

SECTION NINE

MANAGEMENT

In a printing unit the manager is responsible for the smooth running of all the production departments, the day-to-day liaison with customers, the cost of work, and the ordering of supplies and materials. The extent of management required will depend on the size of the unit. Very small printing units do not need a full-time manager. If a part-time manager is employed, he should be involved daily with office work and production.

A printing unit within an institution must record all the printing jobs carried on for each department. Each job should be given a number. This should be entered in a log book which also records details of material and time expended.

ESTIMATING

An estimate of cost and delivery date can be given accurately only if all the facts are known (see check list opposite). Some of the things to consider are:

Has the copy already been set? If not, how many words are to be set and by what method? (e.g. typewriter, word processor)

Are any headlines needed? If so, by what method?

Are there any line or tone illustrations?

Are the sheets to be printed on both sides?

How many pages will be required and what size is wanted?

Checklist of things to be considered when giving an estimate

Title of job and description	It helps if each job has a title that is agreed by customer and printer. A brief description is also useful.
Quantities	
Number of pages and format	Leaflets and books are usually printed in sections of 4, 8 or 16 pages. Format is page size when trimmed.
Binding	There are numerous ways of binding. The best for a particular job must be chosen.
Colours	If possible an accurate description of the ink: maker's name and number.
Paper substance	Can be from stock or may have to be specially ordered.
Cover substance	Can be from stock or may have to be specially ordered.
Type face	Size and face for text and headings
Description of illustrations	Line or halftone; approximate number of either or both
Schedule	Either a specific completion date or dates by which the different operations must be completed.
Any other information	
Name and address of client	

Diagram 32: Checklist

If there are to be more than four pages, what type of binding will be used?

How many copies are wanted?

What paper, what ink, and how many colours?

Is the proposed delivery date one that can be kept?

Once the answers have been obtained to all these questions, estimates should be possible.

A PROGRESS SYSTEM

A checking system must be devised which will allow the manager to follow the progress of jobs through the unit. The details of each job as it reaches the manager must be entered in a book. The date the work is received should be shown, and a job number should be allocated.

The Job Sheet

A printed job sheet (see page 83) should be filled in giving all the production details. This will be fastened to the copy and stay with the job as it proceeds stage by stage to completion.

The nature of the job sheet will depend on the printing facilities. Things to take into account when preparing one are the job number, estimated completion date, number of copies wanted, number of pages. This could be followed by instructions to the typist giving size and style of type and maximum line length. Paper details could come next, and then instructions to the printer will give ink colour and any special binding requirements.

STOCK CONTROL

In a sophisticated and highly productive unit, a method of stock control is essential if supplies are to be ordered at

the right time. Stock sheets should be kept, giving up-to-date totals of all materials being used.

Ordering itself is a simple matter. How much to order and when to order is more difficult. Some supplies may be

JOB NO. CLIENT
Delivery date
Description
Quantity
Typesetting completed
Proof passed
Platemaking completed
Printing completed
Finishing completed
Job despatched

Diagram 33: Example of progress card

obtainable the same day, others may take weeks or months. This time-lag between ordering goods and receiving them will be found out only by experience. The manager should make a note of this time-lag on his first order; then by keeping a strict stock control an estimate can be made for ordering further supplies. It may be possible to make an annual order to suppliers with specific instructions for goods to be supplied at regular intervals during the year.

Ordering too much of some supplies is as bad as ordering too little. Offset plates will deteriorate if stored for too long. This results in wastage and in machines standing idle until more plates are available. Rub-down letters and some chemicals and papers also suffer in the same way. Printing inks are reasonably immune to deterioration and will stay usable for long periods. Most types of paper will, if stored properly, remain stable for some time.

SCHEDULING

In graphics and typesetting, schedules should be planned so as to ensure a steady flow of work. Thus, jobs that call for many hours of typing and only short runs should be stretched over a number of days to allow other small printing jobs to be fitted in and keep the printers as well as the typists busy. Similarly, short run, single-sheet jobs should be interspaced with work that gives the binders something to do. Equally important, a very long run on the printing press should not be allowed to lead to a pile-up of jobs waiting to be printed.

STAFF TRAINING

Every small printing unit in a developing country needs to have an organised training programme for all its personnel. The organisation of on-the-job training is the manager's responsibility. He should ensure that technical staff receive instruction from those skilled in the operation of the various machines. Where a unit cannot undertake its own training, assistance should be sought from outside instructors. Time should be set aside for this on a regular basis. Formalised full-time training should also be envisaged, perhaps at a technical college.

JOB

JOB No.

This sheet must accompany the job through each process (copy and proofs to be attached) and returned to the office immediately the order has been delivered.

