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Print: How You Can Do It Yourself

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This book is not a standard print text book or an introduction to the printing industry. It is a simple guide to do-it-yourself printing.

Naturally it is up to the individual or the group using this handbook to work out the most suitable and inexpensive way to print what they want to say. The handbook is filled with practical information on how to print.

Indeed, the basic reason for printing such a guide at all is

that although people are now able to print their own ideas, rarely do they actually take advantage of the modern equipment that makes this possible.

This is the second edition of 'Print How You Can Do It
Yourself'. We have revised, extended and improved it by incorporating criticisms and suggestions received in response to the first edition. We are still interested in hearing from you, the readers and practitioners, about your use of the Handbook.

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# WE NO LONGER JUST

We are surrounded by it the world of print. At school, at home, in the street, from adverts to newspapers to books. Even through the letterbox we are bombarded by print.

Yet for most of us, it is a distant world. The production of all these millions of printed words. designs and pictures is a complete mystery. We are consumers - readers. And vet we can all be writers. printers, publishers as well as readers, in our own neighbourhood, our living rooms or garages.

The powerful world of socalled professional 'printing' can undermine the rest of us by making us passive consumers. The makers of the Book, the Advert or the Newspaper appear to have a monopoly on ideas and the means of expressing them. This is clearly not so, as anyone who stops to question it for a moment knows

full well. We can all print whatever we want to say or display in a professional manner in our own neighbourhoods. Modern technology has made this possible.

Mass circulation publications printed on large printing presses preclude much local self-expression. As a printer/publisher in your own neighbourhood you have a better chance to express exactly what you want to say. You can be your own reporter, subeditor, editor, manager, banker, printer and distributor. You won't have as large a circulation as the big dailies, but at least you will be able to tell some home-truths or communicate some creative ideas where they will be most useful and relevant.

In this book we have tried to show that there are various modern machines which can enable individuals and groups to organise printing for themselves less expensively and will allow them to exercise control over the entire process from start to finish.

The same technology that has produced the giant fourcolour presses for the colour magazines has also given us the small litho press for offices. Photographic offset litho revolutionised the printing world: secretaries, clerks, errand boys - even managers are now printers at the flick of a switch.

Most commercial printers of course dismiss small offset litho. They even lump it with photocopying and call it 'reprographics'. Whatever you call it, this process is exactly the same as most 'professional' printers use. The past few years have seen the quality of the small offest printing machines improved to a point beyond any other copying method. The actual process

has been simplified. Electrostatic cameras, for example, make plates for offset machines almost instantly. Some of the implications of its development are now becoming clear. In the past few years small offset presses have become available to people outside offices and printing works. Schools, community centres, advice centres, councils and a large number of quick print shops have bought these presses. People are beginning to set up community presses and are teaching others who want something printed how to print it themselves.

In do-it-yourself printing. there is no censor other than you or your friends. This is not simply a freedom; it also makes you more responsible for all libel. obscenity or copyright infringement and for the ultimate shape and image of the paper.

On the other hand, because

# PRINT



Kids can do it; Pat & John printing their playground's paper

# HAVE TO CONSUME



most people will be printing for their own community purposes, the grass roots culture can find a voice. By making things relevant at a very local level, more people become involved in solving their own problems themselves: more articles. books, stories and autobiographies will be written by people who were previously only passive observers: more new ideas for the betterment of the community will emerge from all those who will have to live with them.

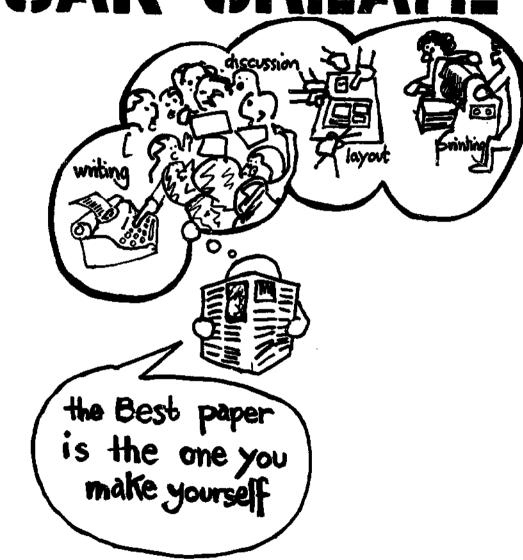
Many of the new machines can copy pictures as well as words. Instead of producing just a mass of words you can envisage a much more visual language of words, images and pictures. Readers can become not only writers but photographers, cartoonists and designers, editors and printers as well.

Instead of a five-year apprenticeship to become a printer you can go on a

five day course. You don't even need a five minute course for several techniques. This book should help you learn the basic steps. It isn't a total guide to printing. But it does make simple truths self-evident; you can print whatever you want. and control each and every stage yourself. This is a practical book but the practical activity described does have political implications. It is up to you in actual work to develop your influence as a communicator and as a focus for others in your neighbourhood.

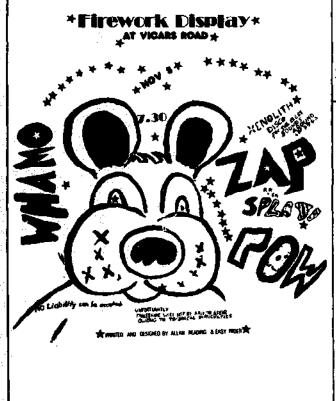
WE CAN CREATE

The varying methods of printing we describe here are being constantly changed and developed. It is not only up to the 'experts' to do this job. Those who use the machines can and do invent and innovate. The developments that improve printing and make it a more readily available process should be passed on and not kept secret (for the sake of profit). We hope further manuals will contain far more technical and practical information. It is up to you, the actual printers to produce these manuals, to pass on your tips and your trade secrets so that other people can develop their own voice and use the knowledge to express themselves. Thus, as printing becomes increasingly available, it will be changed into an altogether new form. We would be very interested in seeing your suggestions and passing them on.



# WHAT WE NEED

100 posters cost about £3



1000 newspapers cost about £10 for A3 sheets printed both sides

Lead poisoning

Committee of times

ASCOT PROFITS FROM POISON

ARE YOUR BOOKER?

ARE YOUR BOOKER

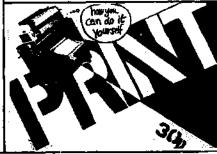
remember costs and method used depend on:

- the size of print
- number of copies
- one side or two
- number of colours
- type of image
- photographs
- reductions or enlargements
- type of paper

1000 leaflets cost about £5



1000 books with 50 pages cost about £250



by silkscreen (see pages 26 - 30) by offset litho printing (see pages 20 - 25)

by offset litho or stencil duplicating spirit duplicating or photocopying (see pages 12 - 25)

Paper costs keep on rising, since it is the basic material for print, any exact costing is difficult.

### PRINTED

words words

# PRINTED

HEAD lines E

# BY USING THESE

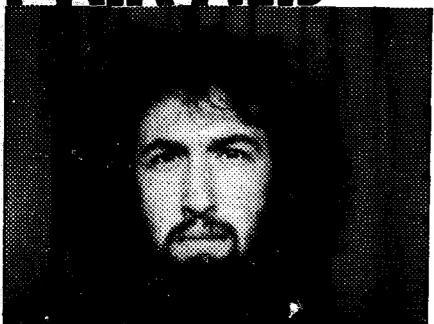
words can by copied by typing them out and using a

spirit duplicator
(for up to 100 copies)
a stencil duplicator
offset litho machine with paper plates
or a photocopier

Headlines can by copied by cutting out, by drawing or transferring and then sticking everything down as <u>artwork</u>.

Then a <u>stencil</u> is made for the <u>duplicator</u> by scanning or heat copying or for <u>offset litho</u> printing plates are made photographically or for <u>silkscreen</u> printing stencils are hand cut or light cut.

## PRNTED



# PROCESSES

photos are copied by light-made stencils for silkscreen or onto offset litho plates.

In both cases the grey of the photo has to be turned into dots by a special screening process see <u>artwork</u> (section on photos).

# PRINTED

colour is copied by printing with coloured ink. For each colour printed you will need to use a new plate or stencil and change the ink (except for spirit duplicating).

So small areas of colour are often cheaper to do using felt tips, paint or relief printing. Rubber stamps are very useful for this.

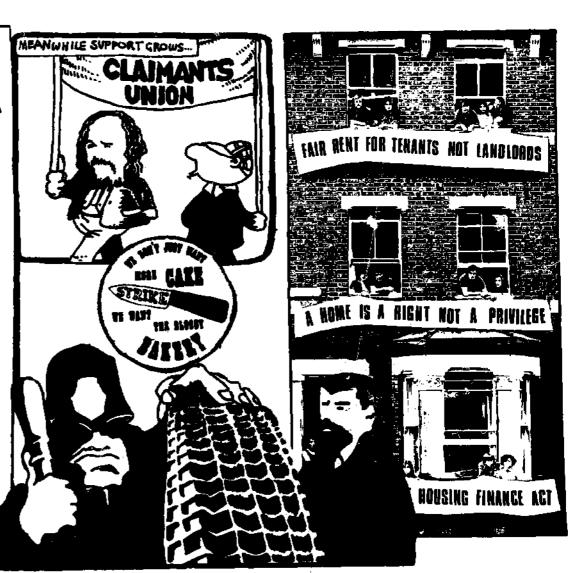
Big areas of image are difficult to copy using a duplicator or small offset litho. Larger printing machines can do this or you can <u>silkscreen</u> print it yourself.

# ANY WAY YOU WANT

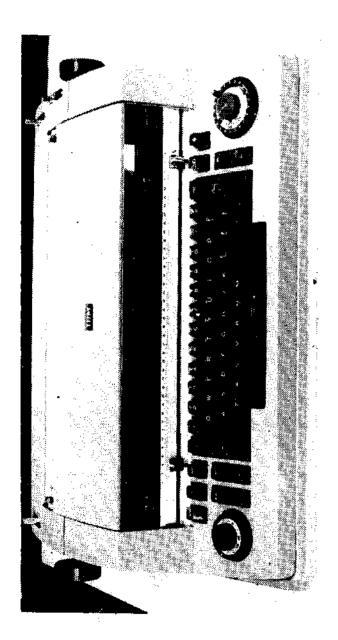
# DANGER



PROPERTY SPECULATORS AT WORK



### typewriters



are the basic tools that turn ideas into standardised visual symbols. The better the typewriter the better and more readable the copies. Most typewriters have letters which are all the same width. So, for example, the M is too thin and the I too wide. To overcome this, electric machines like the IBM Executive uses a 3 unit system so that the width of some letters can be up to three times are large as others: The quick brown fox jumps over Another solution is to abandon using letters on rods by putting them on one piece of metal which moves around when a key is pressed. The Varityper, which uses this method. has a five unit system:

The quick brown fox jumps over The IBM Composer 72 uses a golfball and has an eight unit system. Obviously the eight unit system enables it to have a greater variation in width and make it look more like the conventional type set from metal (letterpress) which uses a sixteen unit system. With both the Varytyper and the IBM Composer the actual golfball or letterplate can be removed and replaced, so the different styles of letters can be used:

The quick brown fox jumps over the
The other difficulty of using typewriters
is the quality of the image. An electric
typewriter will produce a more even
pressure and therefore an even image
which can never be made by a manual
typewriter. The fabric ribbon of a
manual typewriter does not give the
clean sharp letter a carbon ribbon on an
electric machine gives. If you only have
a manual typewriter you may be able to
put in a carbon ribbon attachment, otherwise try taking out the fabric ribbon and
typing directly on to the back of a new



carbon paper instead. If you have to use a fabric ribbon get a new one and clean the letters. When doing any typing that is going to be used for artwork or paper plates it is important to see that the letters of your typewriter are clean.

Typing is so basic that everyone can and should learn to do it.

If you want your work to look better than normal typing you can go to a commercial typesetter or printer who will have an IEM Composer. This can be expensive and if you have a lot to do it is possible to lease a Composer at £40 to £90 per month.

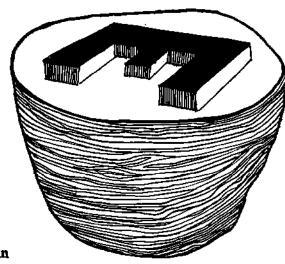
If you want letters of an unusual design or high quality, typesetting companies will typeset the letters in metal – ie letterpress – from which a print can be taken.

But the big litho printers are now using photographic film-setting machines. These vary from computer operated systems to quite simple 'headliners' rather like a normal photographic enlarger.

On the whole, typesetting is too expensive and the advantages too marginal to be useful. Letraset (dry transfer letters) and 'Composers' can do everything that is reasonably required.

# 

# 131\_0CK

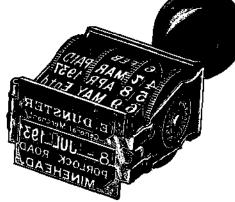


In relief printing an impression is taken of the raised part of a block or letter. The potatocut is the simplest example.

Ink is evenly spread on the raised image by a roller or pad and the block pressed against the paper. Sometimes a lot of pressure is needed to give a good print. You can apply pressure with your foot or by rubbing with a spoon but the most effective form of pressure is, of course, a press.

The print from a relief block or letter will naturally be reversed on the block itself. You can cut a block by hand from potato, wood, lino, or rubber. Balsa wood is one of the easiest to cut but rubber is one of the best to print with. (Conveyor belt rubber is supposed to be the best).

Rubber stamp inking pads and the stamp handle are useful for getting good prints from relief blocks. The difficulty of getting even pressure over large areas means that the size you can print clearly is limited; the maximum is around 3 x 3 inches.



The commercially made rubber stamp should not be forgotten. These can be made photographically. They do not cost that much, about £6; they can contain both words and images. Stamps are a good way of doing letterheads, title or emphasising a part of the image. They are also useful for small bits of colour; and this can brighten up normal duplication. It is a cheap way of adding colour. but you need plenty of willing hands.



This is a good example of how the very cliché of bureaucracy can become a useful tool. The basic development in printing was the use of standard metal blocks for each letter in the alphabet - this is called letterpress.

a few pounds and can be used

for many different purposes.

A set usually contains only

one sort and size of letters.

But it is worth having if only

for a last minute completion

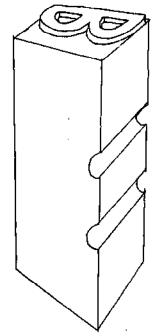
or a 'stop press' announcement.

