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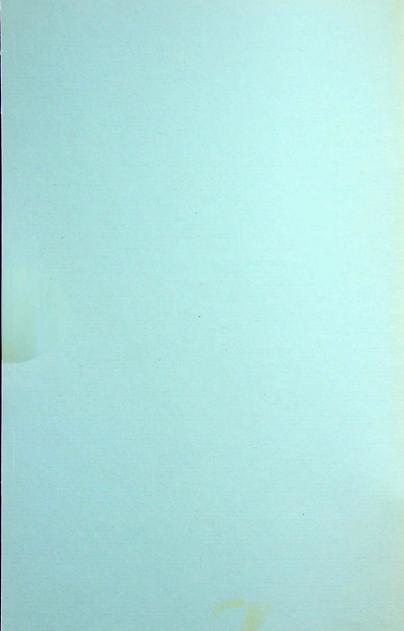
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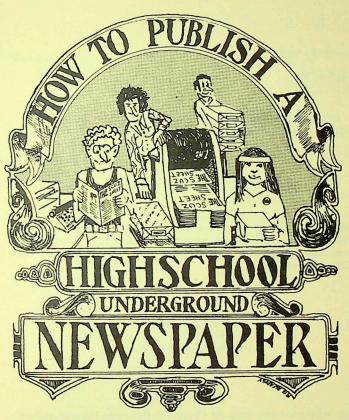
UNDERGROUND

NEWSPAPER

WALEED S. AL FADHLY AND GARY D. SHAPIRO







A CHIPS BOOK BY

## WALEED S. AL-FADHLY AND GARY D. SHAPIRO

WITH ORIGINAL ILLUSTRATIONS BY WALEED S. AL-FADHLY

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This booklet is based on the knowledge and experience we acquired while publishing the *New Improved Tide*, a high school underground at John Marshall High School in Los Angeles, California.

We hereby confess, however, that because our experiences were limited to basically one format, our biases obviously lean toward that format.

In addition to those who helped with the production of this booklet, we would especially like to thank John Schaller of CHIPS and Peter Superata for their technical advice and spiritual counseling. Phis booklet is based on the knowledge and experience we dred while publishing the Max Innvoved Tide, a high school reground at John Marshall High School in Los Angeles.

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# General Carbage



Putting out an underground newspaper is the act of publishing an alternative to the already existing establishment press. In the case of a high school, this would be an alternative to the official school publication. There is only one thing which we cannot emphasize too strongly about starting such a paper, and that is START!

#### STAFF

The most vital element on any paper is a staff. The most vital element on any staff is people. You don't necessarily need editors, artists, proofreaders, financial managers, or typists—just people. People will assume roles as the situation dictates. They will become typists when there is copy to type, distributors when there are papers to distribute, public relations people when there are ads to solicit, and editors when they want to have their own way. You will undoubtedly encounter resident bodies, who will be nothing more than parts of the staff. Generally, the persons who are motivated enough to take interest in the entire paper's workings will assume the roles of editor. This can be one person ("I AM THE EDITOR"), or a "community" of persons ("Let us decide what to do"). People with special talents such as art and printing will naturally perform special functions.

Be sure your staff does not become a closed clique. Always encourage new people to join your staff, especially those in lower grades, as you will eventually graduate or be kicked out.

#### MONEY

Regardless of how much you are opposed to it, every underground newspaper is going to need money, the root of all evil, and the only item most printers and paper dealers will accept in

exchange for their goods and services.

The best source of money, ideally, is your readership. If you are going to try to reach as many people as possible, this source will be limited. Most people are not willing to give money for some "commie rag" that someone shoves in their face. However, you may only be concerned about getting copies to people who are interested enough to blow a nickle or a dime. In that case, assuming you can sell enough copies, you will have a good percentage of your monetary needs fulfilled. In fact, if you sold 500 copies for 10 cents each, you would have enough money right there for a commercially printed eight-page newspaper,  $8\frac{1}{2} \times 11$  inches.

Not all papers are fortunate enough to be entirely reader-sponsored. So, we hereby present the following additional

methods of obtaining money:

The rich uncle method. Talk your rich uncle into donating one hour's worth of his income for a worthy cause. The feasibility of this method is doubtful. Besides, if you depend on such a source, it can disappear along with your paper when the uncle decides he doesn't think it's such a worthy cause after all, or when you leave the paper's staff.

