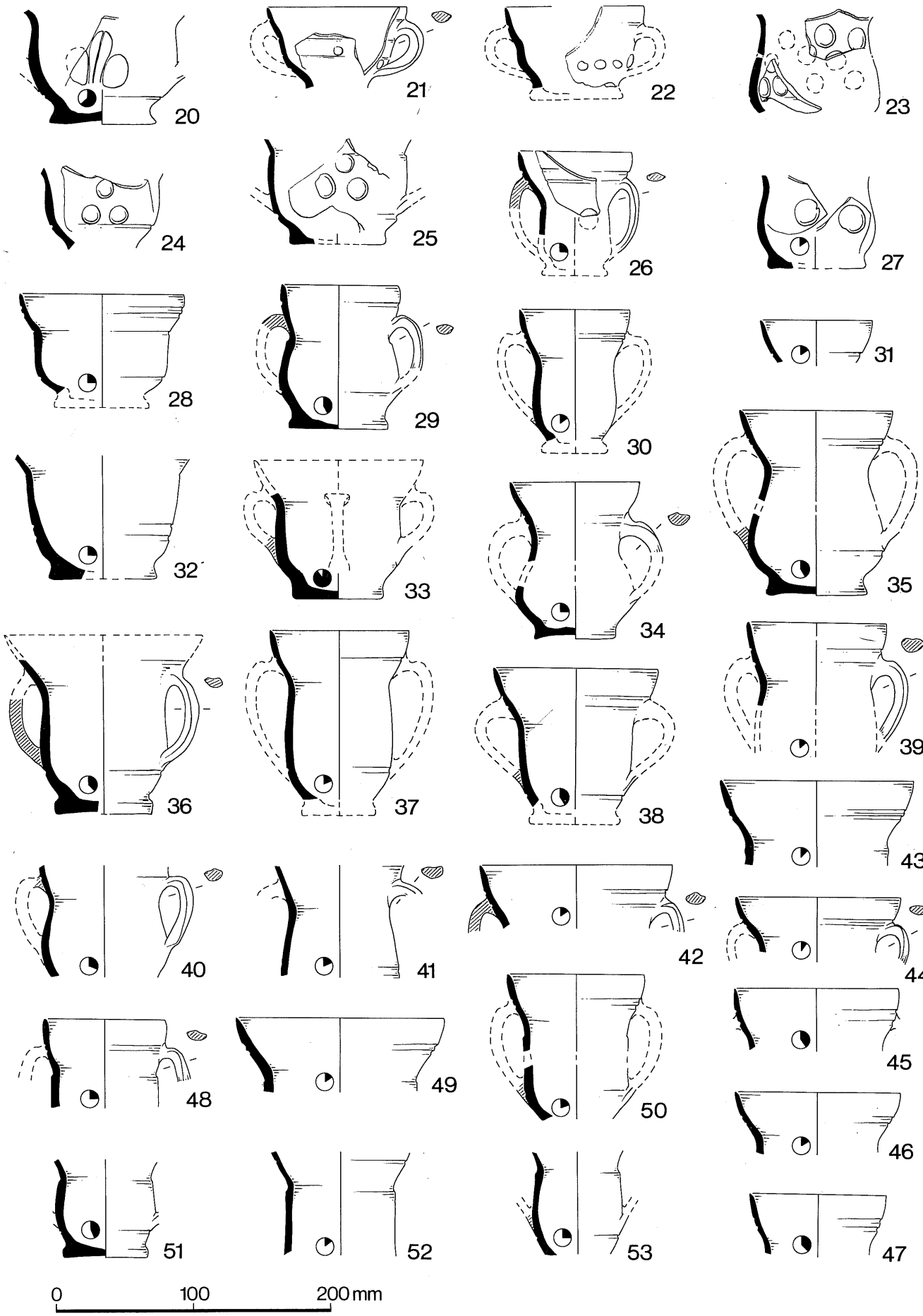


Figure 4: Page of mounted pottery drawings showing the lining-up of the centres to produce a more orderly effect (Moorhouse & Robert forthcoming, figure 53).

Preparing photographs for the printer (Figures 5 and 6)
Photographs for half-tone reproduction (see Part 2, Half-tone production and scanned images) should be of good contrast, sharp focus and always larger than the size to be published. They should be marked up using an overlay sheet of drafting film or thick tracing paper, folded over the top of the photograph and secured at the back with tape. A rectangle is then drawn on to the overlay to indicate the area of the image required. A diagonal line is drawn from the top right to the bottom left of this rectangle. The required width (column or page) is then measured along the base of the rectangle and a right angle projected up to the diagonal. The point at which these two lines meet will give the required height. This process can also be used for working out enlargements when dealing with colour slides.