# LETTERPRESS

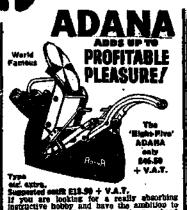


John Bull

Letterpress is the traditional way of printing and is still used in various forms by almost half the industry. Expensive and difficult to set up, it puts a greater distance between printer and customer than litho printing.



The printer uses metal letters (type) which are assembled, clamped together and then placed in the press. In Fleet Street the process is automated but still uses the basic relief principles.

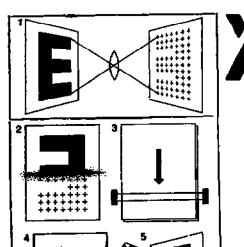


Suggested easth E12.59 + V.A.7.
If you are looking for a really absorbing instructive holby and have the ambition to earn extre CASH, then start to so shead NOW — by PRINTING at home with as ADAMA! Your customers are all round you waiting for the type of priming jobs the ADAMA can produce. They are real artisting machines using standard grinters' type and surming out diret-class-work.

Write, call or phone 01.892 3855 for full first call of phone 01.892 3855 for full FREE Sats, 510 4 p.m. (E.C. Tues.). London closed 12.30 Sats.

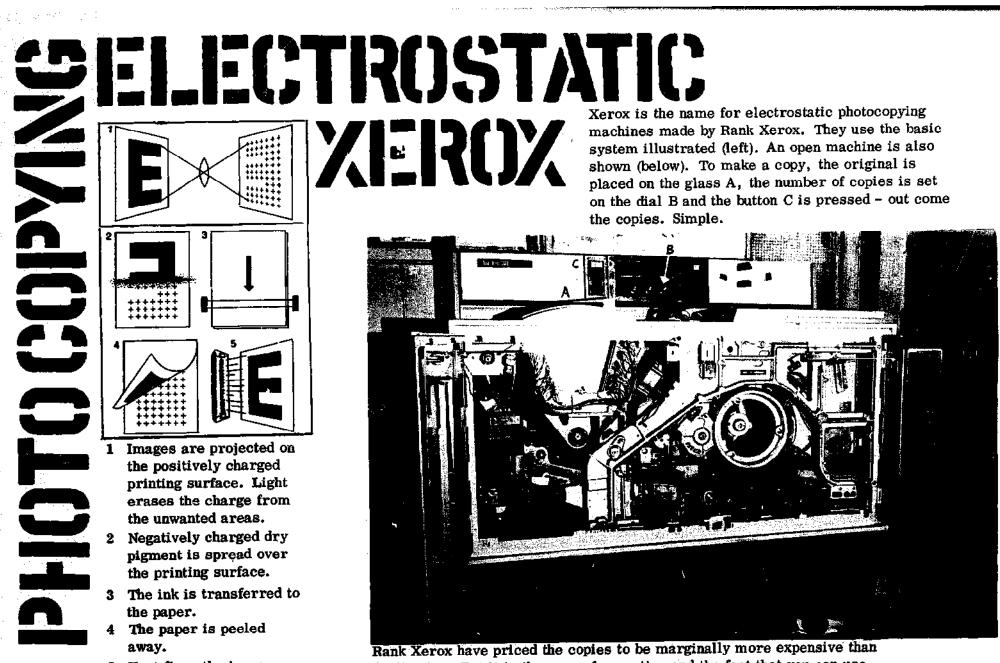
ADAMA (Printing Machines) Ats. (EMA3), 15/18 Church Sarat, Twickenham, Middx. Head Office and Mass Shownoons London Branch; 8 Grays im Road, W.C.1

It is possible though to buy very small presses made by 'Adana' with a small amount of type. With this you could print your own visiting cards. tickets, letterheads, stickers etc. Adanas are cheap (about £30 secondhand) but type does cost quite a bit and you will need several different sizes and styles of letters. This hand method does take time but it can all be done in the front room. Adapas have a good instruction book which they sell with their machines.



- 4 The paper is peeled away.
- 5 Heat fixes the image on the sheet.

Xerox is the name for electrostatic photocopying machines made by Rank Xerox. They use the basic system illustrated (left). An open machine is also shown (below). To make a copy, the original is placed on the glass A, the number of copies is set on the dial B and the button C is pressed - out come the copies. Simple.



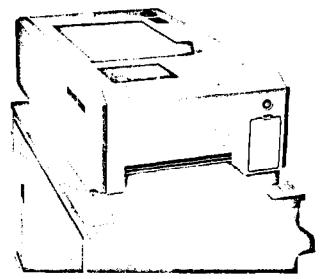
Rank Xerox have priced the copies to be marginally more expensive than duplicating. But it is the ease of operation and the fact that you can use good quality paper that make it an attractive alternative despite its high price.

Electrostatic photocopying is being improved all the time. Copies are now costing less though the copier is still expensive to buy and most are leased. It isn't that difficult to get a machine and make it pay if a large number of people are going to use it. For small numbers of copies the cost is about the same as stencil duplicating but is far quicker.

Rank Xerox charge for the 3600 copier: the basic monthly rental is £16 and then there are three rates of metered copy charge: 1 - 5 copies of one original 1.85p. 6 - 24 copies 0.39p. 25 and subsequent prints 0.25p. Then there are minimum copy charges for each machine of £94 per month, plus the cost of the paper. Smaller machines are approximately the same price, except for large numbers of copies where they are more expensive. They are also much slower, but the rental and minimum copy charges are less. There are even machines which reduce the size of the images, so you can get more onto a page. Inter-Action calculates photocopying on a 3600 machine including paper at the following:

	χεγογ	stencil duplicating
5	15	35
ΙO	185	37
15	22	39
20	25 <sup>k</sup> 2	41
25	2.9	43
50	314	45
40	36/2	. 49
50	41/2	63
(00	662	7/
150	915	91
200	\$ 1-06/2	# 1-10
250	\$1-312	£ 1-30
300	£1-564	£ 1-49
400	£ 2-062	
500	\$ 2-56	€ 2-27
	all costs here exclude VAT	costs using a 32p Stencil (for a conta





Some machines can copy on any sort of paper (so long as it is flat and square). But the zinc oxide copiers use a special coated paper. They are cheaper and smaller machines but it is more expensive per copy. They also give better and larger areas of black than most other machines.

The quality of copying varies from machine to machine but most have difficulty copying solid areas of image bigger than a half inch square.

The electrostatic machines are, in particular not much good for anything over a one sixteenth inch square.

But by copying solids and photos through a sheet of acetate with white dots on it, the quality is improved. These white dot screens are usually supplied with the copier.

Some of the better photocopiers are used as well for platemakers for photo offset litho printing.

The resources of copier, typewriter, duplicator are too often seen as office tools and are not made available for all the different uses that the machines are appropriate for and for which there is a need outside the office, and in the local community.

13

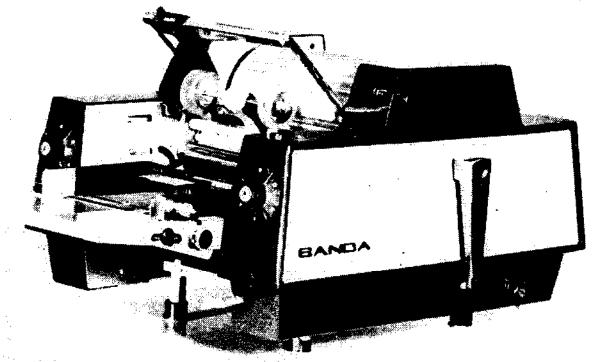
Spirit duplicators make copies by using a system based on alcohol-soluble dyes. The dye is transferred to a master sheet by typing or drawing or heatcopier and then dissolved, a bit at a time, onto each sheet of paper that it feeds through the machine. As the sheet of paper enters the machine it is dampened with methylated spirits. This dissolves the dye, transferring the image from the master to the paper. The spirit dries out

quickly leaving the image on the sheet of paper. Spirit duplicators can only make a limited number of copies from any one master. The ink becomes completely dissolved after around 100 copies. The spirit system requires paper that has a shiny surface, and is not too absorbent. If it is, the paper takes up too much dye and spirit, producing fewer copies and making the image spread and become unreadable. The master is put on the roller, dye-side up and the spirit pumps up as the paper is fed through the machine.

You can buy A3 or A4 machines but as the machines are geared to business accounting and school use, A4 machines are more common and considerably cheaper. The A3 machines are are used for system printing. But if you can get your hands on one, try to use it with as many colours as you can.

### hand made masters

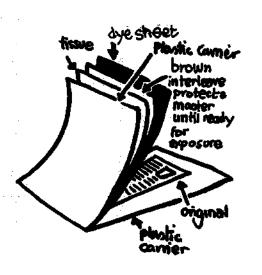
The master is made by typing or drawing on the back of a shiny piece of paper. A sheet of dye (like a carbon paper) is on the other side. So the pressure of the pen or typewriter transfers the image, in dye. onto the shiny side of the master. The master can be made from a choice of seven colours: Purple, Blue, Black, Red. Green, Yellow and Brown. It is a simple process to make part of your print a different colour by changing the dve sheet. The colours are rather strange and some work better than others. Purple is the most effective, turning out more legible copies. The masters can easily be corrected, added to, or have parts of the image removed. and may be stored for re-use.



### heat made masters

Thermo copiers use the carbon in the original image to make a spirit master.

The original is heated with infra red heat and the carbon in the image absorbs it. This then transfers the spirit dyes on to the master sheet and makes a spirit master. The sandwich of master, original and dyesheet are usually fed through the machine like this:



By cutting up different coloured dve sheets and placing them next to parts of the original, multicolour copies are possible from one master. Heat made masters can be run off on any spirit machine just like a hand-made master but have a slightly shorter run. The Thermocopier can make other things as well as spirit masters. By feeding in different materials and different sandwiches normal copies can be made, or stencils for stencil duplicators, or positives for overhead projectors (or silkscreen).

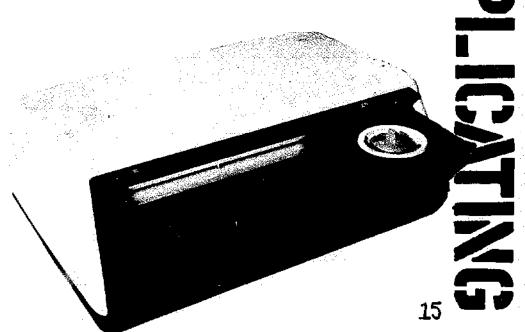
### But

not everything is made of carbon. Black print, some typewriting, electrostatic copies, chinagraph or pencils all have carbon in them and will be copied. Most coloured printing inks, felt tips, ordinary pens, etc do not contain carbon and will not copy. Your original can be made by cutting-up and

sticking down all kinds of (carbon containing) images (see artwork section) and none of the shadows or edges will copy, unlike the photographic methods. But if anything you use is printed on the back it might come out as well. So it can be useful to take an electrostatic copy and then make a master using that instead.

The thermocopier tends to fatten letters and is not good

at detail. But it is quick, easy and useful once you have got used to its limitations. The machine itself is much cheaper than electronic stencil makers (but see section on stencil duplicators). And hopefully it will be developed with spirit duplicating to make it even more useful.



# Partridge, Glebe House Busage, Stroud. Gloucestershire.

A stencil duplicator is a machine for pushing ink through a stencil on to absorbent paper. It includes a system for feeding paper under a drum of ink on to which a stencil is fastened. Roneo and Gestetner duplicators use the same rotary principle but a different mechanical system. It is, therefore, important to use the right sort of ink for the machine.

Old flat bed duplicators are still made. Really they are small silkscreens. More flexible than rotary duplicators they use duplicator stencils as well as silkscreen stencils. They are totally manual machines and the paper has to be taken out by hand. They cost £3.50 from D M

With any of these duplicators the quality of print depends mostly on the quality of the stencil. Follow the instructions and the machine should work properly. It is one of the simplest print machines existing. The stencil is a fabric covered with wax or ink resistant material. To make the image you cut this material but not the fabric. Duplicating can never achieve the quality of blackness or consistency given by offset litho, because the stencil fabric comes between the ink and the paper. Also normal duplicators cannot duplicate large areas of ink because the inked paper would stick to the stencil. But if the duplicator is fitted with strippers that pull the printed paper of the stencil, the amount of ink used can be increased and blacker copies produced.

The ink is slow drying and is absorbed by the special and expensive duplicating paper. You can duplicate on paper of different thicknesses even on card, but it must be absorbent. It therefore tends to show through more than other printing methods: blue ink is the worst for this. If you use normal paper the ink will be wet when the next sheet lands on top of it and will set off (or mark) on to the back of the sheet above. Interleaving sheets or a special spray can be used to stop this happening.

The ink drum can be changed for another with a new colour. Roneos are best for this and have a large choice of different coloured inks.

Most duplicators are A4, but it is still possible to buy a secondhand duplicator that would print A3 size images.

Stencils are sometimes made to fit particular makes of machines but you can get one which fits all of them; alternatively use sticky tape to adapt the stencil.

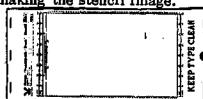
There are two sorts of stencils:

Stencils made by hand with a typewriter or stylus (see next page).



Stencils made with electronic or heat copying machines (see page 18).

Bigger images can be made with 'brush stencils' these work by painting a solution which dissolves the wax thus making the stencil image.



Gestetner make different sorts of stencils to trace through, draw on, type on, use a fat type etc.

Roneo 870

The manufacturers would like everyone to call the process roneoing. Their brand name obscures the fact that it is called stencil duplicating.

### II\_ DUPLICATING =

Controp of letters fall out て 6 **Eupeunter** 

hand cut duplicating stencils can be made

# 



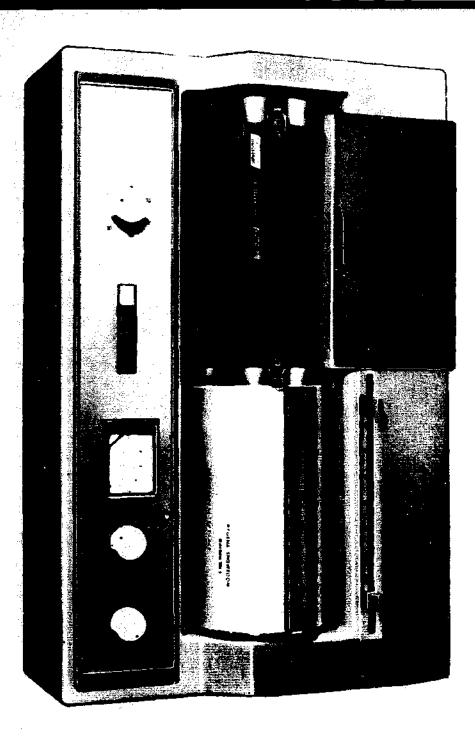
Adverts (like this amended example) oversell their product and promote only limited uses for it.