Date order received _____

Customer _____

Quantity _____

Description _____

Remarks _____

Proof wanted _____

Proof sent _____ Returned _____

Order wanted _____ Delivered _____

Delivery to _____

Typesetting completed _____ Printing completed _____

Binding completed _____

MATERIALS

Paper _____

Card _____

Negatives _____

Plates _____

Inks _____

Binding _____

Extras _____

Diagram 34: Example of a job sheet

If everyone in a small printing unit is trained in more than one of the production processes, a steady flow of work can usually be maintained. Machine breakdowns are more difficult to overcome. One possibility is to ask another printer to help you out - a favour you may well be asked to return.

WORKSHOP PLANNING

An elaborate or specialised building is not needed to house a small printing unit: a room the size of a small classroom should be adequate. Nor is it possible to draw up a standard floor plan for all small printing units. What is important is to locate the machines and supplies in a way that allows for the work to flow from origination through platemaking and printing to finishing. Most rooms are not built in a way that makes it possible to do this in a straight line. In such cases, the work-flow must be bent round in the form of a U to enable the work to start and finish at adjacent points.

If possible, the management area should be separate from but accessible to the workshop. The remainder of the unit can be housed in one large room or a series of smaller rooms.

Paper Storage

Paper storage should either be a small room with shelving, or a corner of the workshop partitioned off and provided with shelves. The lowest shelves should be wide enough to take the largest depth of paper or card that is used.

Platemakers

Platemakers can be located within the workshop. If the supplies are stored in cupboards underneath, the operator will be able to work with maximum efficiency. If a large platemaker is used, a sink unit with running water should be located nearby.

Darkroom

This will be necessary when a process camera is purchased. If a small room is not available, a part of the main workshop will have to be partitioned off. It must be made completely lightproof, with an entrance that will enable the operator to enter without light penetrating inside (see section 3).

The area must be large enough to hold the film-processing equipment as well as the camera. A sink unit with running water and large enough to hold two trays the size of the largest film will be needed for hand processing; or where a processor is used, a smaller sink unit will be needed with a bench for the processor.

Cupboards and shelves must be built-in to give storage for the film, material and the chemicals. Every effort should be made to prevent dust entering the darkroom.

It would be an advantage if the darkroom were made large enough to contain the large platemaker, then the same sink can be used for processing and platemaking.

Printing Section

Clean bench space is needed to store paper for jobs in progress and jobs waiting to be printed. Moveable trays under the benches will assist in moving the piles of paper round the unit.

The workshop will need a place where inks can be stored; gums, chemicals, oil, cleaning materials and tools can also be kept there.

Finishing Section

This department will take up more of the workshop area than all the other departments put together. Most of it will be bench space. All jobs moving through the printing unit will be stored here while awaiting finishing or despatch. A

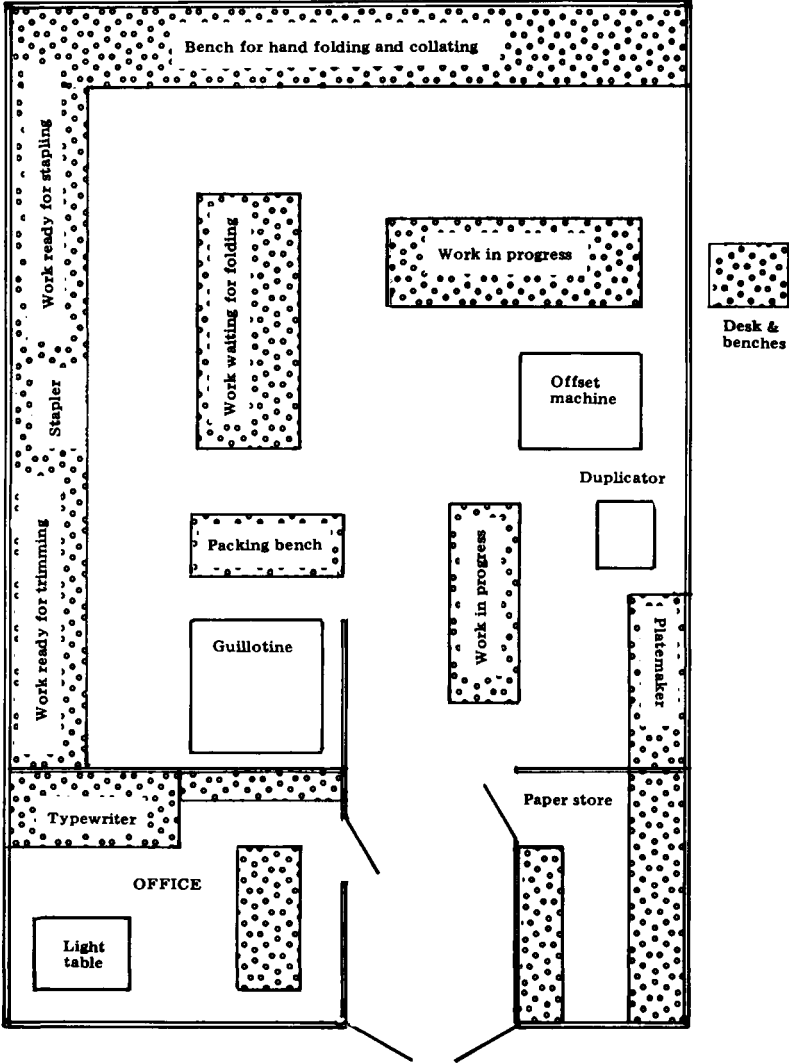


Diagram 35: A workshop layout for simple equipment (Benches would have built-in storage space beneath)

large bench for hand folding and collating is essential; and whatever type of binding system is used, space will be needed for the machine, and bench-space on either side of it for the work in progress.