The rich self method. Perhaps you have a lot of spare change lying around. If you are willing to part with it, you have a very reliable source right there. However, this source of income also leaves the paper when you do.

The exploitation method. In other words, simply go into the money-making business, or put somebody else on your staff in it.

For example:

Preheat oven to 375 degrees. Sift together 2½ cups sifted flour, one teaspoon baking soda, one teaspoon salt; set aside. Combine one cup softened butter or shortening, ½ pgranulated sugar, ½ pfirmly-packed brown sugar, one teaspoon vanilla, ½ teaspoon water; beat until creamy. Beat in two eggs. Add flour mixture; mix well. Stir in one 12 ounce package (two cups) chocolate chips, one cup

coarsely-chopped nuts (optional). Drop by well-rounded teaspoonfuls onto greased cookie sheets. Bake at 375 degrees for 10 to 12 minutes.

After you have made the cookies (as small as you can get away with, of course), count out a convenient number (three, for example), put them in a convenient container (wax sandwich bags, for example), and charge a convenient price (10 cents, for example). The New Improved Tide was about 30 percent supported by

The New Improved Tide was about 30 percent supported by chocolate chip cookies, personally manufactured, packaged, and sold by the editors. We made them as small as we could get away with, put groups of three in wax sandwich bags, stapled them shut, and sold them for a dime.

Don't limit yourself to chocolate chip cookies just because we did. After all, you can make oatmeal cookies, sugar cookies, gingerbread cookies...

But seriously, folks, you don't even have to limit yourselves to cookies. Silk-screened posters of one of your more infamous administrators printed with a target superimposed and perhaps sold together with darts, might do well. Fund-raising dinners are sometimes worth the trouble even if they don't turn out to be truly fund raising. Perhaps an artist on your staff will be willing to sell his or her work, and give the paper the money. There are countless ways a paper can make money for itself, almost none of which are very practical or profitable.

More likely than not, your school board has a rule against free enterprise on campus. It is possible to get around such rules. Many administrators wouldn't enforce them anyway unless they knew the money was going for an underground newspaper. To keep your administration from finding out, simply have people they don't

know are connected with the paper sell your wares.

Advertizing. Soliciting and taking advertizements is not necessarily selling your soul to the capitalist establishment, but it can be. If you do decide to take in advertizements, be prepared to drop any advertizer who tries to influence your policy. Be especially wary of potential advertizers who say they'll put in an ad only on certain conditions, such as if you don't have any "dirty" words, etc., in your paper.

Getting ads is not as simple as it sounds. First you should figure out how much it costs you to print each page. Obviously, ads should cost more than that. Charge as much as you think you can get away with. Break this down into smaller amounts: half pages, quarter

pages, column inches, and lines, and set up a rate schedule. It might be helpful to print up a sheet giving these figures along with your paper's circulation, frequency of issue, and whom to get in touch with for advertizing. These sheets could be distributed to potential advertizers. Although we neither condemn nor condone this, underground papers have been known to go to town on circulation figures to encourage ads since these figures can seldom be verified.

An important step in seeking advertizement is to find out how much the official school paper charges for ads. In most cases it will be more than you charge. If your alleged circulation parallels that of the school paper, go to the companies who advertize therein and point out to them that they could reach the same audience for less if they advertized in your paper. Driving schools and business colleges are especially eager to advertize in high school papers. Also be sure to check all the local merchants—shyness is no way to get ads.

Take into account that pre-prepared form ads supplied by advertizers might compromise the general aesthetic quality of your paper. Be sure to charge extra, however, if you design and/or draw an

ad.

You might want to include a classified advertizing section in your paper. This can be both a source of revenue to you and a service to other students. It can provide an inexpensive means of getting rid of old surfboards, cars, and other junk. It might be nice to give special rates to lost and found ads, especially if your school's facilities in this carea are lacking.

It is not wise to depend too much on any one source of revenue. For example, one day you might discover that all of your advertizers

have suddenly dropped their ads. Be prepared to make cookies.

#### POLICY

Every paper will undoubtedly have a policy. This could be anything from a three-page editorial statement to a general understanding among the staff members. Many undergrounds simply have an open forum policy, which means that they will print just about anything they can get their grimey little hands on. Others, being official publications of student unions, etc., will tend to push their own point of view. Some will be combinations or aberrations of the above.