ISOS HIVE BEEN PRINTED.

You can duplicate your own originals. The machine exists in every office and is waiting to be used.

### HEAT

Heat stencils are made of the same thermo copiers as the heat made masters for spirit duplicating. Although the spirit masters used are of a different material the principle is the same. The problem of using carbon containing originals remains, but the heat does not register any of the shadows or edges of ordinary artwork. These machines are useful and quick but quality is not as good as that produced by a scanner which uses an electronic photocell (see next page). A heat made stencil uses a certain amount more ink than ordinary stencils. Thermocopiers are newer than scanners, there are fewer on the secondhand market, but even if you buy them new they're far cheaper than scanners and cost around £50.



# ELECTRONIC S

electronic stencils

A stencil can be made by a machine (called a scanner) which uses a photo-electric cell, which picks up the difference between black and white on the original.

The photo-cell scans the original (artwork) and the needle cuts tiny holes in the stencil whenever a 'black' is recorded by the cell. Some machines can be adjusted by taking a light reading of both black and white or just varying the sensitivity of the cell. With the electronic stencil you can duplicate on all ordinary duplicating machines. You can copy originals made of Letraset, newspaper cuttings, drawings, typewriter and crude photographs. You can experiment to make the artwork exactly how you want it.

Large areas of black will not come out consistently black though. The quality generally is rather grey and blotchy. It is better than spirit duplicating and blacker than Xerox photocopying. Also you can copy many more things than normal hand cut

stencils. Once the stencil has been cut, the shadows and unwanted images can be painted out with correcting fluid. You can buy different sorts of stencils. plastic or carbon. Plastic ones cost thirty two pence and carbon ones about nine pence. The plastic stencils give much better quality than carbon. By using the Roneotronic scanner the tones of photos can be copied. The scanner and duplicator will never reproduce photos well but if they are scanned through a sheet of acetate with white dots on - the grey will be broken up into larger or smaller dots. Some of the detail can be saved by a bit of touching up as well because scanning produces only black or nothing. It cannot cut half a hole for the grey of photos and other pictures. The Roneotronic scanner also has colour filters to scan coloured photographs and make the three stencils needed to reproduce full coloured copies. Using the Roneo duplicator the changes of colour are simply a matter of changing the drum.

Scanners are often found in office service shops which make stencils for you at around £1 each.

19

DUPLICATING

# S E Rotaprint 30/90

### PLATES

Offset litho printing produces copies from a plate - clamped round the top roller of the press. Plates are made of thin sheets of specially treated metal, plastic or paper. Those parts of the plate that have the image attract a greasy ink. The non-image area is dampened and repels the ink, so that nothing is printed there. As the rollers turn, greasy ink and water (fount solution) are applied simultaneously by small rollers to the plate. In other words, ink sticks to the image but not to the wet non-image area. As the plate turns it meets a rubber roller called the blanket, which takes the image now made of ink. A sheet of paper passes between the blanket and another roller (called the impression cylinder). This receives the ink and prints the right wav round.

The word 'offset' simply refers to the fact that the image is not taken directly from plate to paper but that it is offset from the blanket roller.

The type of plate and the way the image is put on it affects the quality of print. The method you choose depends on what is available and what you can afford. The best (and the most expensive) is to make a presensitized metal plate using a photographic negative. The metal plate made with a chemical transfer platemaker is almost as good but less flexible; you cannot reduce or enlarge an image with this process.

Plastic or paper plastic plates made with photo copying plate-makers may be unreliable when printing the fine dots of (halftone) photos. The cheapest way is to type or draw the image by hand on to paper plates.

### paper plates

Each plate prints one colour: so more colours mean more plates. It is possible to make several plates from one original image or one negative. Block out or cover the bits that you do not want on that plate. Every time you change colour it is necessary to clean off the old ink and ink up the machine anew.

Once on the press a plate can be damaged by too much pressure between the plate and the blanket, or by too much pressure on the plate from the ink roller.

Starving the plate of ink can also cause damage. Plates and chemicals are often marketed by the same companies that make presses. This can provide a good all-in service. but there are often difficulties. The lack of standardisation caused by the competitive system is insanely wasteful.

These are made of paper or half paper, half plastic with a grease sensitive surface. By drawing or typing with a greasy pencil, ink, felt tip, or typewriter ribbon, a mark is made on the plate which will pick up the ink and print that image. Remember fingers are also greasy, so while preparing a paper plate is it important not to touch the sensitive surface.

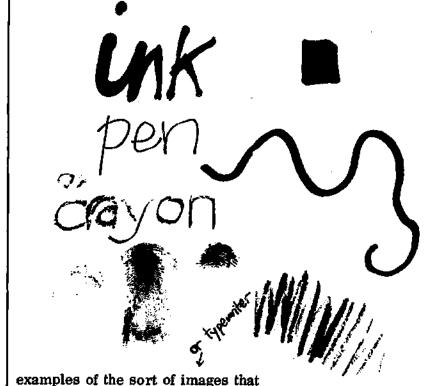
Once the plate has been drawn or typed on, it's lightly wiped with fix, thus desensitizing the rest of the plate. You can then print from it. Paper plates don't always produce particularly good quality work. but they are easy to make and you can draw on them. For people who have the time but not the money or machinery to make better plates, they can be very useful. In the office, time is money, and the real creative possibilities of paper plates are not used.

When paper plates go on the press, it is necessary to apply extra water before inking them because they have a tendency to 'scum' easily. This can rapidly ruin the plate, A little experience is necessary to produce copies with the

can be reproduced on paper plates.

right intensity. Paper plates have quite a short life, around 1,000 copies for some - but can cost as little as 5p each. Once used they are not easily stored and they don't produce a good second run.





### electrostatic plates

Litho plates are more usually made by photographic means. The most rapid of the 'instant' photographic processes is electrostatic photo copying.

Plate-making photocopiers work on the same principle as office copiers. However the plate-making ones produce far better quality and greater detail. They usually copy both large areas of image as well as the small dots and halftones. But they still have limitations.

Electrostatic platemaking copiers vary greatly: from desk top models to large instant printer's cameras.

The desk top platemaking photocopiers make A4 plates and are very much like ordinary copiers. The quality of the image produced is only designed to meet the needs of simple office duplicating. With experience and patience it is possible to find many uses for this sort of platemaker. Use a wide screen to convert the

greys of photos into fairly large dots. This is a means of reproducing photos which look recognisable, if a bit crude.



'Photo Direct' platemaking cameras use the same system, but can reduce or enlarge the copy. They are used by instant printers for great speed and to produce simple work without the fine details of halftone. They are generally better than the desk top copiers though costing around £4,000 new.

Chemical or diffusion transfer made plates are easy to use and produce better quality than electrostatically made

They cannot reduce or enlarge the image, but they can copy fine detail and areas of solid image. The machines are cheap and easily available on the secondhand market. But they use metal plates which cost more than the paper electrostatic ones.

plates.

In the GT platemaker, light is reflected from the artwork. This transfers the image onto an intermediate light sensitive yellow sheet which is used to process the metal plate.

The artwork has to be as flat as possible. Once the plate is made, you can remove the shadows and mistakes with a rubber and cover it with fix before it is printed. The photos or grey images have to be screened (that means converted into black or white dots) and stuck down with the artwork before the plate is made. This screening can be done with a process camera straight onto photographic paper.

The two together - the CT platemaker and the process camera - reducing, enlarging and screening - are a very good combination. Compared to presensitized plates, CT plates are not as good at producing fine images but they are quicker to make.





### presensitized plates

The best way to make offset plates with good photos, or to reduce or enlarge the image, is to use presensitized plates. They print images with all the flexibility and advantages of the photographic process.

Presensitized plates are usually metal. They have the longest life of any litho plates. Including the cost of the film they are quite expensive. Double sided plates save a bit though. It takes quite a lot of time to go through the negative and platemaking stages, but this is often worthwhile, in order to get the result you want.

Presensitized plates are widely used commercially. When your work is printed in this way, the photos that need to be screened should not be stuck down but only marked where they are to go, on the artwork and on the back of the photo.

In making the negative you can exploit all the possibilities of the photographic process.

The negative (the size of the finished print) is made on a process camera. The image can be photographically enlarged or reduced by moving the lens or the artwork.

Screened photos are made by re-photographing with a process camera through a mesh of very fine lines.

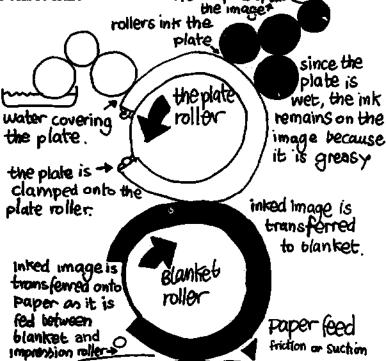
The screen negative is then taped into the space cut in the major negative. The process camera uses a film called line film which only photographs in black and white (and without grey tones) so that it can be printed by offset litho.

Once the screened negatives are taped into the major negative, the unwanted images shadows, dots etc can be deleted out with opaque paint. The plate is then exposed through the negative with ultra-violet light in a 'printing down frame'. Next the plate is developed and gummed; the image appears on the plate, and is ready to print.

# 

The basic arrangement of a small offset litho press:

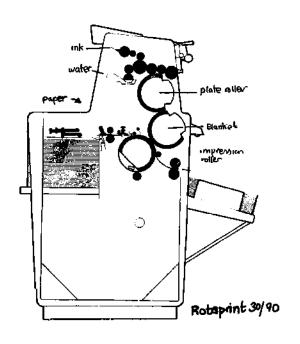
screw to vary ink in different parts of w ink the image



Timprensión

roller

# HOW LITHO



Printing routines vary with each machine so read their operating manuals. Here is a generalised guide:

Mix the ink so that it will drip. Pour it into trough and put some on the ink rollers. Run the machine so that the ink is spread over the rollers. When you are printing tones or big solid areas you will need thinner ink.

printed paper

Mix the fount solution and Spour it into trough or container. Uroller and wash the gum off.

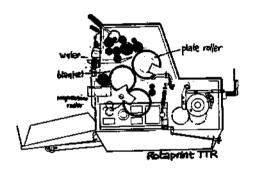
paper

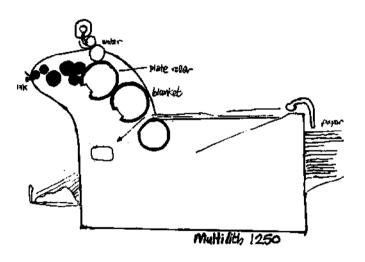
ZPut the plate on the plate

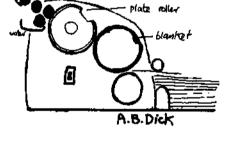
Turn up the water, turn **T**on the press and put the ink and water rollers on to the plate. The image will become inked.

# PRESSES WORK

# 







The paper has to have air between each sheet so that it will be fed singly. 'Knocking up' does this and gets the paper even. This is essential, especially for cheaper paper.

Transfer the image onto the blanket. Test feed some paper and adjust feed and plate so that the image is in the correct place.

Adjust the ink spread by tightening or loosening the screws, so that large image areas have more ink than clear areas.

'Print on'

Once the run is finished clean and gum the plate; clean the blanket. If you have finished with the ink, clean it off the rollers.

### the principle

In silkscreening the image is produced by forcing ink through a fabric (silk). Where the screen is blocked by the stencil no image will print. Only where the stencil is cut open does the ink get through and print the image.

The ink is slow drying so that it won't dry on the screen and block it up. This means you have to hang up each print to dry and work fast. If you leave a screen with ink on it longer than fifteen minutes it will dry in the screen and block up the holes.

Silkscreen is a manual process. Printing, putting paper in. and drying can all be mechanised, but basically your sweat runs the silkscreen. The advantages are many, though, It is easy to do. It can be used to produce big posters with large areas of colour. Although a simple and cheap method, it can be used to produce very good results. However, the runs are limited by space for drying and energy. (To make the screen see the silkscreen page in the print-shop section).

### how to print

Before you put the stencil on the screen, tape round the insides of the frame with brown gumstrip. This keeps the ink in the screen and prevents it getting between the screen and the frame. Usually each stencil is used for one colour. The finished print may involve a number of stencils and printings. You can clean the stencil and put in new ink if you want. Or mix in an extender base - this will ma .e ink translucent: when you overprint this with a second colour, it will produce a third colour resulting from the superimposition of the two colours.

The stencil should be put on the outside of the screen. (See pages 28 and 29 for methods of making stencils). Before you start printing you should organise where you are going to hang up the prints to dry and make sure you have sufficient paper of the right size ready.



Thin the ink to the consistency of single cream. Pour some ink into the hinge end of the screen. Try to mix enough for the whole lot, as it is difficult in the middle of printing to mix some more.

can be home-made but it is important to have a good one. It is better to buy one. Make sure it is the right width for vour screen.

The squeegee is used to push the ink across the screen and back again. When you have done this, pull the screen up and put a new sheet of paper under it. Then take off the printed poster to dry.

Two people are best, one to pull the squeegee and the other to remove and replace the paper. Fine images can be blocked up far more easily by the ink and the screen may have to be cleaned in the middle of printing if the image deteriorates. If part of the image does start clogging, use an aerosol screen wash to clean out that part of the stencil.

