

The reluctant draftsman displayed: some notes for occasional draftsmen

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THESE NOTES have been compiled for 'reluctant' draftsmen – that breed who, like the writer, prefer someone *else* to produce publication-standard drawings, but on occasion have to do-it-themselves.

Drawing plans, sections and diagrams

The majority of published drawings are drawn initially at one scale and then reduced photographically before appearing in print. Original drawings are customarily between two and four times the size of the anticipated final. The subsequent reduction 'crisps up' most drawings and generally improves their appearance. Drawings larger than four times final size are not only unwieldy and cause unnecessary problems for editors and printers, but make it more difficult for the draftsman to visualise the final layout. They also cost more in terms of basic materials used.

Where a drawing will eventually appear in print, there are two important things to consider:

- (a) what is the size of the *print* area on the page of the publication in which your drawing might appear?
- (b) does the illustration have to appear at a particular scale, e.g. 1:100, in the final version?

Page sizes of journals and books vary enormously and you obviously can't be certain that your particular offering will be acceptable to the journal of your choice. If you can therefore work to a page size that will suit more than one candidate, you may be saved much work should your first choice churlishly refuse your masterpiece, or the article which is fortunate

enough to contain it.

To determine the available page size select a full page of print in the journal, measure the printed area (excluding of course the page number), and then deduct sufficient space to allow for the final printed caption. Next, multiply the sides of the available space by two or three or whatever is your chosen factor, and this gives you the size and shape of the frame that you have to work within. Remember that your drawing will either be printed 'portrait' or 'landscape' – i.e. upright or on its side, so make sure you deduct the caption space from the correct side before multiplying. Having sorted out the shape of the available page, bear in mind that you don't have to fill it. You might need only a third of a page for instance, so don't use space unnecessarily. The exception to this rule is if your drawing is likely to appear in a publication which pays little attention to layout (I name no names), and may automatically give an illustration a whole page whether it deserves it or not, leaving unsightly areas of blank space. In this case there is something to be said for filling the available space.

Next to be considered is whether the final published image has to be at a particular scale. In many cases this may not be important, for example site location maps, histograms, etc., but with earthwork surveys, site plans and sections, there is merit in following accepted standards. In the case of pottery, etc., the standards have already been broadly agreed

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industry does not start until the Flavian period. Native potters exercised considerable skill in fashioning these vessels, most of which seem to be inspired by continental prototypes, although there are few attempts at direct imitation. The resultant idiosyncratic style is reminiscent of certain products of the Highgate Wood industry³ and the enigmatic 'London Ware'⁴. A direct link with these industries is perfectly feasible. Upchurch enjoyed its *floruit* during the second century, many of its most distinctive products falling into the period A.D. 90-130.

During the third century the industry faded away, in parallel with the neighbouring 'Black Burnished Ware' industries along the Thames. Investigation of the evidence is as yet only partially complete, in particular with regard to dating. The author would be interested to hear of stratified examples of the forms and fabrics described.

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(see below). In other areas there is less consensus and pending national agreement the reluctant draftsman would be advised to follow the practice of acknowledged authorities, e.g. for earthworks the Royal Commission on Historic Monuments.

It may be that the uncompromising shape of the site or diagram you wish to illustrate, combined with the shape of the publication, defeat your aim for scale standardisation without the use of pull-outs (normally too expensive to consider), or the detail becoming too small to be legible. If this is so, well – something has to give, so aim at least for consistency of scales amongst your own drawings. Even if the final printed version will be at an acceptable scale, e.g. 1:10, 1:500, mark a line scale on the drawing, and if it is a map or plan, don't forget the north point.

Drawing Pottery and Small Finds: Scale and Layout

For general guidance on the art of drawing pottery and small finds, the reader should look to the bibliography, but a few points may be worth emphasising here. Many scales have been agreed. Standard wheel-thrown pottery forms, for example, are generally illustrated at one-quarter scale, hand-made forms at a quarter or a third, depending on preference. The presence or absence of decoration, or need to show texture, may influence the decision. Large vessels such as amphorae remain to be standardised, appearing at varying sizes ranging from one-eighth to one-sixteenth. If pottery is to be reproduced at one-third or one-quarter scale, it is normal to draw it initially at life-size.

The range of scales used in publishing 'small finds' is alarming, and it is not the writer's intention to make any recommendation. Iron objects, however, unless of particular complexity, if initially drawn life-size can then be reduced to one-half, one-third or one-quarter scale as required. Copper-alloy objects can conveniently be drawn at twice life-size and be reduced one-third, giving a final published scale of two-thirds natural, which is adequate for most purposes, or be reproduced at natural scale. However, iron, copper-alloy, bone, stone, etc., may all require different scale treatment initially if they are to be mounted on the same page as objects of another class with a different scale of reproduction.

It is usual to draw objects on individual sheets and subsequently mount them together. They should preferably be drawn on drafting film or good quality tracing paper as should plans and sections etc., rather than the traditional card – although this view will raise the hackles of some. There are three reasons for this: firstly, the individual drawings can subsequently be easily mounted on drafting film, over a sheet of graph paper which will ensure that

each image on the page can be accurately aligned. Secondly, when so mounted, dyeline copies of the whole can be taken for security. Finally, such drawings can be loosely rolled and are much more easily transported and posted than those that are board mounted. The actual mounting of individual drawings is most conveniently carried out using a matt clear adhesive tape such as Scotch Tape. The tape will largely disappear on photographic reduction or can be touched out by the printer. The tape should, however, be kept well clear of the image to make any touching-up easier. Layout of objects on a page is to some extent a matter of choice, but make allowance for any numbering which has to be added *before* sticking drawings down since that may well affect the overall disposition of each item. Provisional layouts are certainly well worth the trouble. Remember also to mount drawings right to the edges of your page size; you do not need a 'margin'.