#### LETTERS

If you are fortunate enough to receive letters with any editorial comment, we suggest that you print them, since this stimulates a sense of rapport between the readership and editors of your paper. Unfriendly letters, especially ones rebutting articles previously printed, while possibly discrediting the article, will give credit to your paper. Emotional letters which are biased and unbased, and daring you to print them, are especially juicy. Although we neither condemn nor condone this, papers have been known to write such letters to themselves in especially dry times.

#### EDITING

In the smaller context, editing can be anything from pure censorship to the correction of a misspelled word. It is generally the "preparation" of an article for publication. The New Improved Tide's policy on editing was to correct spelling, punctuation, and grammatical errors, and to confer with the author as to possible revisions involving style of writing and getting the point across.

Your paper will need either a policy or a lack of one on the subject of so-called dirty words. Some papers feel that removing these unsavory specimens is an act of c\*nsorship and therefore will have none. Some will beep out every gosh, darn, heck, and shoot for the fear of offending someone. These papers feel that if a point can be made without using this barnyard verbage, they would rather not take the chance of alienating someone. The "print-alls" argue back that if someone is alienated by numerous no-no's, that's his hang-up. The defenders of decency declare that if someone's not reached because of a few fuck's that's the article's fault. So really it depends on whom you want to reach. Those in the middle will leave in that which they feel belongs and take out that which is added merely for sensationalism.

In the larger context, editing involves deciding what is to be printed from the copy available. This, however, depends mostly on who is doing the editing. Many editors prefer to have a wide variety of content, possibly including news articles, essays, poetry, fiction, cartoons, and other artwork.

#### **OBSCENITY AND LIBEL**

Laws and ordenances on obscenities and libelous matter differ

greatly in various localities. If you have a suit filed against you, to hell with the book-go see a lawyer! Below we give only generalized information. Check local laws or see a lawyer for further information.

A loose definition of the concept of libel is the act of defamation, where the defamation was communicated to a third person. You can write a letter to Sidney Citizen saying you think he's full of buckshot, but once a third person has seen the letter and believes your convictions, you can be charged with libel-unless, of course, you can prove he is full of it (in which case he would be in no condition to sue you in the first place). You can legally defame Mr. Citizen in an article if you don't mention his name or you make it so satirical that nobody in his right mind would believe it. (Don't, however, underestimate the value of satire in getting your point across.) Libel laws are very complex and difficult to explain, but here's another example anyway: you can say (and print) that your principal's policy toward underground papers in your school is unfair, discriminatory, and downright shitty, but once you say the principal is a deranged faggot you're in trouble. (If he IS a misaligned homosexual, you can be charged with invasion of privacy-in either ase you've lost.)

For something to be declared obscene it must be entirely without "redeeming social value." You figure it out! One thing, though, the use of "dirty" words: fuck, shit, piss, etc., do not by themselves make a piece of writing valueless. If they did, some of the greatest literary works of this century (Steinbeck, Hemmingway, and a host of other American, British, and Continental authors) would go to the

Library of Congress' furnace.

Although you might be threatened, chances are you will not be sued for libel or publishing obscene material, since it is very difficult to convict someone on these charges. If the school administration or board becomes visibly annoyed, they will try to screw you in every other possible way. All of a sudden you might find strange school rules being enforced to ridiculous extents. Administrations have been known to suspend underground staffers for conspiracy to litter on school property.

#### STANDARDS

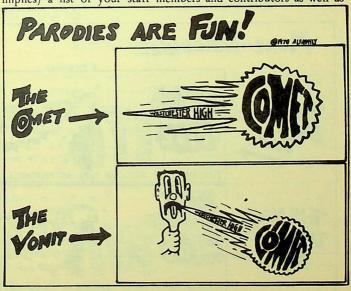
Every newspaper needs a name. It can either be what you think is original, or it can be a take-off on an established paper's name, such as the one your official school paper uses. To present your name on the front page of your paper, you might want an elaborately designed nameplate. It should contain the paper's name and perhaps a distinguishing mark or design.

Your paper should have a mailing address. If no one is willing to "risk" (or whatever the case might be) his personal address, you should consider getting a post office box. A small one can cost from \$6.80 to \$36.00 depending on the city. Boxes can be rented on a quarterly or yearly basis.