Trimming of finished printing will also require bench-space for books before and after the operation.

The material will have to be finally packaged on a strong bench or table and will need some system of storage while it awaits collection.

Hygiene

Hand-washing and toilet facilities for the staff should be as close as possible to the work area. The provision of an area for the preparation of food and drink should also be considered.

A first-aid box should be available and displayed in a prominent place.

The Building

Doors should be wide enough to allow for the easy movement of machinery and materials. One exterior door should be a double door. Extractor fans will be necessary in areas where strong-smelling or toxic chemicals are in use.

SAFETY MEASURES

Safety measures need to be observed in each section of a printing unit.

Composing and Graphic Section

When not in use, pens and inks should be kept away from artwork, and lids fastened securely on tins of adhesive. Accidents can easily happen and the artwork can be ruined.

Golfball and daisywheel typeheads should on no account be allowed to drop on the floor. The metal of a golfball is very thin and can easily buckle. Daisywheels are made of plastic and the finger-like projections can break easily if they are not handled carefully.

Because the electronic mechanisms of the typewriters are delicate, no food, drink or smoking should be allowed in their vicinity.

Printing Section

Printing and duplicating machines tend to be noisy and if possible should be operated in a closed room.

Machines should be placed at least three feet apart so as to allow ample room for the operators to move around during the working operation. Safety devices should not be tampered with.

All tools and accessories should be stored in proper tool boxes. These can either be placed under the machines or mounted on the wall with a safe lock.

Because of the extensive use of paper and chemicals in off-set printing, no smoking should be allowed in the print room and a NO SMOKING sign should be displayed.

If kerosene is used for cleaning purposes, it must be stored in a safe place. Cleaning rags impregnated with kerosene should be thrown in tins with lids so that there is no possibility of their catching fire.

Stencils after use have ink all over them. If they are to be retained, the backing sheets should be replaced and they should be put away in cupboards.

Finishing Section

The safety of the operator is most important when working on guillotines. All models have built-in safety devices which must not be tampered with to increase operating speeds.

INKS

The inks used for writing (in the case of calligraphy), for duplicating, for offset printing, and for silkscreen printing, are all different. Printing ink is more akin to paint than to writing inks. It consists of a finely-ground pigment which imparts the colour, and a liquid medium for conveying the pigment to the print surface. Ink pigments are fairly standard, but the liquid medium varies according to the printing process. For example, some processes require a tacky ink in which linseed oil or varnish is a constituent; some need thin ink; some need a quick-drying ink. Consult your supplier to make sure that the type of ink you buy is the one best suited to your purposes.

PAPER

Paper is made from cellulose fibres which can be found in all plant material. Printing papers use two main sources: soft-wood trees and esparto grass. They are used both individually and as a mixture. The cheapest papers are made from wood-pulp only, and the best papers are made from esparto. An essential ingredient of paper, called "size" helps to hold the fibres together and makes the paper resistant to the penetration of ink and water.

Some papers have filling agents added: the most common is china clay. It improves the opacity and gives an extremely smooth surface for printing.

Printing Papers

Newsprint, one of the lowest grades, is made from wood-pulp. It is used when permanence is not important; it tends to discolour.

Bond is a strong, opaque paper used mainly for stationery printing. It is made from esparto and is available in colours that are reasonably permanent.

Uncoated is the most basic and least sophisticated type of paper. It is made from a mixture of woodpulp and esparto. Its surface varies according to the treatment it receives during making.

Coated papers have china clay as an ingredient. Usually they have a high gloss finish and are ideal for printing half-tone illustrations.

Cast coated has a very high gloss and is expensive. It is used mainly for book jackets, and, in card weight, for glossy covers for paperback books.

Choice of Paper

Paper for offset printing must be properly "sized" (see above) so as to resist the moisture content of the process. Because offset inks are more tacky than others, the paper should have a good surface strength to prevent it being removed during printing (picking).

Uncoated papers tend to absorb ink: this causes the image to spread. Half-tone illustrations on these papers tend to become less sharp than on other papers.

Coated papers, having a smoother surface and less absorbency, give a sharper image.

If the surface is smooth, the ink transfer will be more uniform than on rougher papers. This will give a sharper, cleaner impression.

When choosing papers, the type of job (whether text, line illustration or half-tone), and the permanence of the work must be taken into account.