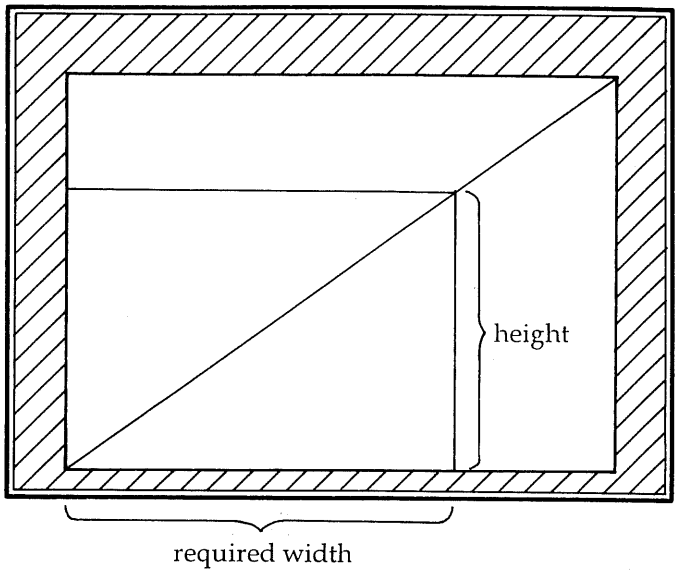


Figure 5: Marking up a photograph for printing reduction: hatched area to be cropped off; inner rectangle shows final size of image required.

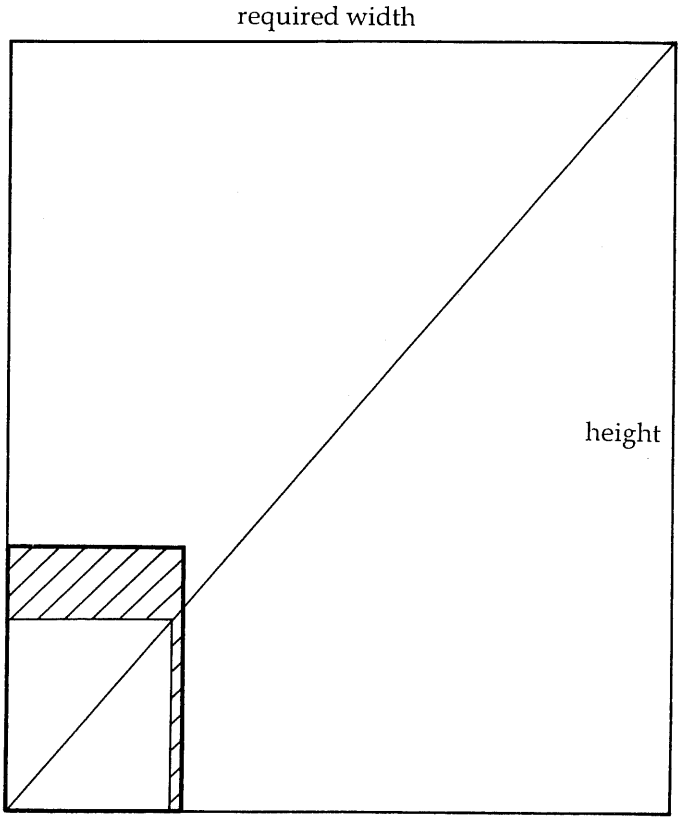


Figure 6: Marking up a photographic transparency for printing: hatched area to be cropped from transparency; largest rectangle shows final size required.

Page layouts
Where same size camera-ready copy is produced in-house and the illustrations are to be pasted up onto the laserset pages, a straight printout of the text is required initially. The illustrator can then work out where to place each figure within the text. Once this has been done, the illustrator should give the measurements for each figure and plate to the lasersetter. A further printout can then be produced with captions, page numbers, and spaces for the figures and plates. The reduced illustrations can then be pasted up.

Where the typesetting is done by the printer, the text will initially be produced in the form of galleys (equivalent to the straight printout stage in desktop publishing). These will then be checked by the editor(s) and/or author(s) whilst the illustrator produces a mock-up of the volume, including illustrations and photographs, to give to the printer. Illustrations should be as near to the relevant text as possible, usually appearing after, rather than before the text. Once the printer has received the proofed galleys and the mock-up he will then produce the page proofs to be checked. Once these have been checked and corrected the printer will go ahead with the final printing.

The advantages of using desktop publishing (DTP) in-house is that control over the text and illustrations is kept right up until the final product goes to the printer. The disadvantage is that once the whole report has been pasted up it is far more difficult for the printer to adjust the weight of individual illustrations. If the printer tries to compensate for a faint drawing he is liable to over-ink the rest of the page. To overcome this it is a good idea to go through all the illustrations with the printer to identify any potential problems, and to hand over the originals of any that do pose a problem so that he can reduce them.