### the squeegee

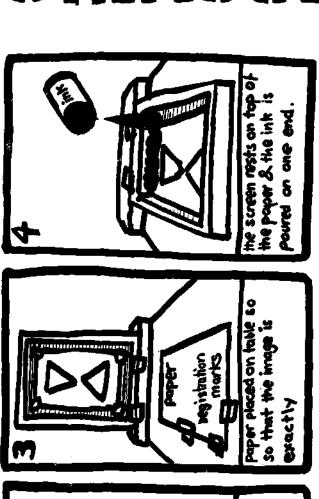


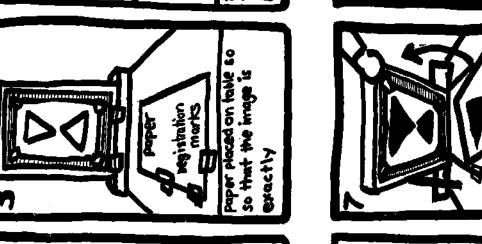


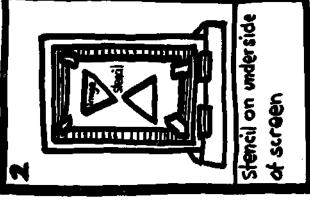
The squeegee is an instrument with a wooden handle and rubber blade for forcing the ink through the screen. This

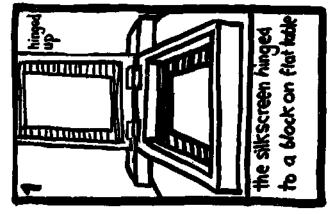
### cleaning

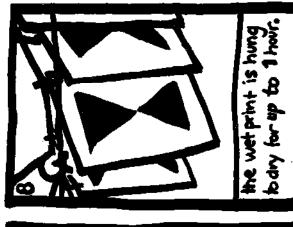
Once you have finished printing, take off the surplus ink with a palette knife. Put a newspaper under the screen and pour on screenwash. Rub with old rags and repeat until the ink is removed and the screen clean again. Look carefully to make sure there is no more ink blocking up the screen holes.

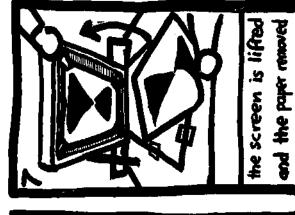


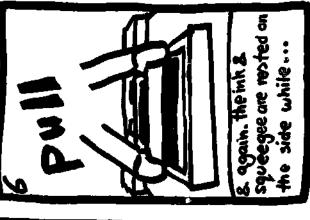


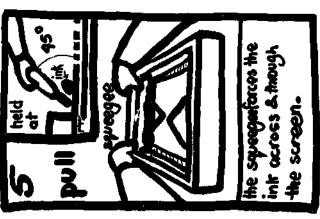












### paper-cut stencils

Stencils can be very simple.

They can be cut out of paper (newsprint) and stuck to the screen initially with tape. As you start printing the ink itself holds the paper stencil flat to the screen.

This sort of stencil is very useful for bold areas of colour. But it is difficult to cut out small images by hand. Also paper stencils do not last very long. But the biggest difficulty is with the centres of shapes: the centre of the 'O' will fall out unless it is attached to the rest of the stencil by a thin strip (see below).

# STENCILS

### stencil film stencils

To overcome the limitations. of paper-cut stencils. several different stencils made from film. such as Autocut and Stemplex, have been developed. All of these are double layered so that when the stencil is cut from the top layer, the centres will stay where they are, attached to the backing film, and this must not be cut. The stencil is fastened to the screen and the backing sheet peeled off. Different films have different ways of being fastened onto the screen: Autocut is dampened on and Stemplex ironed on.

Stencil film can be cut a bit better than paper and will be able to reproduce greater detail for longer printing. For cutting use a fine scalpel (as sharp as possible).

### filler

Stencils can be made by painting a screen filler into the screen, blocking it where an image is not required. This is fairly easy to do and quite quick, though time has to be allowed for the filler to dry.

This can also be done in reverse in the following way. Using wax or litho ink, an image can be painted on to the screen and filler spread over it. The filler will block all the screen apart from the image drawn in the oily ink, or wax. Once the filler is dry, the ink or wax can be dissolved out and the image is clear to print.

Experiment with different stencils and overprinting. You can do a lot with more than one stencil. It is worth spending a bit of time to learn to silkscreen properly and enjoy it.

### duplicator stencils

A quicker way of cutting a fairly fine stencil is by using a scanner which makes stencils for duplicating. But for silkscreening the images should be larger than typewriter letters. The image can be almost anything. A headline from a newspaper, for example, can be scanned and then silkscreened using whatever colour you wish to mix. Plastic stencils curl and react with turps but the carbon stencil works well. Tape it to the screen and take a print. The ink itself should be enough to hold the stencil on to the screen (but it has to be flat).

An ordinary typewriter cut stencil is in fact better than the scanned stencil as it is sharply cut. Though the image will sometimes fatten and blur depending on how thick the ink is. Thermo-cut stencils can also be used.

### light-cut stencils

Stencils can be cut by light. A light sensitive stencil film is exposed to Ultra Violet light through a film positive. Where the image is opaque, the light will be blocked. The light will only affect the areas that are not to be printed. This hardens the film and enables the image alone to be washed out. With Autostar, this is done with water.

The stencil is then put on a screen. The stencil sticks to the screen and the backing sheet is removed when it is dry. The stencil is then ready to print.

UV light is quite simple to use. You can build the equipment yourself. Make sure the UV bulbs are the correct distance from the glass where the stencil is placed. Also ensure that the stencil film is tightly pressed against the positive.

handmade the positive sathe liall box Stenalfilm are placed on the glass. the balls take time to warm Up so shutter are built in been taken off to make the exposure. **b**show the two UV bulls exact. inside.

Sunshine also contains UV light. On a sunny day try exposing your stencil, with the positive on top of it, for twenty minutes.

### <u>handmade</u> positives

Opaque positives can be made with opaque paint, ink or Letraset. It is simply a question of letrasetting or painting on bits of acetate or drafting film and then sellotaping them down together. Anything opaque will work. The positive makes a stencil by stopping the UV light reaching the stencil film. With

handmade positives you can make posters of photographic quality and great detail, though it is very difficult to print anything smaller than typewriter size letters.

You can also use red tape (which is opaque to UV light) for cutting out larger areas of image. Handmade positives are much cheaper than positives made from photographic film.

Thermo-copiers make positives from carbon containing originals - like pencil drawings or black printing. These positives are meant for overhead projectors,

but they can be used for making stencils, though the image fattens and is less defined when thermo-copied.

### photographic positives

By using an enlarger, or by contact printing a negative onto a bit of photographic film, a positive can be made - this can be used to make a stencil using UV light.

Line film or 'TP paper' (a film substitute) is used. Line film only registers black or white. This is useful for silkscreening because a hole either is blocked by the stencil or it allows the ink through to print. So to print greys in photos it is necessary to make a screened halftone just as with litho. The screen size of the halftone has to be three times as big as the silkscreen mesh for the image to print properly. A crude Letratone screen can be used (see artwork section on photos). To prevent moiré patterns (interference) both screens have to be parallel.

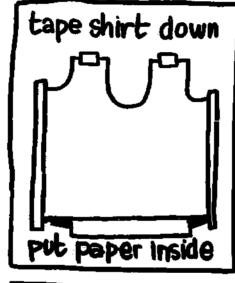
### fabrics

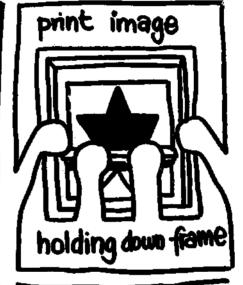
Shirts, fabrics, flags, and banners can all be silkscreened. The only difference when printing on fabric is that dye is used instead of ink and this has to be made fast once the print is dry.

One of the best dyes is 'Helizarin' which is water soluble and is made fast by ironing. You mix one teaspoon of Helizarin colour with one pint of Helizarin binder TS 125.

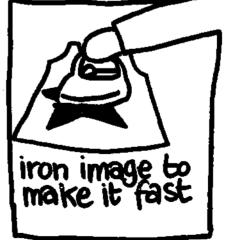
The fabric or shirt has to be taped flat to the table. Stretch it as much as possible so it will not pucker as it is being printed. Put a sheet of paper inside the shirt and cover the parts of the shirt that are not going to be printed on with paper. Print with the silkscreen just like a poster but use more dye. Go over the stencil with the squeegee more often. Hang the shirt or fabric to dry and then iron for 10 minutes, so it won't wash out. Plain white T-shirts can be bought for around 60 pence each and

binder costs 32 pence per pound. The colour dye costs around 30 pence per ounce. It is not very expensive to make a special shirt, flag or banner for your group.









### artwork

Artwork simply means the original you want printed. You need artwork for every process that is photographic or uses photocopying.

## ROUGHS

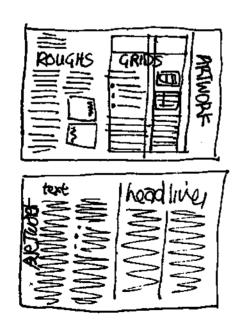
By making a rough you can plan what you want to do before actually committing yourself. It is worth spending some time doing this.

This also gives a degree of collective control. Roughs enable everyone to sit round and discuss what they want, instead of leaving it to the people who lay out the artwork.

Roughs or mock ups or dummies will show you what page will face what page. They also give you a feel of what the finished object will look like.

Roughs can be very simple sketches of the finished thing and should show how much space each element will take. You can see if you need more illustrations or photos, or if the text needs cutting or adding to.

When planning your page remember two things: one, the capability of the printing process you are using and two, the fact that in offset litho you can lay out your page any size you want and reduce or enlarge it photographically for printing.



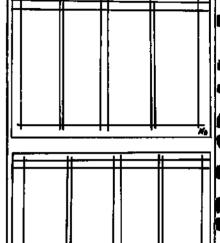
Roughs of this page and the next.

# GRIDS

The lines that mark the boundaries of the image are called the grid. If the text is in columns it marks these as well. You can rule it up once the decisions have been made about:

- size of paper and printed image.
- size of image on artwork.
- size of margins if any.
- whether to trim paper to the edge of the image.
- width of column.

The grid is ruled up in light blue or light green as these colours do not show up when the plate is made photographically. In regular or large scale production, grids are often printed. You can also use a light blue or green crayon for drawing the rough image or making notes on the card before sticking anything down on it.



The grid used for this book.

The grid helps you stick things down straight and in the right places. It provides a degree of consistency between pages which is important for a book. But use the grid as a helpful guide not as a straitjacket. Work out your own grid to suit the material you are printing.

# 

Type the text in the size and column width decided on, then cut it out for sticking it on the grid.

If there are any mistakes the typist ought to cross through the whole line and type it again. When you come to stick down, you can cut that line out with scissors or a knife. Or simply cover the line with the re-typed one.

Professional newspapers have very small text type: the back-room hodgerl and very narrow columns. The quality of their type means they can get more letters into a small length than with this typewriter. It is also more readable at smaller sizes being proportionally spaced and specially designed.

But it is still worth typing in columns of between five to ten words, rather than wider ones, as these are easier to read. It all depends on what you are trying to do and what sort of typewriter von have.

You can reduce type, which means making it look smaller by shrinking it photographically. Typewritten text reduced 20% looks more

like conventional type and that you can put over half as much of it again on your page.

Most ordinary books and newspapers also square off both sides of the column so that each line is the same length (this is called justification). This costs more to do. It is usually unnecessary and one more hangover from the middle ages. The main things to remember are:

Keep within your column width when typing. Correct and re-type mistakes as you go, by typing a new line. Type as evenly as possible. Use a carbon ribbon and an electric typewriter if you can. In newspapers bigger bolder letters with greater space between lines are used to start an article or emphasize or differentiate parts of it: try working out similar techniques - your lead story could be typed on a typewriter with bigger bolder letters for instance.

Remember, you aren't writing or typing an essay. but articles for newspapers or leaflets; think about the length, what illustrations you need and such techniques as dots a stars

# head lines

Headlines or titles assist the reader. They direct people to the articles. They can clarify and extend the idea visually as well as marking the starting place. They should not be too small or forgotten. Small headings for paragraphs (sub-heads) are also useful to break up long articles making them easier to read.

Headlines can be made quite easily. Dry transfer letters -Letraset - can be used but this does cost £1.10 per sheet. (Some other brands are cheaper). They consist of a sheet of letters made of fine black (or white or coloured) film which you transfer to the paper by rubbing down gently with a pencil or ballpoint.

The sheets have quide lines which you can use to get the letters in a straight line, and the gap between letters is judged by eye.

Letraset can be removed with sellotage or just cut out if you make a mistake: be careful with Cow Gum because it will remove Letraset if it spills and is then rubbed off.

Letraset instant lattering

Letraset can be bought in a wide range of styles and sizes (see the free Letraset catalogue) in black or white and some colours. White on black paper is a good contrast and quite useful in newspapers.

Stencils like the titles in the margins of this book, are bits of metal filled in by hand. They are difficult to place evenly but cheap and easy to fill in. You can also graw or trace headlines by hand.

Headlines can be produced photographically. Special machines like the Strip Printer do this simply, but they are expensive and less flexible than your pen or Letraset.

Another easy way of making headlines though is to cut them out of newspapers or any other printed source.

### collage

It is possible to cut out and stick down and reproduce almost anything flat. With scissors and glue you have the possibility of putting together anything that you want.

You can even make collages for scanned stencils, though the fine details will be lost. Use cartoons, headlines, adverts and other bits and pieces that you can collect.

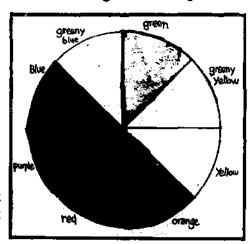
It is convenient to use already screened printed black and white photographs. This saves you the process of screening them to make the grey into black or white dots. They can be stuck straight down into the artwork They will be printed just like typewritten text.

Visual and expressive collage ideas can be used all over your artwork. It is possible to reproduce evidence for your actions, the letter from the council for example, alongside your own comments and photos.

colour

The colour of the print depends upon the ink in the printing press not the colour of the artwork.

The best colour for artwork is black but red will reproduce as well. Here is the colour circle reproduced in line film to show what would happen to coloured originals when printed.



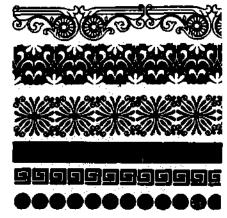
The best way to print more than one colour is to have separate artwork for each colour. Start with the artwork for your main colour on card. Make the artwork for each separate colour on a sheet of tracing paper taped over the card to keep all the artwork in register. Make separate plates with each layer of artwork. For originals of more than one colour.

like colour photos, the separation can be done photographically but this is very expensive. To get full colour, you will need four different colours and plates.

line

Most methods of reproduction can copy lines. Lines are useful in various ways to define sections. <u>Underline</u> and organise your material. Decorative borders can be played with and used sparingly these can be effective. Thick lines

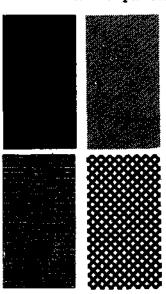
can be made with tape as well as with a ruler. Tape and decorative borders can be bought from Letraset stockists.



But this is expensive. Your pen is much more flexible.