Line Thickness, Spacing and Related Matters

It is not easy, without experience, to visualise the final appearance of a drawing after it has been reduced. Conversely, it is difficult, even knowing clearly what you wish the final result to look like, to decide what should be committed to paper at the exaggerated scale. Will one scale of stippling, for instance, be too coarse when reduced; will certain lines run into each other or will others fade completely? There are several useful books containing charts which show the effects of reduction that are a great help in sorting out this kind of problem (for example, Hodgkiss, 1970). An alternative approach is to select a previously printed drawing whose technique seems suitable, measure directly the relevant spacing or thickness on the drawing, then scale up according to your needs. This can easily be done manually, or more speedily and effectively under an enlarging device such as a Copy Scanner or Grant Projector if one is available. The scaling-up technique is particularly useful in determining an appropriate scale for lettering. Line thickness cannot be readily gauged in this manner but as a rough guide, the pen size 0.5 or 0.6mm is a good general purpose size for main lines on drawings which will be reduced to one-third or one-quarter linear. One tends to underestimate rather than overestimate the thickness of pen nib needed. There are limits to the thinness of line which can be produced by the printer (see Hodgkiss, 1970). Anything under 0.125mm may well disappear or become broken up on reproduction.

Lettering and Letratone

Few people, apart from professional draftsmen, can produce good free-hand lettering. The easiest method of lettering is to use a rub-on kind, like *Letraset* or *Mecanorma*. If your drawing is on

drafting film over graph paper you should have no difficulty in getting captions horizontal, but be warned – the eye can detect fractional irregularity and it *will* matter if a letter touches the top of a line or the underside of it! The automatic distancing bars on some rub-on lettering may prove helpful for lateral spacing although they are not always appropriate. By working one word at a time and standing back and looking at the result, most people can obtain an acceptable result, and of course rub-on lettering can easily be lifted off. Some people prefer to use stencils but good stencils are expensive, they are more tricky to handle than dry lettering and the result can look unattractive.

The size of lettering to be used is determined by the amount by which the drawing is to be reduced. For example, if you want the final numbers on a page of pottery to be 2mm high and the pottery has been drawn natural size to be reduced to quarter scale, then obviously the numbers you use must be 8mm high. If you go into a shop and ask for a sheet of 8mm high numbers they may look at you a little oddly because dimensions of letters and numbers used in the printing and graphics trades are traditionally given in 'points', and you will find '16 point' etc. marked on the sheets (8mm high lettering is roughly 28 point). To clarify this in advance, get hold of a lettering catalogue first and work out which point size is needed. This will also be useful in selecting the style of type face you need – some journals require a particular one, but most will be quite happy providing the face is clear and simple, e.g. *Helvetica Medium*, *Univers* etc. One final point with lettering of any kind, is not to try to lay it over anything, e.g. a contour line, as this looks terribly messy: if possible leave a small space around it.

If you are not happy doing lettering, it is worth considering how much actually *has* to be on the drawing itself. There is no point in painfully putting masses of explanatory lettering on the drawing if the same result can be more simply achieved by incorporating the information in a caption which can be printed beneath the drawing. If you adopt this short-cut, it is helpful to write down a provisional caption as soon as the drawing is completed in case the meaning of the symbols, etc., is forgotten later. It is possible for the printer himself to typeset and then stick on lettering, but this facility is really only useful if there is a considerable block of text in one place (e.g. a complex description of conventions used in a section) and then there is a risk that something may result not to your liking, since you are unlikely to be able to deal with the printer directly yourself.

For large areas of tinting and shading, stick-on textured sheets like *Letratone* may be very helpful

but are a fiddle to cut to shape, and for small areas the same effect can be achieved by yourself ruling or dotting over an underlying piece of graph paper to ensure regularity.

Odds and Ends

The painful subject of erasing mistakes should be mentioned. Ink frequently appears to have a mind of its own, going where it shouldn't. There are two basic methods of dealing with it – cover it up or remove it. White correcting fluid – *Tipp-Ex* – is quite satisfactory for covering, and a moistened ink eraser effective for removing ink from drafting film. The former method means that your drawing is of course no longer translucent if you want to make a dyeline copy of it.

Next, scales for reduction. It is obviously the reluctant draftsman's job to mark-up his final drawings in a manner that the printer will understand. Where reduction is to be to a reasonable fraction such as a half, the drawing can be marked accordingly, 'reduce to 1/2 linear'; the latter word is very important since reduction to half by area is not quite the same thing! However, if reduction is to an awkward scale, it is far more satisfactory to draw a line of known length on the margin of the drawing with the comment 'reduce to make this line equal Xmm', then there is no possibility of confusion. Traditionally instructions to printers are in light blue pencil, which does not show up on normal photographic film.

Drawing equipment is very much a matter of personal taste and availability. Archaeologists as a race are generally committed to stylus type pens such as *Rotring* because of their general convenience including interchangeable nibs. There is a great range available and new ones are constantly coming on the market. A recent addition to the *Rotring* range is the *Rapidograph ISO* cartridge pen. However, on occasion the humble dip pen has something to offer particularly where variable line thickness is needed and is a rather less expensive item of equipment.

Finally, there are many excellent publications dealing with draftsmanship, to which the draftsman can refer, a few of which are listed below.

Barker, P., 1977. *Techniques of archaeological excavation*.

Hodgkiss, A. G., 1970. *Maps for books and theses*.

Webster, G. (ed.) 1976. *Romano-British coarse pottery: a students' guide*. CBA Res. Rep. 6 (3rd edn.).

Green, C., n.d. *Drawing Ancient Pottery for Publication*. Association of Archaeological Illustrators and Surveyors Technical Paper 3.