Pagination
Odd numbers appear on the right hand side, even numbers on the left.

Part 2: The printing process and printer's requirements

Introduction
To understand what the modern printer has to offer it is necessary to look at the development of printing, and how the introduction of photography and computer-based technology has revolutionised the world of printing.

The development of printing techniques over the centuries has meant that printing has become cheaper and faster but, in terms of line reproduction, it can be argued that little advance has been made in quality.

Letterpress
The dominant method of printing from Caxton's day (he started printing in England in 1476) until the mid 1950s was letterpress. This is a relief process where the printing surface holding the image is raised above the non-printing background. The printing surface is inked by rollers and

then pressed against the paper to make the impression. Type was traditionally cast in metal (originally hand carved in wood), and individual characters composed to form text. Line illustrations were either cut into wooden blocks, or engraved into copper plate. These different elements were brought together to form the printing surface. Modern plate production can create the printing surface in a single piece. There are several types of presses. These differ according to their size and speed of operation.

Letterpress is now only used for prestige publications, invitations and ticket printing. It creates strong black images but has been superceded by lithography as modern production methods have made it cheaper.

Lithography

Although invented in 1798, lithography only went into commercial use at the start of the 20th century, when the offset principle was invented. Before then it had been used in poster work and as an art medium. By the early 1960s offset lithography had overtaken letterpress, and today is by far the most common printing method available.

Lithographic printing is based upon the principle that water and grease do not mix. The area to be printed is prepared in a way which makes it accept the greasy qualities of the printing ink.

The remaining area is coated with water. When paper is pressed into contact with the inked plate the image area holding the ink transfers to the paper, the rest of the area has rejected the ink because it is wet. In its early development lithographic printing was all done on 'flat bed presses' with the images drawn directly onto stone.

The offset principle

A major advantage in lithographic printing came with the discovery of the offset principle. The plate is wrapped around a cylinder, it is inked by a second cylinder, and the inked image transferred on to a rubber faced cylinder (offset). This image is impressed onto the receiving paper held on yet another cylinder. The advantages of offsetting are several. The life of the plate is extended, less water is transferred (aiding drying time), and the original plate can be read as a positive image.

There are two main types of offset presses: sheet fed and web fed. Sheet fed presses take individual printing sheets. They can be very sophisticated, some being able to print both sides in four colours on a single pass. Web offset uses a continuous roll of printing paper. Web presses are used in the printing of magazine and newspapers, for extended run work. Books and booklets are normally printed on sheet fed presses.

Other printing methods

Several other printing methods exist, but are usually only used to create particular effects or for special jobs. Screen printing may be used to produce posters, or to print onto fabric and plastics. Xerography is available in most offices and can be very effective in producing short run work. Laser printing, allied to modern computer technology, can achieve high quality results, again on short runs.

Typesetting

Recent advances in new technology have created vast changes in the area of typesetting. Until virtually the start of the 20th century, type had been hand set using pre-cast metal characters. Several systems were developed this century using hot metal and line casting, but the first real advance came with the invention of photo-typesetting in the 1960s. Many advances have been made in photo-composition enabling modern typesetting machines to set at extremely high speeds. An alternative to photo-typesetting is offered by the alliance of computer technology and software with modern high resolution laser printers. For a modest capital outlay it is possible to equip a DTP work station for the production of high quality text at more than 600 lines per inch (lpi) resolution. This technology is advancing fast, as is the software. Pre-formatted disks can also be processed on linotronic photo-typesetting machines, giving the very highest quality at an economic price.

Preparing the artwork for printing

Whatever printing process is selected, a series of events have to take place to convert the artwork into suitable printing plates to enable the publication to be produced. Great care will have taken place in the production of artwork for the printer. Everything should be paged-up, supplied as a clean copy and marked up with the relevant instructions. Assuming that the printing process used is offset lithography, the printer will take the artwork and photograph each sheet on a process camera to produce a contact-size film negative. If the printing process selected was, for example, letterpress, then the negative produced would have to be a reversal.

Imposition and plate making (Figure 7)

When all the film negatives have been produced the printer will join groups of page negatives together to make one large film negative. Usually the film negative will be an amalgamation of eight, sixteen or thirty two pages, depending on the format of the publication and the size of the press (therefore the sheet size) that will be used to print the publication.

Page negatives are joined with light-fast ruby tape, and half-tones, block tints, and certain detailed line illustrations can be 'stripped' in. The putting together of individual pages (imposition) is done according to a carefully formulated plan. When printed, the large sheet will be folded in such a way that each 'section' will read in the correct page sequence.

A contact print can be taken from the negative at this stage and hand folded to check that pages read in the correct order. The imposed negative is placed in contact with a sensitized plate (this can be metal, foil or paper, depending on the length of print run and the type of printing plant), exposed to light and developed and washed to produce the printing plate. The resulting image area will attract ink, the non-image area, when wet, will repel ink.