тоде

Tones can be made by using any dry transfer sheet. They are made in various patterns:



Cut out in the shape desired, pull off the backing and stick down. There is a large range of dots, lines and patterns. There are other types which are transferred by pressure. They can give your work texture and quality. Letratone, like all Letraset is expensive but readily available in stationery and art shops.

# 

Drawings, illustrations, cartoons, diagrams, maps can all be included to put over your point. A ruling pen, felt tip or biro can all be used. The artwork will reproduce best by being black and white. Any grey will either go black or white. Also try to use a good pen because, when printed, the uneveness of any lines will show up.

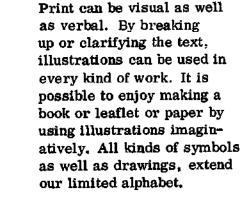
ine drawings can have be used in en have any speak!

Arrows, plans, diagrams can all convey information, in addition to words. It all depends on what you are trying to do. It is possible to trace, copy or draw everything you need. Try it.

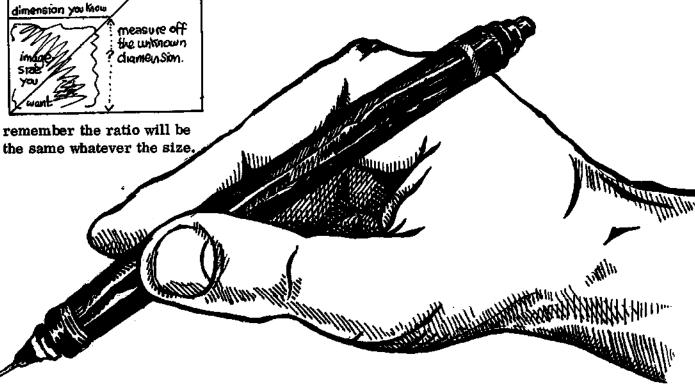
Any piece of the artwork, if it doesn't fit, can be reduced or enlarged photographically to the desired size.

# DRAWNG

To work out the size of the reduced or enlarged finished image draw a diagonal line on the back and scale up or down. Measure off the height and width of the image you want:







# PHOTOS

You can only print from artwork that is black or white, image or non-image. Photos are made of grevs as well. To print grevs you have to turn them into dots

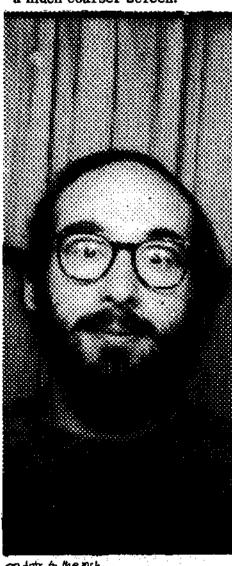


85 data to the inch

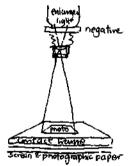
The photo is broken up into black or white dots by a process called screening. This means putting a fine mesh or screen of opaque lines between the film or paper and the projected image. This can be done by an enlarger or process camera.

In crude printing, silkscreen or small offset litho, bigger dots are needed. Usually 80 or 100 dots to the inch are used but the photo will still look alright with 60 to the

inch. If you want a more 'dotted' effect, you can use a much coarser screen.



20 dots to the mich.



To screen photos put a Letratone screen or a contact screen tightly against a piece of photographic light sensitive paper. A contacting frame is best for this. The negative is then placed in the enlarger which is a light source and lens. This projects the negative onto the light sensitive paper. The paper is then exposed to the picture which forms in the holes of the screen in either small dots or big dots. This photo will therefore now be simply comprised of black and white dots. It can be stuck into the artwork and then reproduced by litho. film &

JopreJoyou can
Live the same
finished print.
e, it is possible to
screening on the
Los onto film. The
Locess camera is used
to make the screen negatives
in the same way as an
Thanker. The photo print
The vacuum. The screen usually used is a special fine screen on acetate. Working this way, as most professional printers do, means that your photos should not be stuck in the artwork. If you cannot screen the

photo yourself, it is possible to get screen prints from any printer who has a process camera.

Photos or other bits of artwork can be altered in size photographically (see previous page).



# On and call of the grid the training of the tr

# STICK & CILEAN

Once everything is ready and its position decided, you can start sticking down. Stick everything you want to print onto the grid sheet or onto the card with the hand ruled grid. Card is used so that the artwork isn't damaged in travelling.



It is important to stick down as flat and as cleanly as possible. The best glue to use is Cow gum, or other rubber glues like it. Spread the glue on the front of the card and on the back of the paper then press down. You need only use a thin layer of glue on both and a ruler can be used to spread it just as well as the special spatula. The gum does not dry for some time so that you can remove things and play around with them. When something is crooked and then printed it looks even worse. Lighter fuel dissolves or loosens Cow gum, if you want to take up anything once the gum is dry.

To stick things down permanently, leave the gum ten minutes before pressing down. There are products that do similar jobs, like a waxer (a machine that coats with a temporary wax adhesive) or try using white sellotape. It depends what you are trying to do. Just keep it clean and flat; and you should be alright.

It is important that the artwork is clean. The less unwanted bits there are means less work painting out or rubbing out all the dirt, shadows and mistakes. This means less work in making the plates. So be careful. Rub off all the dry cow gum showing with a cow gum rubber.



A ball of dry Cow Gum acts as a rubber. When rubbing off the Cow Gum be careful with photos printed on newsprint and Letraset because both come off with gum. White paint (process white) applied with a small brush, can be used to reduce the shadows and dirt. Once the artwork is clean, keep it that way by covering with tracing paper.

Once everything is ready, check that the photos are marked where they are to go in the artwork. Write down what you require if you are not involved in the printing yourself. It is very easy to get things wrong. Check the page numbers and read through for mistakes; it is your last chance!

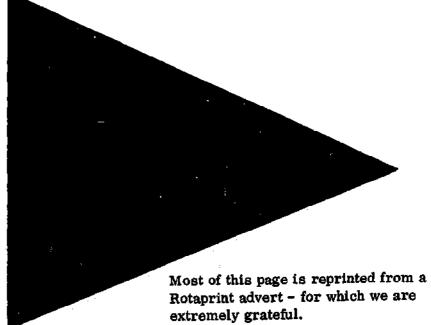
If you are not doing your own printing, ask the printers to check through what you have done. First tell them what you are doing and what you are trying to achieve. And don't forget, it is important to book ahead with many printers, especially community presses.





"My name's Suzy and I'm no mechanic. I'm just the girl in the office—like any office you ever saw. I'm the one they get to work the new Rotaprint. And I think it's great. It's got just this one lever for working it all and there's me, printing—really printing. Pictures and stuff. And colours!

That's what I like best about it. It's so easy, but it does such marvellous print. The old duplicator we had was only good for circulars and just words. Dead boring. And I used to get ink all over me. I'm glad they threw it out and gave me the TTR."



# YOUR PRINTSHOP

Using print should be a creative experience and not just a routine task. Communicating to others and expressing oneself is something that everyone needs to do but our society does not necessarily encourage.

Many people feel inhibited, because they cannot spell, for example, and because they think that only 'educated' people can write. It is a hard job to break these inhibitions down and to convince people that their ideas are not pray worth communicating but that it is not so difficult to do so.

When people learn to print they realise that it is easy to print anything no matter who wrote it. The printer can also be the writer; there is no magic about the printed word. Once people have helped to produce a paper it becomes far less of a mystery. They understand the simple technical process which created it.

The confidence established by seeing your own article, drawing, photo or artwork in print is extremely important. This confidence can begin to counteract the undermining effects of a society in which most people play a passive, silent part.

Making a paper involves writing, laying out and printing your own words and pictures and it can be a collective task. It involves a shared experience as well as sharing ideas.

A community press is an organised way of working towards this ideal. A community press means one which is shared, worked and run by the people who use it.

With your own community press people are freed from the time limits, control and censorship of the commercial printer. It is wrong to think that paying for a commercial job eliminates mistakes. It is also cheaper to do it yourself. Costs can be reduced by a third to a half of the price demanded by commercial printers. Print can therefore become available to many more people. By printing their own material the independence of a group can be strengthened.

	PRICE		No	TOTAL
DUPLICATOR & SCANNER				
Paper Electric Stencils	per 500 imps.	15p		
Running Costs, maintenance	per 500 imps.	30p		
Supply your own paper, ink				
b typing stancils.				
DAPK ROOM			· · · · · · · · · · · · · · · · · · ·	
Process Work:		1	į	
Lith film for metal plates	14" x 19"	50p	ŀ	
(including developer & fix)	47 410	704	i	
Service Charge for use of D. R.	per hour	20p.		<del></del>
You can use the D Room for	per nont			
ordainary photographic work but				
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eupply your own materials & che PRINTING PRESSES Metal Plates for A. B. Dick	em. each	55 p		
PRINTING PRESSES Metal Plates for A. B. Dick for 12/50	en. each each	30p		
eupply your own materials & che PRINTING PRESSES Metal Plates for A. B. Dick for 12/50 Paper Plates 1, rge	each each each	30p 15p		
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PRINTING PRESSES Metal Plates for A. B. Dick for 12/50 Paper Plates large small. Running Costs(inc.ink, clarket wach, fourth conc. etc.)	em.  each each each each per 1600 imps.	30p 15p 10p 40p		
eupply your own materials & che PRINTING PRESSES Meial Plater for A. B. Dick for 12/50 Paper Platen large small Running Gests(inc.ink, olarket wach, fourth conc. ctc.) Ink Goode Utange	each each each each	30p 15p 10p 40p		
PRINTING PRESSES Metal Plates for A. B. Dick for 12/50 Faper Plates things small Running Gests(incink, clarket wach, fourth concctc.) Ink Googr Change Wash Up Change	each each ruth each per 1000 imps.	30p 15p 10p 40p 60p		
PRINTING PRESSES Metal Plater for A. B. Dick for 12/50 Paper Plater b. rge small. Running Gests(inc.ink, olanket wash, Durnain conc. etc.) Ink Go. our Ulange Wash Up Charge Paper A3 (16) × 1(3)	em.  each each each each per 1600 imps.	30p 15p 10p 40p		
PRINTING PRESSES Metal Plate: for A. B. Dick for 12/50 Paper Plate: h.rge small. Running Costs(inc.link, olanket wash, formula conc. etc.) Ink Co. our Change Wash Up Charge Paper A3 (16) x 1(2) If you need anything special.	each each ruth each per 1000 imps.	30p 15p 10p 40p 60p		
PRINTING PRESSES Metal Plater for A. B. Dick for 12/50 Paper Plater b. rge small. Running Gests(inc.ink, olanket wash, Durnain conc. etc.) Ink Go. our Ulange Wash Up Charge Paper A3 (16) × 1(3)	each each ruth each per 1000 imps.	30p 15p 10p 40p 60p		
PRINTING PRESSES Metal Plate: for A. B. Dick for 12/50 Paper Plate: h.rge small. Running Costs(inc.link, olanket wash, formula conc. etc.) Ink Co. our Change Wash Up Charge Paper A3 (16) x 1(2) If you need anything special.	each each ruth each per 1000 imps.	30p 15p 10p 40p 60p		
supply your own materials & che PRINTING PRESSES Meial Plates for A. B. Dick for 12/50 Paper Plates large small. Running Gosts(inc.ink, olasket wach, fourth conc. ctc.) Ink Goour Utange Wash Up Charge Paper A3 (162 x 1121) If you need anything special, supply your own.	each each ruth each per 1000 imps.	30p 15p 10p 40p 60p		

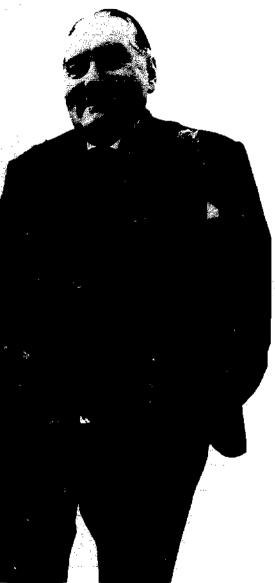
The 12/50 Press: Learning to print on this machine is more complicated. Therefore we don't recommand you to start on this machine. The paper used on this machine is A4 which is half the size of that used on the ABDick (A3)

WASTE PAPER: Please keep paper seperate from any other rubbieh. Tie it up in plastic bags & take it to Ashburton Grove, if possible.

CONTRIBUTIONS: As the press is run at cost price please could you contribute anything you can in the way of money, materials, mending machines etc.

PAYING: Please bring money with you when you come to print so you can pay on the spot, as that is the only way we can keep going.....

# OR THEIRS



The print industry is at present run on profit orientated lines and the client, the designer, the printer and the machine minder are all very separate people. They each have their own special language and jargon. All this makes printing more mysterious and less available to the people who may want it.

Letterpress was the traditional method of printing. It is comparatively a more difficult process than offset litho. Letterpress has, therefore, left the industry more impenetrable than it technically needs to be when offset litho is used.

So if you cannot gain access to duplicating machines or a community press, or you do not want to do it yourself, having to use a commercial printer can create problems as well as being more expensive.

# using their printshops

Instant printers are the cheapest and easiest to use. They mostly print A4 (this page size) or twice this size (A3). Instant printers work from your original artwork and can reduce or enlarge to a limited extent. They charge extra for almost everything. apart from the single-sided black and white copy on thin white paper. They use plastic plates that don't print photos well; and usually they cannot screen photos well so you either have to screen them yourself or have a metal plate made for you, costing almost twice as much and taking twice the time.

Companies with larger printing plant are slower, more expensive, but far more flexible. So for a bigger, more complicated job with photos go to a press that seems sympathetic to your objectives. Dealing with a printer can be difficult if you don't know exactly what you want and need. You must get the following clear:

- 1. Size of paper and printed image.
- 2. Type and image (line or tone).
- 3. Number of copies,

- single or double sided.
- 4. Weight and type of paper.
- 5. Colour of paper and ink.

If you need someone else to do your artwork, typesetting and design, some printers will do this as well. This can double the printing cost and you will lose even more control over your product. It is possible to get a specialist typesetter and layout artist to do the work for you. (A graphics student?) Instant printers today charge a minimum of £3.50 for setting and 20 pence a word for headlines.

Large printers can cut, trim or fold your work. Careful instructions are needed. especially if the printer is going to put your photos in. about the screen, size and position. Don't forget to show which photo goes where. Some printers do not demand payment on collection. Others want notice, so book ahead. But generally it is important to discuss the job with the printer to be sure it is alright. The more you can get a commer- 31 cial printer involved in your work, the better the result will be.