Half-tone production and scanned images (Figure 8)

Reproducing continuous tone images (photographic prints, pencil and tone illustrations) in print poses particular problems. Lithographic printing can only produce solid colour (no mid-tones) so that the original image has to be converted into a half-tone image. To create a half-tone, a mechanical dot patterned screen is held in contact with the negative material during exposure of the photograph or illustration. The effect of this is to create an image made up of dots, the size of which vary according to the strength of the original detail. Solid black would have large dots, highlights would have small dots.

The effects of half-tone reproduction can be seen by viewing any printed image through a magnifying glass, the dot patterns will be readily visible. The use of scanners in more recent years to produce half-tones has optimised the reproduction of fine detail, producing a better overall effect.

Single colour reproduction

Artwork prepared for printing in a single colour, or artwork separated out to be printed in two or more colours should always be originated as black and white copy. Where more than one solid colour is to be printed, this should be in the form of an overlay, usually on polyester film or clear acetate. Registration marks should be used to ensure that each successive overlay sheet can be positioned correctly. A different plate will be created for each solid colour.

If several colours are used on a piece of artwork it may be cheaper to use a full colour process, particularly if other full colour illustrations appear in the same section. Tints of solid colours can be specified to the printer by indicating the tint area and giving a percentage value to the tint. Specification of colour may be achieved by the use of a colour reference chart, the most popular one being the 'pantone' system.

Full colour reproduction

Reproducing colour images in print poses few problems provided that the image used is of good quality; either full colour artwork or colour photographs. The best results