A print shop need not take up very much space. It can be in a back shed or a garage. The size of your print shop depends on the scale you want to produce. A friendly group or community project might be happy to provide space for your press in return for being able to use it.

Otherwise you could try asking your local council; they may have old and nonresidential premises such as shops that are due to be demolished in a few years which they cannot use. If you see your project as wider than just a printing facility, you will need a larger space, for meeting and discussing, as well as laying out and well as for laying out and printing.

If the council, students union, community centre, youth club, school or any friendly group cannot offer you anything and you cannot afford to rent a basement or back room, you could try squatting. This has been done very successfully. but there are some difficulties.

Squatting is perfectly legal as long as you do not break into premises. The first

problem therefore is to ensure that you are not trespassing; thus incurring the wrath of the law.

The next one is time. You do need to know that you have the premises for over six months. at least, as it could take this long to get started. Another problem is one of general security. Not all squats would provide a secure enough base for precious equipment.

# fund raising

You can spend £50 to £5000 on a printshop. Raising the funds can be very difficult. It is best not to go too far from where you want to set up to raise the money. After all if local people are going to use and be involved in your press. they should pay for it. It is surprising what resources are around. A co-operative might be a good way of organising this. Perhaps local companies might support you and give you and give you equipment (it's worth asking for). Councils and community projects tend

# YOUR PRINTSHOP

to be getting more money for art and community resource type projects.

If you can present your case in acceptable terms and ask to see the right people you might be lucky. Social Services, Arts and Leisure, and the 'Participation' Committees are all worth trying if you have the time. Local and Regional Arts Associations might also help with less strings attached than Councils. Student Unions, schools and trade unions ought to support such projects. Or if they have their own printing facilities, they ought to be persuaded to open them to the public.

There are charitable trusts who might support your project. It is much easier to raise money from trusts if you are registered as a charity or have the outward signs of responsibility, eg a letterhead, treasurer, and bank account. It is also easier if you have already done something or already are in existence as a group.

If you have contracts or letters of intent from other groups to print their work for them, this will demonstrate that there is a demand for a press and make your fundraising easier.

The Community Levy for Alternative Projects (CLAP) is worth applying to for the odd £20. Send a 200 word application to CLAP c/o BIT 146 Great Western Road London W11.

Inter-Action's Advisory Service might be able to help (but not with cash) and is producing handbooks on fundraising and Charitable Status.

But jumble sales and appeals to local people will be amongst the most important ways of raising funds. It will get people interested and help them to feel that the press is theirs. Borrowing to start with and then running your press on a break-even basis is another way.

# running it

Before you start your press you should visit other presses, talk about the running problems and learn as much as you can. It might be possible to stay and learn how they work and how they print. When buying a press it is important to take someone with a good practical knowledge with you; it is no use relying on book knowledge.

It is important to maintain links with other presses. Co-operation is vital. It is cheaper and easier when buying paper to combine with other presses and buy in bulk,

Litho printing can be very complex as it grows in scale. Even if the press is running successfully all kinds of other problems will arise. You will need to know how to register as a company or a charity and how to deal with accountants for example.

But before that stage is reached, some members of the press, at least, should have acquired a good technical knowledge of printing.

A good way to gain experience would be work as a machine minder. Another way to learn is by listening and talking to the press mechanic. Getting to know the local mechanic is very important. Sometimes they are willing to work in their own time after hours. The charges for repairs and spares are very high so it is important to know as much as possible. Cooperation between presses on this level can be useful.

The running costs of the shop such as insurance, maintenance, rent and rates should all be added to the cost of the materials in working out a fair charge.

There are no set formulas for organising a printshop. But remember one person can't do all the work and shouldn't take all the responsibility. It is simple to organise your work in a cooperative way.

# how to get a press

One way is to beg it. Who knows who is feeling guilty or who has an old litho press to give away.

Offices tend to junk equipment far more readily than people. So ask around - people in the scrap trade for example?

Borrowing or HP are other ways.

Buying secondhand is probably the only possibility as new machines cost so much. Reconditioned ones are fairly good. Manufacturers recondition some and give them good guarantees and servicing. Other smaller reconditioners also provide a fairly good service. The manufacturers are very reluctant to handle machines they haven't sold or reconditioned themselves. So be careful. The second hand market is full of all kinds of dealers and repairers. Try to get help and make sure you are not going to

be left with a machine that always breaks down.

Exchange and Mart is a good place to start. The Printing Trade Journal is also good for adverts from dealers and for individual machines. Auctions are good but be sure to see the machine running before you buy it.





# which litho press?

Small offset presses divide into ones that print A4 and A3.

The A4 machines are nearer to duplicators in price and capability. The A4 table-top offset often has too few rollers to print large areas of image or photos well but they are cheap. Once you get to know their limitations good work can be produced.

The A B Dick M 331 is a table top offset duplicator that prints A3. It is the simplest and easiest A3 press to work, producing the same sort of quality as other table-top models.

The way the paper is fed into the press is important. Friction feed (with little wheels) will be less expensive than suction feed. It will not print the image on exactly the same place every time and you will waste more sheets of paper. The A B Dick M 331 and most table top presses are friction fed. They also

have the disadvantage in lacking rollers to even out the ink and print the larger areas of image well.

The Multilith 1250 is probably the best small offset litho press though it is still limited in the inking and it requires more skill to use. Though small, it is not a table top model. It is suction fed, printing an image area slightly larger than A4. Since it is an old machine, there are a lot on the secondhand market. They cost from £200 upwards.

The Multilith 1850 is the A3 version of the 1250, but there are only a few on the scondhand market. If you have the £3300 or so to buy a new machine this is one of the best.

The Rotaprint R30 and R30/90 is also an old machine widely available secondhand. This is probably the cheapest and best buy if you want to print A3. You can pay £600 up-

wards.

The main thing is to decide quite carefully what you need before you buy.

A2 printing is expensive and a bit more more difficult. It is not worth while except as a full-time business. But the way things are going with print technology and the growth of small presses, A2 printing should become more available in the near future.

# platemaking

Running off a good plate once it is made is much easier than actually making a good plate. Paper plates are cheap but the most laborious to make. They're useful, however, so get a box of them with the greasy ink ribbons and fix for use with them.

A CT (or DT) platemaker is the best buy and can be bought from £100 upwards. A UV printing-down frame and a process camera to make negatives, take more time to use but the quality is better. Together they cost £300 plus.

These prices are a rough guide. You may be lucky and get the whole lot cheaper, or you may find that dealers are offering machinery that doesn't really work and needs a lot of repairs.

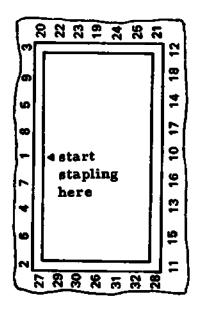
As long as you know what you want to print, and obtain experienced advice, you should be able to set up your own printshop satisfactorily.

You could ignore almost all this advice if you are going to work with a silkscreen. All the equipment can be hand-made. It can all be put away under the sink. It can be set up in the factory lavatory or the front room.

A silkscreen is a wooden frame with one piece of silk, tightly stretched and stapled or glued to it. The frame is hinged to a flat table or board which must be at least six inches bigger than the largest print you want.

The frame needs to be made very level and rigid 2" x 1" timber is usual but the larger the frame the thicker the wood should be. Hinge the frame to the table using hinges with rods that can be taken out so the screen can be lifted off the table. Screw a thin prop on to one side that will swing round so that when the screen is lifted it will support the screen by resting on the table. To cover or re-cover

the screen with silk or organdie cut a piece 4 inches larger than the frame and staple in the following sequence:



Try and get the silk as evenly taught as possible. But remember organdie has a tendency to tear rather suddenly whilst being stretched. Trim and tape the edges of the silk and the screen is made. The inside edges of the screen

should be taped with brown gum tape before using it.
Use more at the ends than the sides to hold the ink between pulls. Silkscreen prints take time to dry since if the ink dried instantly it would dry in the screen and wouldn't get through the screen after this. So your workshop needs to have a well laid out drying arrangement. Best for this is two lines with lots of clothes pegs on them.

# other equipment

A printshop could be used for layout as well. This needs tables, space and Cow Gum, pens, scissors, paper, Letraset. These are easy to get if you know someone who works in an office or design studio. Start cultivating those friends!

A dark room for processing film and enlarging photos is also useful and can be quite cheap to equip secondhand. A typewriter, or a typesetter is always useful. You can lease a typesetting composer or buy one. Varytypers are cheaper than IBM and a secondhand composer can be obtained from Ascot Composers, The Old Court House, London Road, Ascot, phone 0990 24725; they cost £400 upwards. You could think about buying a head-liner as well.

A light box is essential for painting out negatives and can be useful for laying out as well. It is a simple box with a light, tracing paper and glass on top. It is easy, to make yourself. And if you put grid paper between the glass and light you can use it to check if your artwork is straight.

A guillotine for trimming or cutting paper is also useful and older manual ones are cheap.

The stapler or saddle stapler is useful if you are going to do books or leaflets. REAL SECTION

The manufacturers of the machine you've got usually provide supplies to go with it: Chemicals, inks, plates, stencils, etc; some even offer Artwork services. But since these companies are in competition these supplies don't fit their competitor's products.

They also try and keep control of what they produce by a series of training courses, customer relations services and maintenance. Operating manuals and the manufacturers mechanics are very useful. The mechanics can cost £4.50 an hour, but this can all be overcome by the users pooling experiences and developing their own understanding about the machine. The book 'Trouble Shooter on the Multilith 1250' by Joseph Sellar is a good example of this sort of approach from the USA. I hope this sort of approach will be developed in community presses, so that more control will be developed by the users for themselves.

This co-operation becomes important because the manufacturers won't touch machines they have not sold or reconditioned themselves. So if you go into the second hand market, be careful. The dealers and reconditioners often can't provide a full repair service for you. If you are going to buy a press get someone who knows to come and have a look.

Many of these addresses are the head offices. Write to them for details of their products, dealers branches or merchants in your area.

The paper trade is very complex. If you want to really get to know it hay or borrow 'Paper Facts & Figures' out six times a year from Northwood Publications 93-99 Goswell Road, EC1 and available at St Brides.

# Offset Litho machines

Addressograph-Multigraph Marylands Avenue, Hemel Hempetead Bortw. 0442 2251

A B Dick Ltd 3 Warple Way, London W3 01 743 8066 Gestetner Duplicators PO Box 23, 210 Euston Road London NW1 01 387 7021 Mig Banda Cowdray Avenue, Colchester, Essex 0206 5191 Ommal Group North Circular Road, London NW10 01 965 8787 Roneo Vickera Roneo House, Landsdown Road Croydon 01 686 4333 Rotagrint Honeypot Lane, London NW9 01 204 3355

### Secondhand Machines

Chilvers Printing Machinery
26 Wolverton Road, Stony Stratford,
Milton Keynes
Stony Stratford 3149
John Barker & Son
464a Fore Street, Edmonton,
London N19
01 803 9020
A R Webb & Son
Yewfield Road, Willesden
London NW10

Secondarid and Reconditioned machines can be bought from the manufacturers but most are bought through the dealers and small reconditioners.

First look at Exchange & Mart where many dealers advertise. It also includes adverts for individual machines which are often good buys. Other printing journals have adverts and some include amouncements of functions where some good machinery can be bought very cheaply. It is important to get help before committing yourself. See the press running. Take someone with printing experience with you. Be careful.

## Offset Litho materials

Agfa Gevaert Ltd Great West Road, Brentford Middlesex Arnold Cook Ltd Pindar Road, Hoddesden, Herts. Gaf (GB) United PO Box 70, Blackfriars Road Colnbrook, Slough, Bucks, 964 4567 Link Paper & Supplies Ltd Sir Thomas Street, Liverpool L1 051 236 5871 Little ohn Graphic Supplies 16-24 Brewery Road, London N7 Howson-Algraphy Ring Road, Seacroft, Leeds (the sexist Marks & Spencers of the business) Ozilinde Langston Road, Loughton, Essex British Eldesco Ltd The Bowling Centre, 54 Burham Lane Slough, Bucks. 75 23073 Coates Brothers Inks Easton Street, London WC1 01 837 2810 D B Reproductions 41 Barkston House, Leeds 11 Dupont Hawlsden Road, St Neote, Hunts. Litho Supplies (branches all over the country) St Mary's Road, Learnington Spa 3 M (UK) Ltd 3 M House, Wigmore Street London Wi 01 486 5522 Croda Inks Ltd 170 Glasgow Road, Edinburgh 031 334 3221 Ricas Ltd 369 Horn Lane, London W3 01 992 6572

### <u>Duplicators</u>

D M Partridge Glebe House, Stroud, Gloe. Brimscombe 3316 (Flat bed duplicators)

British Olivetti 30 Berkeley Square, London W1 Gutteridge Sampson 28 Greville Street, London EC1 01 242 6331 Ofrex Ltd Ofrex House, Stephen Street London W1 01 636 3686 Ronec Ronec House, Landsdown Road Croydon Gestetner Dunlicators PO Box 23, 210 Euston Road London NW1 01 909 3022 Mg Banda Cowdray Avenue, Colchester Essex 0206 5191

### Photocopiers |

Rank Xerox
338 Euston Read, London NW1
01 387 1244
Mitsubishi Corporation
M C Reprographics (UK) Ltd
6 Miles Gray Road, Basildon, Essex
0268 281 121
Nashus Copycat Ltd
12 Grey Coat Place, London SW1
01 799 5496

## Silkscreen

Auto Type Co Ltd
The Narcross Group
Brownlow Road, London W13
01 567 8861
Richardson Printing Ink
19/23 Egginton Street, Hull, Yorks.
Sericol Group
24 Parsons Green Lane, London SW6
01 736 8181
Brice Commercial Chemicals
55/57 Glengall Road, London SE15
E T Marier
191 Western Road, London SW19
01 640 2211

# Relief

reliber stamp makers

Robert Van Houten Ltd 263/269 City Road, London EC1 Ash Rubber Stamp Co 19 Constitution Hill, Pirmingham 19 Pennett & Co Waterloo Road, Carbridge Stoke on Treat, Staffs. 0782 23937 Hirmingham Rubber Stamo & Co Yote Works, Mere Green Road, Sutton Coldifield, Warwick 021 306 4111 Lexicraft Ltd 50 Cleveland Street, Hirkenhead 051 647 928I Prestige Ltd Felstead Road, Southmead, Bristol 0272 696181

# Letterpres

Adam.
15/19 Church Street, Twickenham
61 832 3455
Type and Leitenpress machines can be

bought from Exchange & Mart easily.

Typewritere

London AKI

61 407 3191

IBM (UK) Ltd
359 Chiswtek High Road, London W4
01 995 1441
Varitypers
from Addressograph - Multigraph
Graphic Arts Equipment
11 Aintres Road, Perivale, Greenford
Middlesest
01 997 8863
Ascot Composers Lt.
The Cld Courthouse, London Road
Ascot
Ascot 24724
0 E M
149/154 Borough High Street

Fowler Printing Services
Fotoscript House, Jubilee Close
Townsend Lene, Kingsbury,
London NW9
01 205 2635
To lease an IBM Composer 72 try
Deleaseo, Delray House,
King Edwards Gardens, Acton
London W3
01 992 6874

### Papa

British International Paper 4-5 Grosvenor Place, London SE1 01 928 9282 John Dickinson & Co Appley, Hemel Hempstead, Herts. 0443 2124 East Lancashire Paper Radeliffe, Manchester 26 061 7232284 Reed Paper & Board Spicer-Cowan New Hythe House, Larkfield Maidstone, Kent 0622 7777 Wigning Teaps (paper) Belgrave House Bassing View, Basingstoke 0256 20262 Invereak Paper Clan House 19 Tudor Street, London EC4 01 253 2323 Star Paper Ltd Peniscowies, Blackburn, Lancs. 0254 21521 G F Smith 2 Leather Market, London SE1 Interfoldia 11 Needham Road, London W11 01 229 9617 Many of these addresses are producers who will send you samples, lists of merchants and prices. If you are a school or youth club in London you can buy paper and other supplies through the GLC supplies

depots at quite a discount.

a letter sent by an offset machine reconditioners to their quatomers

Read this letter or it will cost you £1200

Dear Sir.

It is a fact that the only reason for being in business is TO MAKE A PROFIT.

If this is true, we ask ourselves. Why is it we have not got every printer and user in the country asking for our machines.

We sell them for less than half price. They are GUARANTEED and backed with an after sales service carried out by experienced fitters - (All capable of stripping and rebuilding the machine on the customers premises - if necessary.

They are completely stripped, Re-chromed, Re-stova enamelled, all new bearings, new rollers etc. all carried out by one fitter just like being hand made.

They look like new - They print like new.

A SAVING OF E or E per week for one year PROFIT.

WILY IS IT THEN YOU HAVE NOT BEEN IN TOUCH WITH US ???

Rotaprint R30/90... Rebuilt £1/500 Multilith 1250 £650

Rotaprint R30.175 ditto £2.300 Dep Less Than half PRICE

Rotaprint 40/80 ditto £

Yours sincerely, M. W. WEBB & SON,

# 

## Standard International Paper Sizes

The A sizes of paper are standard international paper sizes. AO is one square metre. Each size is in the same proportion. B sizes are for posters C sizes are for envelopes.

A sizes are replacing both traditional British and other types or paper sizes. To allow for trimming SR and R sizes are made 20 and 40mm larger than A sizes.

AI

inches millimetres

SR A1 640 x 900
610 x 860
A1 33 x 23.39 594 x 841

**A2** 

SR A2 R A2 A2 23.39 x 16.54 450 x 640 430 x 610 420 x 594

A3

16. 54 x 11. 69

297 x 420

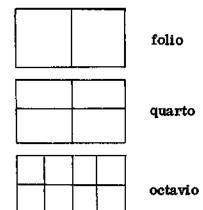
14

11.69 x 8.27

210 x 297

Traditional British
Paper Sizes (in inches)

Crown 15 x 20 Double Crown 20 x 30 Quad Crown 30 x 40 Demy  $17\frac{1}{2} \times 22\frac{1}{2}$ Small Demy  $15\frac{1}{2} \times 20$ Double Demy  $22\frac{1}{2} \times 35$ Quad Demy 35 x 45 Foolscap  $13\frac{1}{2} \times 17$ Small Foolscap  $13\frac{1}{4} \times 16\frac{1}{2}$ Double Foolscap 17 x 27 Quad Foolscap 27 x 34 Imperial 22 x 30 Medium  $18 \times 23$ Double Medium  $23 \times 36$ Post  $15\frac{1}{4} \times 19$ Large Post  $16\frac{1}{2} \times 21$ Double Large Post 21 x 33 Royal 20 x 25 Double Royal 25 x 40



Paper is the basic material for print and is increasingly expensive. Made in infinite different qualities as well as sizes, to choose the right sort of paper and colour can be difficult.

For stencil duplicating you need special absorbent paper but for offset litho you can print on almost any sort of paper. Most printers stock up and have a standard size, quality, colour range. But other sorts of paper can be ordered. The papermakers all produce samples from which you can order. But if you are asking a printer to do it for you. do ask them what they recommend. Paper thickness is measured by weight (grams per square metre - gsm). If you print on both sides this thickness is vital, if it is too think the print on the other side will show through. Between 85 gsm (this paper thickness) and 71 gsm is probably alright. But it depends on the inking and the

sort of paper. Some thinner papers have a conting that makes them have less show through than uncoated paper. You buy paper in reams (500) and it is cheaper in sizes over A2. A guillotine is useful for cutting up and trimming paper. R and S sizes are respectively half inch and 1 inch over A sizes. So you can print right to the edge and then trim off the rest. Remember this as it can look good when the image goes right to the edge of the page. If you would allow your image to go a quarter inch off the A size trimming it down is simple. The paper is fed through the machine gripped by 5/16th of an inch of one edge. This edge, called the feed edge will not be printed on and you must leave a space for it. It could be trimmed off, or could be part of your margin but it must be remembered. (remember the machine!) This is usually one of the longer edges.

On the machines that print

A3 or A2 it is economic to print more than one page at a time. To work out what fits where on the plate is known as 'imposition'. A dummy can be made and used to clarify where each page goes on the sheet:

7	(J	9	Ω
1	8	7	2

For bookwork this becomes more complicated as the pages are smaller and you put more pages per plate on a sheet.

Printers can do 'print and turn' work which means having one plate containing both sides of the job; haif is printed and is then turned round and over. The other half is printed so that the two sides of the sheet are printed. This technique is used to print A4 leaflets on an A3 printing machine. The sheet is just cut in half when it is printed and there is a double sided leaflet from one plate.

# finishing

Once the thing has been printed there remains the job of gathering it. There are machines and commercial specialists, but essentially it's a labour intensive job and expensive. It is easier and cheaper to do it yourself. But such routine work is boring and needs a lot of hands.

Binding can also be done at the same time. Stapling is still the cheapest and best method. The new plastic binding systems are getting better and are worth looking at. A saddle stapler is worth getting if you are going to do a lot of folded stapled jobs as it staples up the middle of the fold. Perfect binding, which is how paperback books are made with the pages glued to the spine, can be done by hand as well. This is an expensive way for a short publication but does give a good result. Essentially the book is clamped tight and then glued together.





Aberdeen Peoples Press 10 Rubislaw Den South Aberdeen phone 321 857 321 857 Print A3 Print Workshop 28 Cooke Street, Belfast Print silkscreen and A4 litho Typeside Free Press Workshop 5 Charlotte Square, Newcastle 0632 20403 Print A4 and A3 litho Sheffield Community Press 210 Albert Road, Heely, Sheffield Print 10 x 14 Mosside Press 21a Princess Road, Manchester 16 061 226 7115 Print on a 17 year old R30/90 A3. They do teach people to print for themselves if those people have the commitment to spend a fair amount of time learning. They have 2 full time workers. Millenium 9 Sefton Drive, Liverpool 8 051 733 2635 Typesetters with an IBM Offer to help people starting up as typesetters. Impact Waterloo Buildings Cases Street, Liverpool 2 051 708 0470 See next page Rochdale Alternative Press 230 Spotland Road, Rochdale, Lancs. 0706 44891 Leeds Community Press c/o 47 Queens Road, Leeds 6 Prints A3 Birmingham Community Press 3 Saltley High Street Birmingham 8 Birmingham Arts Lab Towers Street, Birmingham 19 359 4192 Print A4 Saltley Community Development Project 186 St Saviours Road, Saltley Birmingham 8 Print A4

Just Words 69 College Road, Moseley, Birmingham 13 777 1296 Print 10 x 15 Fallingwall Press 79 Richmond Road, Montpelier. Bristol 0272 422116 left publishers, typesetters, Print 10 x 14 Third World First 4 Marston Ferry Road, Oxford 0865 58725 Print A4 Community Media Centre 16 Kingsford Bradville, Milton Keynes. Wolverton 315128 Cokaigne 1 Jesus Terrace, New Square Cambridge 0223 6911 Printing Outfit 2 Gloucester Street, Brighton Prints A3 Manchester Community Transport 2 Poland Street, Manchester 4 Print A4 University of East Anglia Students Union The Plain, Norwich Rve Press 204 Peckham Rye London SE22 01 693 4251 Backyard Press 75 Roman Road, London E2 01 980 9845 Peoples Aid & Action Centre 8 Falcon Road, London SW1 01 228 1558 Malden Road Press Polytantric 60a Maiden Road, London NW5 01 485 7384 Islington Bus Company 6 Manor Gardens, London N7 263 2149 Print A4 and silkscreen

Suburban Press 433 London Road, Croydon 684 3955 Print A4 Community Press 45 Kensington Park Road London W11 North One Press 2 St Pauls Road, London N1 01 226 0580 Print A3 and A4 122/124 Union Place Vassall Road, London SW9 Silkscreen, darkroom and litho Somewhere 14 Patton Street, Colne, Lancs, 02824 6195 Magic Ink Services 22 Dane Road, Margate, Kent Artists Meeting Place 48 Earlham Street, London WC2 Postry Society 21 Earls Court Square, London SW5 01 373 7861 For poets? Hlack Bindery c/o Box A Rising Free 197 Kings Cross Road, Loadon WC1

The Blackie

051 709 5109

063 33 66820

London W9 01 286 1656

Clarion Printers

107 Pilton Street Barnstable, Devon

Paddington Printshop

Prints A4 and silkscreen

a friendly letterpress printer

The Factory, Chippenham Mews

The Great Georges Project Great Georges Street, Liverpool 1 Community Action Shop 13 Victoria Street, Cwmbran, Gwent

Fingerprints 56 Mackintosh Place, Roath Cardiff Silkscreen and trying to get an offset South Brent Community Press c/o 68 Burnley Road, London NW10 6 Towns Community Press c/o Voluntary Service Centre

46 Marsh Street, Hanley

Stoke on Trent

0782 29009

presses in the making

Women in Print 139 Hemingford Road, London NI (women printers was will be starting printing by September 1975. They are especially interested in Womens' projects as well as community action projects) Hope to print litho A3 Radical Artists and Technicians 119/121 Railton Road, Brixton Silkscreen and trying to get offset Inter-Action 14 Talacre Road, London NW5 01 267 1422



# silkscreen

Whatever Next 61 Leonard Street, Hull 20222

silkscreen Chippenham Postera

192 Villiers Road, London NW10 01 459 5289

gilkscreen

Centerprise Silkscreen 81 Lenthall Road, London E8 01 254 1620 See Red Posters

30 Camden Road, London NW5 phone Pru 01 267 2309

Granby Poster Workshop 14 Beakonsfield Street, Liverpool 8

Some technical colleges and art schools now run courses in small offset and printing. Both Camberwell and Watford do. Perhaps if the demand is greater more would open their facilities to the public and provide evening courses in this useful subject. The manufacturers do give a course when you buy their machine from them, but most people pick it up by doing it. Few seem to think that these courses are worth going on.

larger commercial printers

SW Litho
Corbridge Works
Corbridge Crescent
London E2
01 739 1878

John Bellers Ltd 107 Highgate Road London NW5 01 267 3870

War on Want 467 Caledonian Road London N1

01 609 0211

Vineyard Press 64 Vineyard Street Colchester Colchester 71341

Russell Press 45 Gamble Street Forest Road West Nottingham 0602 74504

Graham Andrews
39 Underwood Road
Reading
0734 58804
Prints A2 web offset good
for newspapers

Expression Printers Ltd 5 Kingsbury Road London N1 254 0073 Prints A2 and this book The Mammoth Press 2 Carocos Street London W6 01994 8944 Prints A3

typesetters

Marigold Enterprises

1 Exchange, Honley
nr Huddersfield, Yorks
Bread'n Roses

16 St Leonards Road
Surbiton, Surrey
Race Today

184 Kings Cross Road
London WC1

0\* 837 0041

North One Press

'You might have used this press when it was a community press at 11 Hemingford Road, or you might not have heard of us but would be interested in the printing facilities.

We have two printing presses one does newspaper size, and
the other does leaflet size. They
are both simple 'offset litho'
where you type, write or draw
your material and it is photographed exactly on to a metal
plate which prints the image on

the paper as it goes through the machine. There is also a duplicator, and an electric scanner, if you want drawings on duplicated leaflets. Finally we have a typewriter, if you really cannot lay your hands on one.

It is not a commercial press. No one makes a profit out of it an there are no labour charges, only the cost of material. We do not do printing for people, we ask them to come and help and learn how to use the equipment themselves especially if they are printing something regularly, like a newspaper.

We see the press as a weapon in a political struggle - we want if to be used by local groups who are pushing for more control over their own lives and situations and who are fighting against the profit system and against bureaucracy. We would like it to be a bit of a meeting place for people who come with other things to print.

On the other hand we are not a Council-sponsored 'project' aimed at do-gooding and participation - which means participating in a way which the Council controls us and keeps us down! The sort of things that really need printing are squatters' posters and handbooks, community papers, stuff for black groups, for school kids and for women and men fighting in the work place (particularly where they are not in the union or have been sold out by their union).

If you have anything to print for your own struggles come to our press meetings on Wednesdays at 6,00pm.

On account of the way we run the press, we seem to be in permanent financial difficulties. Any contributions and money or typewriter ribbons or paper, ink or stencils will not be thrown back in your face.

trol over their own lives and situations and who are fighting against the profit system and against bureaucracy. We would it's been sitting in a leaky greenhouse in Chiswick for the last 5 years.

place for people who come with books, magazines here's your chance to get in other things to print.

On the other hand we are not

Contact the start. Printers with offset-litho experience specially welcome plus anyone who can handle a spanner, a wire brush and a tin of rust remover and wants to learn about print.

Send your offers of help to Denmis Marriner c/o AMP. Platemakers, graphics cameras, guillotines, binding machines, spares for Multilith 2066, wire brushes and tins of PLUS-GAS to the same address please.