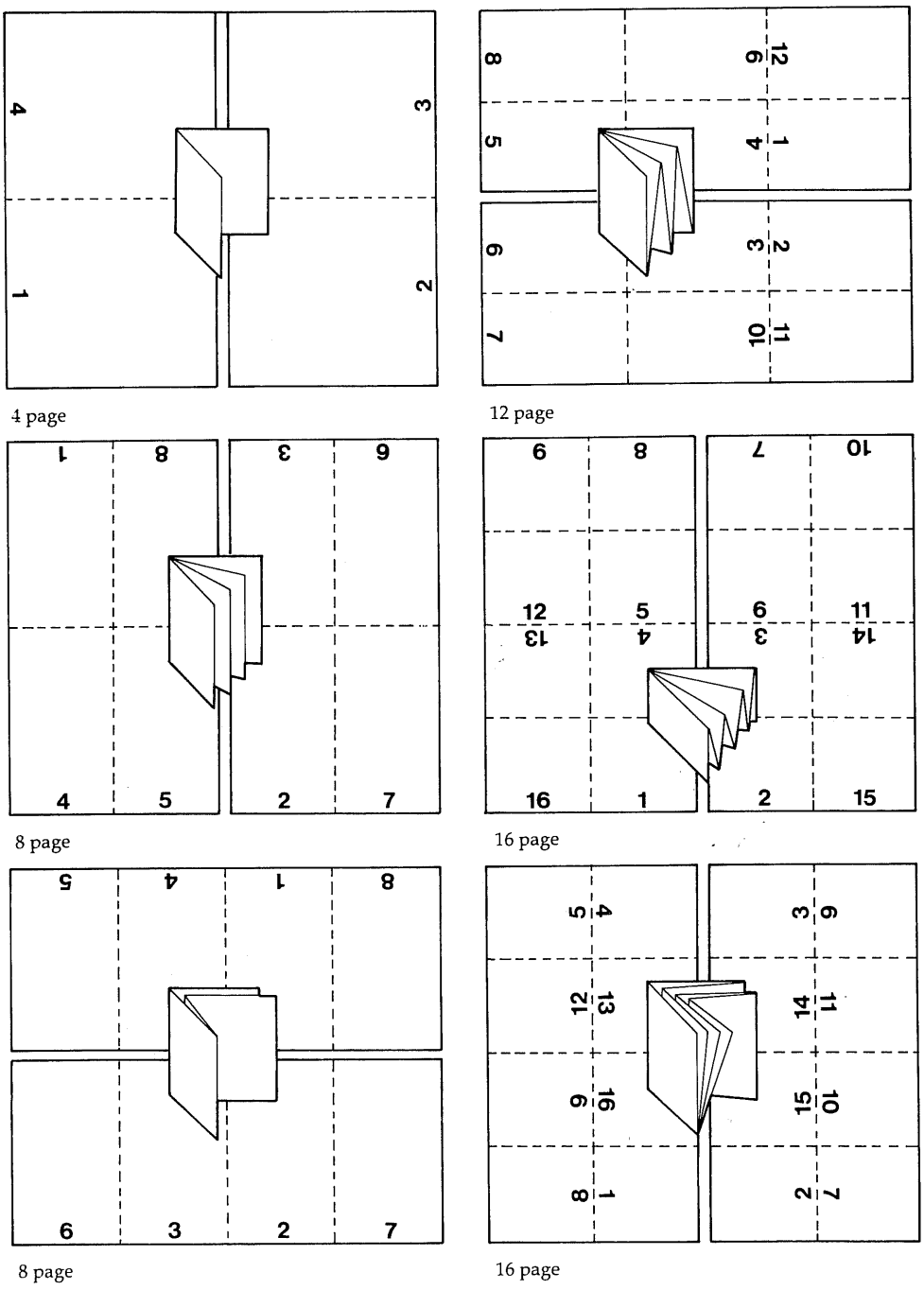
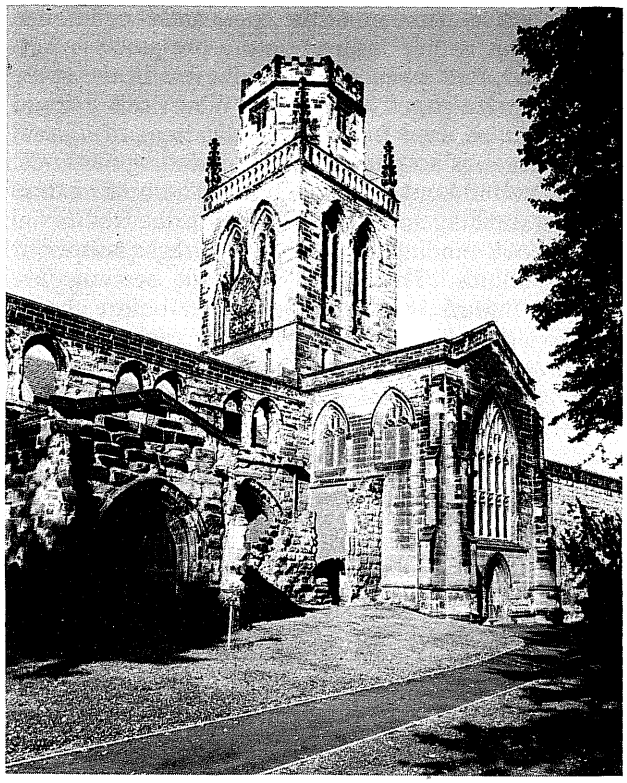
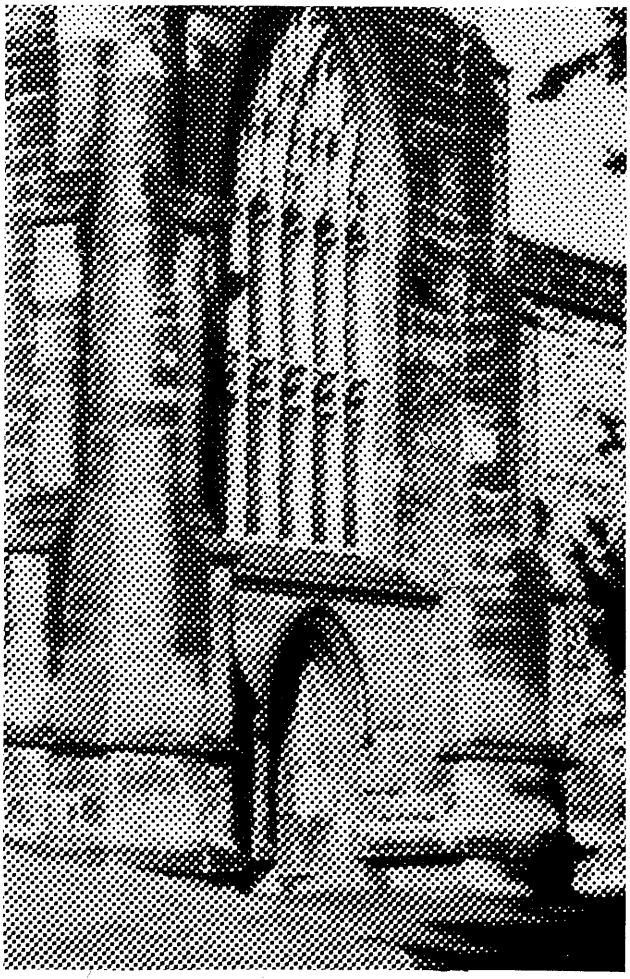


Figure 7: Example of page imposition plans, both sides visible.



100 l.p.i. halftone copy



enlarged section

Figure 8: Example of half-tone with enlargement showing screen pattern.

are obtained by using transparencies rather than colour prints. The colours should be strong, contrast good and focus sharp. The larger the format of film used, the better detailed the end results. Avoid 35mm film if possible. Use 6x7cms or 5x4ins (or 10x8ins) if available. Instructions for scaling and copying colour transparencies are the same as for black and white prints. If, however, careful manipulation of colour or detail is required, it is best specified on a larger reversal print with overlay.