Waterloo Buildings, Cases Street, Liverpool 1. Telephone 051-708 0470

The idea of a print-shop grew from the world of community newspapers. With the price of paper and the cost of printing rising so fast by the end of 1973, community papers were finding it hard to make ends meet. So several workers on a Liverpool community newspaper decided to tackle their own typesetting and printing on top of the layout they always did. With a loan of £15,000 from a local trust, Impact was set up in April 1974.

Other aims were included in the project apart from the first idea ofjust producing the one paper. For instance, to prove that in any community there is talent enough to meet the 'professionals' on their own ground. A small printing business has been set up and is competing in the commercial world. Community groups can prove that they can do more than shout while at the same time they open up opportunities for local employment. Impact aims to use a mixture of amateur and professional workers to run a successful business from whose 'profits' a community-based printing resource centre can emerge

So, another idea 'spins off' the setting up of a printshop. Once the equipment and knowledge are there, newcomers to printing, people interested in learning the tecniques of communication can come and pick up those tecniques in a very practical way using equipment in the centre of Liverpool. With this experience they could then go away and begin printing by themselves. Given hard work, there is no 'mystique' of journalism, printing or even running a small business that community and other small groups cannot penetrate.

Using a new IBM Compositor and Multilith 1250 a large variety of jobs can be tackled competitively and the capital loan can be paid back over a few years. Platemaking is the next step which, with time, can be taken. Already, after 8 months, a lot has been learnt: how to attract advertising and printing work; how fierce the small-scale printing world really is; the problems of learning a business-like approach—calculating finances and costings, providing a quick and accurate service etc. But it is the pressure of the commercial work that desforce impact to try and reach a higher standard quickly. Sympathetic groups have shown themselves very helpful in providing work and showing some tolerance of beginners.

# **B00KS**

Drinting it /Cliffond Dunles

	Printing it/Clifford Burke
	(Wingbow Press)
	Modern Office Copying/
e	S B Page (Deutsch)
i	Into Print: A Guide to Non-
ļ	Commercial Newspapers
	and Magazines (Teach Yourself
	Books)
	Graphics Handbook/Ken Garland
	(Studio Vista)
	Trouble Shooter for the 1250
	Multilith/Joseph Sellar (out of print)
	Typography: Basic Principles/
	John Lewis (Studio Vista)
	Tools Special: Silkscreen/
1	Peace News
1	Letraset Catalogue (from your
	local stockist)
1	TV Handbook/Scan
1	available from Rising Free
1	New Graphic Design in
Ì	Revolutionary Russia/Szymon
Ì	Bojko (Thames and Hudson)
ı	Ways of Seeing/John Berger
i	(Penguin)
	Women's Consciousness, Man's
1	World/Sheila Rowbotham (Penguin)
	Pedagogy of the Oppressed/
Ì	Paulo Freire (Penguin)
	What is Design: Education &
į	Practice/Norman Potter
	(Studio Vista)

Typographics: Designers Handbook of Printing Techniques/Michael Hutchins (Studio Vista) Screen Printing Technique/ Albert Kosloff (Sericol) Author as Producer/Walter Benjamin (New Left Review 62) Art in the Age of Mechanical Reproduction/Walter Benjamin essay in Illuminations, (Fontana) The Great Experiment, Russian Art between 1863 - 1922/ Camilla Grey (Thames and Hudson) Community Newspapers/John Rety (Inter-Action) Constituents of a Theory of the Media/Hans Marcus Enzberger (an essay in the Sociology of Mass Communication edited by Denis McQuail. Penguin) Leaving the 20th Century, the incomplete work of the Situationist International/ translated and edited by Christopher Gray (Free Fall Publications) and the Trade Journals and Papers all kept at St Brides Printing Library Brides Lane, London EC4



International paper sizes, metric and standard

A B Dick

Makers of offset litho printing machinery

Makers of small letterpress printing machines

Artwork

The original matter from which a reproduction is eventually made

The part of a printed image beyond the area to which the finished print will be cut so assuring that the image will come right to the edge of the paper

International paper sizes especially for posters, between A sizes

A photographic light sensitive paper or print on that paper

Blanket

A rubber covering for a cylinder on the lithe machine which takes the ink image off the plate and on to the paper

C

A RCDEFGHLIKLM NOPORSTUVWXYZ

Chemical Transfer

A method of platemaking using photocopying to transfer the image on to the metal plate

Collating

Putting pages in the right order, gathering

Continuous Tone

An image in which tone or graduation is produced by changes in density

A typewriter that makes proportional spaced letters

The centres of letters a, e, o, p, d, b. q

Cow Gum

A petrol glue that sticks paper flat

Crown, Double

20 x 30 traditional British paper size

Casting Off

A way of calculating with tables the average length of line a type of letter gives

D

17½ x 22½ traditional British paper size

Letters over 1 inch high

Electrostatic

A method of photocopying in which the image is transferred by light electrically charging the paper. The latent image produced attracts ink dust which is fixed by heat

One twelfth inch wide typewriter letter

A chemical covering of film that is light sensitive

Enlarger

A machine like a reversed camera that chines light through a photographic negative so printing the image on to light sensitive paper underneath

Executive

An IBM proportional spacing typewriter

Extender Base

Mixed with ink to make the colour less

F

A paint that blocks part of the silkscreen so forming a stencil

Film Setting

A method of typesetting using a machine with bits of film instead of metal relief letters

A chemical that desensitises offset plates

Foolscap

13 x 17 traditional paper size. Foolscap Folio 8 x 13

Fount Solution

The 'water' solution in an offset press

Golfball

A ball on which letters stand out in relief. Used on the IBM electric typewriter instead of the letters on rods

Grid

A ruled indication of margins and columns for layout

Grip Edge

The quarter inch of paper the press grips to feed the paper into the machine

Grammes per square metre. You use it for measuring the thickness of paper

Arabic gum used to protect litho plates

H

Halftone

Representation of tonal gradation (continuous tone) by an image composed of dots of varied sizes

International Business Machines. makers of composers and proportional spacing typewriters

Imperial

22 x 30 traditional paper size

The arrangements of the printed page on the sheet of paper

Impression Roller

A roller which presses the paper against the blanket

Electrostatic Instant Plate Making Camera

J

John Bull

A make of rubber printing relief letters

Justification

Spacing words so that each line is the same length

ĸ

Knock Up

Making a pile of paper square, so that each sheet is in exactly the same place for feeding into the machine

Landscape

(see Portrait)

Largepost

161 x 21 traditional paper eize

Ledger Paper

Another sort of old paper size

Letraset and Letratone

Make of transfer letters, tones and images

Letterpress

A method of printing using relief letters and picture blocks

A sort of photographic film that makes enything into black or white

Lino Type

A machine for casting letters into lines for letterpress

# abcdefghijklmnopqrstuvwzyz

### Make Ready

The work needed to get a press adjusted before it prints one particular ich

### Medium

18 x 23 traditional paper size

A machine for casting individual letters for letterpress

Interference patterns caused by crossing mesh screens

### Multilith

A trade name for the small offset litho presses made by Addressograph-Multigraph

N

An image usually in film where a black image is turned into clear film and the white background is opaque

0

### Offset.

Where ink image is 'offset' from the plate onto the blanket and then onto the рарег

A substance that will not let light through

A cheap substitute for nylon or silk to be used on a silkscreen

### Paste-up Artwork

# Perfector

A press that prints on both sides of a page in one pass-through

Perfect Binding A glued binding

### Photocopy

Ways of copying images using various semi-photographic means

Portrait

(see Landscape)

### Plate

A paper, plastic or metal sheet on which a chemical image is made from which an image is printed by offset litho

Standard 10 to the inch typewriter letter

The Reverse of a negative

### Print and Turn

A method used when printing where both sides of the sheet are printed from one plate. Done by printing half, turning the paper upside down and around and then printing the other half

### **Process Camera**

The camera that makes negatives or bromides the size you want to print

A pre-production print made to check that the print is as it should be and is ready to be run off

### Proportional Spacing

Where each letter is of varied width

Q

25 sheets of paper

20mm larger than A1 or A2 and so allowing for trim

Making sure that the image is printed on the correct place on the paper

500 sheets of paper

2.8

Rotaprint

A make of offset press

### Royal

20 x 25 traditional paper size

5

### S sizes

20mm larger than R A1 and R A2 allowing further trim

### Scanners

A photocell machine that electronically scans and cuts stencils

### Screen

The silk mesh on which a stencil is placed and ink pushed through. Or a mesh of fine lines on acetate which makes photos when photographed through the screen, into dots

### Scum

When ink builds up on the non printing area of offset litho plates

### See Through

When you can see too clearly the image on the other side

### Set Off

When ink transfers to the sheet above

A basic method of printing or producing an image. The image is cut out of the solid background and the print is produced by the ink going through the stencil on the paper beneath

T

Sorts of letters under fourteen point (1 inch) used for the text

### Thermo Copying

Copying using the principle of heat being reflected by the carbon in the image only

### Tints or Tones

Various greys made of different dots or screens

TP paper

Line film type emulsion on paper

Cutting the paper so it has no margin or is the right size

### Varityper

A make of typewriter that makes a proportional spaced letter

U

### Ultra Violet

High frequency light used to process pre-sensitised plates and photo stencils

### Web-fed printing

Printing on a reel of paper (a web) rather than a sheet

x

### X Height

The distance from the top of the X to the bottom, a way of measuring the size of a letter

### Xerox

A make of electrostatic photocopying

If you need to know more trade terms get 'Printer's Terms, the technical terms of the printing industry' by Rudolf Hostettler from the library

# A Day in the Life

Meny meetings take place before a paper of our kind gets off the ground. We are all inexperienced at the job. (Though I expect we do some things better than the Government 1)

One Sunday morning up bright and early. Vaiting at the end of my road till my "chauffeur driven Princess Rolls"rolls up. Inside are friends and off we go to sur Printing Press.

I never dreamed so much work was involved. The articles have already been pasted on to art boards.Off come our coats.Artwork set

squarely under a camera. Click. One page ready. The negative gently lifted into developing liquid. It's quite a kick to see the film progress into the fixer and then hanging up to dry.

We get something to eat. It's Sunday and most of the shops are shut.

Then back to the dry negatives. Very carefully carrying the film to a plate. Squarely place under infra red light. After a few seconds we apply gum and a liberal dose of red fixer. Hey Presto the plate ready for the rollers. The rollers in motion out comes the paper. It's quite a feat putting it through streight.

Then off to be folded. A very good day of

Then off to be folded. A very good day of learning.

An unauthentic word, one which is unable to transform reality, results when dichotomy is imposed upon its constituent elements. When a word is deprived of its dimension of action, reflection it automatically suffers as well; and the word is changed into idle chatter, into verbalism, into an alienated and alienating Blah. To exist, humanly, is to name the world, to change it.

Paulo Freire

# PRINTERS PUBLISH THIER OWN PAPER

Nottingham printworkers and journalists in dispute with T Bailey Forman, publishers of the city's two newspapers, are publishing their own newspaper, The Press.

Originally the dispute was triggered off when the management ignored union agreements involving a new printing process and tried to force production workers into using the equipment on its terms.

T Bailey Forman had installed two lettraflex machines and ordered members of SLADE to operate them. When the majority refused they were sent home. Members of the other unions, the NGA and NUJ, then blacked all work on lettraflex process.

When the NUJ chapel failed to get an assurance that their work would not help produce a newspaper printed by blacked members, NUJ and NGA members stopped work on the Guardian Journal.

The workforce set up a joint liaison committee, which reaffirmed the position of all the unions that they would only work according to national agreements.

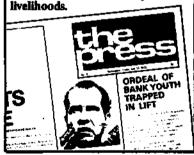
When the management refused to accept this, the unions treated the dispute as a lock-out. A spokesman for the liaison committee commented, 'the catalyst

which brought us all together was the way the director of T Bailey Forman, Christopher Pole-Carew, has dealt with the various unions over the past four to five years. Management forces its views through without proper regard to workers as represented by trade unions.'

The dramatic event which pushed the printers and journalists into producing their own newspaper was the management demand, when the original dispute was settled, that they accept 105 redundancies, the closure of the Guardian Journal, and a promise from the unions that blacklegs who have worked during the dispute will not be disciplined.

A mass meeting of all the workers involved unanimously endorsed the liaison committee's insistence on no redundancies and the right to take action against people who act against the interests of the unions.

They then took the step of publishing The Press, which will appear every other day. They are determined to save their jobs and livelihoods.



That's what I like best about it. It's so rasy, but it does such marvellous print. The old duplicator we had was only goud for circulars and just words. Dead boring. And I used to get this all over me,

54

# MAGES

# heir Daily

**Exclusive** Interlectual 2 Blah

Endless Spectacle > Lives as

Individual we don't live

inside

EUROPE'S BIGGEST DAILY SALE

Morday May 20 1974

No 21 274

PROFESSIO!

World amydiay

HE Professionals are the only people who can make not newspapers, leaflets or books because they know the Golden reles.

Working in very alienated, ways they serve the bases. White on our walkings & pump out the continuous show.

They know what paople are used to 8 they give it to them again in different system. The professionals in fact are able to detage any development in design or art info a new style to self, their bosson lates t products.

The Golden Rule

The Professionals print is made in a spirit of competition. The class capparate made to take the printer to take the apparation of the professional transfer of t

The paper are wade simple & usual so that the stupid unvising class can understand & buy more easily. They use can't get, thou involved in the actual product they are the they are the they are they are they are they give tham games & stoys.

in fact not point has evolved through generations of coofts & majors millions for the bosses.

Dip AD Graphic designer.



The distinguish work is spread over every cheet of possible paper. All the designers Illumined in countlers colleges & art schools A levels & all professionals to the last dot show how much superior & touteful they owe compared to all the untained autworkers. designers, printbyees printers. Designs on the tent deal is after all a common goal.

# its you from across the Street NESIGN Files & pag to: man-type-are to be



# Follow the rules

rideal form of mey time what working people want Designed by the Swill buy. They say those series primes it has never iden allowed to sedeel allowed to sedeel speed. People grow real life, how to sense one erre the brace. working people grow used not to have it. It is written smede for the middle class.

Even on Learning to read the working class is tellogit about people in books (8 people who write 8 coun ) tocks are not like than/

Admit
well you must admit middle clampeople in the professions and trained to articulate. Kinow how to

ME THE express bourselves.

preserve the brance Rget to the Truth! Journalists &

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We are interested in receiving any criticisms experiences and feedback for the next edition.

I would like to thank all the people who helped to put together both the first and this edition.

# Jonathan Zeitlyn

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