The use of a modern colour scanner enables original artwork to be copied direct without the use of a transparency. It is important to note that artwork to be scanned should be on a thin flexible base, as it may need to be wrapped around a scanning drum. Producing full colour sets is expensive. It is always worth taking time to check details such as scale and content before despatch to the printer.

Printing in colour involves the original image being separated by filters into the three process colours (yellow, magenta and cyan) with the addition of black for shade and detail. This is called four colour process printing. Four separate half-tone plates are produced which when printed in register, with the screens set at precise angles to each other, produce the effect of a full colour image. Specific colours can be created using a combination of percentage tints of the four process colours. In a similar way it is possible to manipulate a colour image by indicating to the printer changes in certain colours, or to change the overall colour balance.

Proofing

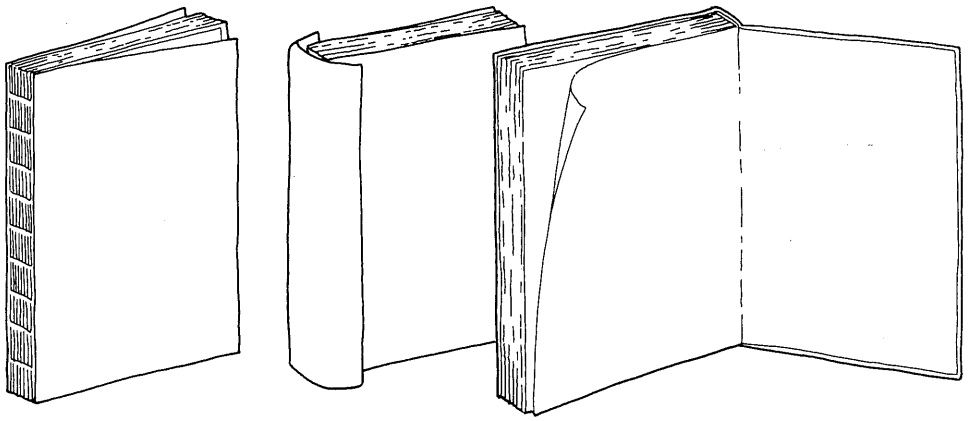
Reproducing either in black and white or full colour print can be expensive. It is therefore advisable, especially with colour work, to have proofs made before printing. Proofs of colour work can be made at the stage before plate making by registering the colour set and producing a photo-composite print. These go under various descriptions but the most common name for the process is 'chromalin' proofing. This will approximate the final printed result. It will pick up any change in colour balance, the introduction of colour caste, any problems with registration, scratches in the negative, or the introduction of foreign particles. Assuming that the 'chromalin' proof is acceptable, it is then possible to have another proof made after the plates have been produced. This can be specially produced on a proofing press, and can be expensive. The results from the process will be very accurate. The other option is to ask the printer for a machine proof. This is done after the press has been set to run. A few pulls are made and shown to the client at the printing works. Obviously the costs will be low if the proof is found to be in order, but will be very expensive if corrections need to be made. Proofs of black and white illustrations and half-tones can be made prior to imposition, in the form of a pmt copy, after imposition and negative production in the form of an ozalid or dyeline copy, or after the plate has been made, by taking a few pulls from a small proofing press. It should be noted that, although proofs may seem expensive, they are often worth having in order to save additional costs in repeat plate making.

Binding and finishing (Figure 9)

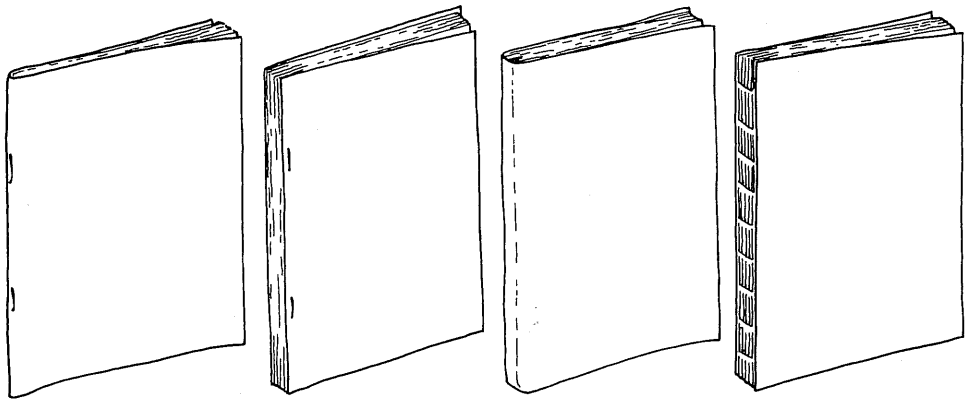
When the printed sheets come off the press they are machine trimmed and folded into sections. Sections may then be gathered together to form the book. It is at this stage that options exist regarding the type of binding that

a publication may have. The simplest form of binding is wire stitching or saddle stitching. In effect, a single section (in practice this could be several sections inserted one into another at the spine) is stapled with wire at the spine. The book is then trimmed on the guillotine, after the jacket has been added. This method is fine for booklets and short reports, but tends to be less successful for anything over 64 pages in length. A variation of this is side stitching, where the staples are inserted at the side of the spine. Books bound in this manner will not lie flat and can be difficult to read.

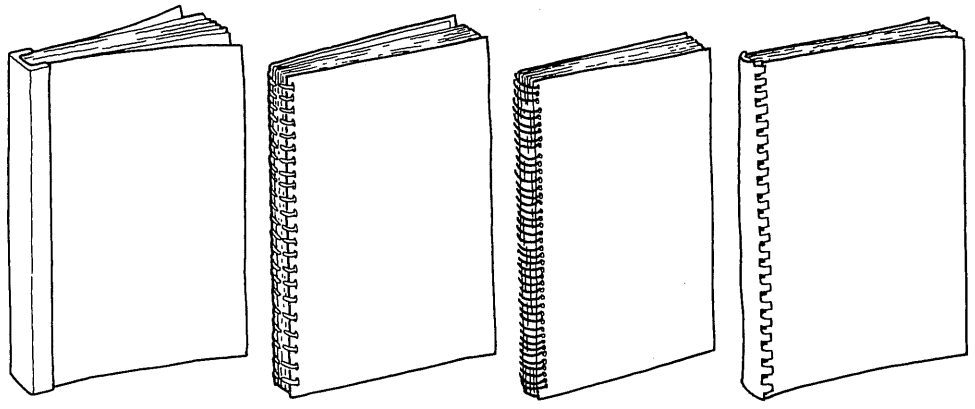
Perfect binding is a popular method, and is the way most paperbacked publications are produced. Sections are gathered together, trimmed at the spine and the cut edge roughened. This is then inserted into a pre-glued jacket, heat is applied, and when set, the adhesive in the spine holds the separate pages in position. Whilst this method of binding can be used for large publications of several hundred pages, it is not the strongest of binding methods, and perfect bound books can fall apart. The best method of binding is stitching and gathering. This is the traditional method of book binding and is still regarded as superior to other methods. The folded and cut sections are individually thread sewn at the spine before being gathered together. They are then sewn to each other and a reinforcing strip of strong paper or fabric is glued over



Case bound, or thread sewn binding - stages of production



Saddle stitched | Front stapled | Perfect bound | Thread sewn



Plastic clamp | Wire comb | Spiral wire | Plastic comb

Figure 9: Types of book binding.

the spine. Either a soft or hard cover can then be applied to finish.

Many offices are now equipped with small in-house binding facilities. Allied to DTP work stations it is now possible to produce short run work entirely in-house. Several such binding systems exist. Pre-glued covers can hold individual sheets of printed paper. Heat is applied, which melts the adhesive, and when cooled, the adhesive holds the pages in position.

Pages and covers can be punched and either wire or plastic spiral clamps threaded through the holes to hold the book together. Pre-printed covers can be purchased in advance to make the presentation of even a small publication look far better. These are ideal for short commercial reports.

Surface finish on book covers and dust jackets can be an important selling factor and will give protection. The cover of a book or booklet often helps to sell its contents, consequently even if colour is not used inside a publication, it is often worthwhile having a full colour cover. Printed covers need protection from rough handling. One method is to varnish (either gloss or matt). This will give surface protection and will tend to deepen colours. A higher level of protection will be given by laminating. This process involves the fusing by heat of a plastic film over the printed cover. Again, several different finishes are available.

Buying print

The dual aims when buying print are to obtain a quality product at an economical price. To achieve this, the print buyer should be armed with the relevant information. Firstly, know what you want, how it can be printed, and where to get it printed. It is necessary to have as much information about the printer as possible. What type of printing is undertaken, do they specialise in colour, short or long run, large format or postcards, for example? What plant does the printer use? A printer with a large four colour machine may charge more for short run work than a printer with just a couple of two colour presses. The printing industry acts as a barometer to the economic climate. It is a very competitive industry and a printer who is short of work will cut prices. Find out if the printer binds and finishes in-house. Tailor your requirements to the printer. Always ask for at least three quotes. Keep a reference file of printers you have used and would use again. Always try to add to your list.

Once you have selected a printer, you need to know how to specify a particular job. Break down the requirements needed to produce the publication. State the size and number of pages, illustrations and photographs, type faces, point sizes, type of cover, type of binding, finish, weight and type of paper, number of colour and black and white photographs and half-tones, length of print run and estimated publication date, for example. Don't leave anything out, and be as accurate as possible.

Project management check list

This section is designed to provide a summary of what to do and when to do it when planning a publication and its subsequent journey into print.

1. Designing the book

This can happen in two ways. You can set out to produce a book of a certain length to sell at a certain price and that will dictate the sort of publication produced, or you can take a typescript, photographic archive and collection of drawings and consider how to put them all together into a book. Both require a design element. Detailed consideration must be given to the layout and to who the publication is primarily aimed at.

Produce a layout sheet as soon as possible. This is simply a 1:1 example of a double page spread in the book showing the page frame, size of margins and column widths in outline. Occasionally this will be ruled with horizontal lines worked out from the typeface and point size used in a particular house style.

Photocopies of these are useful for working out where to place text and illustrations and how the final pages will look.

A flat plan should then be produced. This is a mock-up of the whole publication page by page, usually at a reduced scale. Areas of text, photographs and illustrations as well as chapter, section and page breaks can be planned using this method. It can be particularly useful when planning where to place areas of colour. Such a plan will make possible the calculation of section breaks, assuming that at this stage the section length will have been determined. Photographs and drawings should be commissioned as soon as possible.

2. Buying in print

Break down the publication into single elements. Make a list of requirements and send out for estimates. When the estimates are received compare not only the prices but make sure that the printer has understood all requirements. Check if it is an estimate or a quotation. Read the small print conditions on the back. A time limit will usually be involved in terms of the price. Check, for example, that a forthcoming wage agreement will not mean that the price will rise by 10% by next month.

3. Production

When the text has been written and edited it will be typeset. Galley proofs or printouts of the text will then be made and returned to the authors to check. The final text, illustrations and photographs may then be used to produce paged camera ready artwork.

Access to a process camera will enable all illustrations to be reduced to fit the page frame. Amalgamate with preformatted text and paste into position. Leave windows (either white space, or ruby film) for inserting half-tones. Mark up all instructions to the printer in light blue pencil. Carry out final check on paged artwork before despatch to the printer.

4. Checking and marking proofs

Mark up corrections directly onto the proofs and send them back with an explanatory letter and a list of all the corrections to be made and whether corrections are due to the printers error or the illustrators, as these will be costed out later. It is useful to retain a copy of everything sent.

5. Checking the final publications

Check each box of publications when returned from the printer.

Count them all, make random spot checks on binding, pagination, half-tones etc. Quite often a printer will include some of the first run copies but the machine minder may still have been making adjustments at this stage. Colours can change through the print run. Check for pages that are folded in, cut pages and any other

faults. Inform the printer as soon as possible if any fault is found. The length of a print run can vary by as much as 10% from the number asked for and depending on the conditions of contract, you may have to pay for the extra copies.

Artwork will normally be returned upon completion of the printing. This should be carefully stored away. The printer will usually retain the negatives for a period of between five and ten years. Plates are often discarded within a few months as they deteriorate with time and may not be suitable for reprinting.

Bibliography

Moorhouse, S & Roberts, I, forthcoming *Wrenthorpe Potteries: excavations of 16th and 17th-century potting tenements near Wakefield, 1983-86,* Yorkshire Archaeology Monograph series, 2

Wrathmell, S, 1989 'Peasant houses, farmsteads and villages in north-east England', in M Aston, D Austin & C Dyer (eds) *The Rural Settlement of Medieval England, Oxford*

Acknowledgements

The authors would like to thank Anne Jenner (AAI&S Technical Papers Editor) for her helpful advice, Stuart Wrathmell for his comments on Part 1, and Mike Heyworth (IFA Technical Papers Editor) for organising the printing of this paper. Figures 1-3 and 5-6 were drawn by C Philo, Figure 4 by A Slowikowski, and Figures 7-9 by A Swann.

The Authors

Chris Philo MAAIS AIFA and Andy Swann MAAIS are illustrators for the West Yorkshire Archaeology Service.

ASSOCIATION OF ARCHAEOLOGICAL ILLUSTRATORS AND SURVEYORS

This paper was produced in collaboration with the Association of Archaeological Illustrators and Surveyors (AAI&S).

The Association of Archaeological Illustrators and Surveyors was formed in 1978 and offers a wide range of services to its members and to those wishing to commission work. The Association sets and promotes high standards and encourages discussion of issues concerning illustration.

The Association can be contacted via Portway House, South Portway Estate, Old Sarum, Salisbury SP4 6EB.

Institute of Field Archaeologists
Metallurgy & Materials Building, University of Birmingham,
Edgbaston, Birmingham B15 2TT

Series editor: Michael Heyworth

ISBN 0 948393 10 0

Printed and Bound by The KPC Group, London and Ashford, Kent