An alternative might be to share mailing addresses with an

already established movement group.

Usually, your mailing address is listed on page two in what is sometimes known as a staff box. It could also include (as its name implies) a list of your staff members and contributors as well as



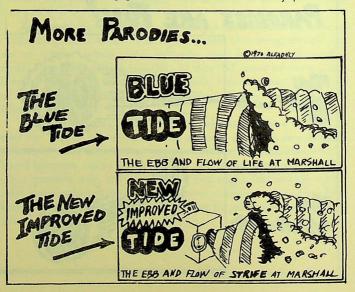
price, issue number, date, circulation figures, brief policy statements, and other paraphernalia. Some will want to include statements indicating that the opinions expressed in any one article are those of its author, and not necessarily of the staff as a whole.

Although you're not supposed to be able to judge a book by its cover, many people judge a newspaper by its front page. For that reason, and because it receives much more exposure than any other page, it should receive special treatment. An ideal front page would attract attention, make an important statement, and lead the reader to the inside of the paper.

The back page also receives considerable exposure, since if the paper is tossed into the air, there is a 49 percent chance it will land with the back page facing up, a 49 percent chance that it will land with the front page facing up, and a two percent chance that the whole paper will end up scattered throughout the area.

If you are going to have articles continued from one page to another, it may be wise to aid your readers by printing page numbers. Some papers will also print such information as the name of the paper and the date of issue on every or every other page.

If you feel your paper needs some kind of literary protection



from other reprinting it, you should consider registering a copyright. In the words of the government, "It is the act of publication with notice |copyright © 1984 by John Doe| that actually secures copyright protection. If copies are published without the required notice the right to secure copyright is lost and cannot be restored."

In other words, to secure copyright protection you must print the copies of your paper with the notice (usually placed under the nameplate or title on the first page of text), fill out a copyright application, have it verified by a notary public, then send it along with \$6.00 and two copies of that particular issue to the Register of Copyrights, Library of Congress, Washington, D.C. 20540. The blank applications and a booklet explaining copyright protection can be requested from the above address.

#### BUREAUCRACY

For our chapter on bureaucracy, see section 6542N 266B 521 parts A, B, and C.

#### SECTION 6542 N 266B 521 A, B, C

Deadlines are like rules; they're made to be broken. Some papers try to get along without them, accepting and encouraging articles at all times, and printing an issue when they have enough material. The main disadvantage to this system is that people will tend not to write and hand in articles if there is no deadline pushing them on. However, papers that do set deadlines will find contributors constantly pleading with editors to let them turn in articles late. Since you will almost assuredly need their articles in order to have a paper at all, you will always go along. Therefore, it is wise to set your deadlines at least several days before you really need the articles turned in.

It is absolutely essential that each staff member be able to contact every other staff member at all times. It is also important to be able to reach your printers and other connections. Therefore, an accurate, up-to-date list of names, addresses, and phone numbers is a must. In other words, don't leave all of your important phone numbers lying around on little slips of paper.

Since money is hard enough to get anyway, it is important that you keep track of it. One person in your group should be responsible for holding the cash and keeping accurate financial records. In this way, editors and staffers can know exactly how much money the paper has without having to count numerous (hopefully) containers of dimes, nickles, pennies, and trading stamps. Keeping track of where your money comes from and where it goes will help you to plan for future issues.

#### **FILLERS**

Many publications, in order to prevent extra thick margins, excessive white spaces, or occasional blank pages, try to have a number of "fillers" available for each issue. These are short pieces of

writing which may or may not be included in an issue.

One type of filler definitely serves a purpose. Examples of these are short pieces asking for contributions, selling subscriptions and back issues, and announcing forthcoming events. They can be funny, serious, dire, casual, threatening ("If you don't send in money, this will be our last issue!"), or promising ("If you don't send in money, this will be our last issue!").

Some fillers exist solely to fill up space, as in the example

shown.

### Short Story

'Twas a dark dreary damp dunky

He fell, dead.

The End

Artwork which does not necessarily pertain to any particular article can also be used as a filler. If you're really desperate, and must fill up space, use the . . .

Universal Filler!

#### POOFREADING

Proofreading as the act of reading and correcting typographical errors. There is only one thing we cannot emphasize too strongly concerning proofreading, and that is to PROOFREAD! However, the person who does the proofreading should not be the same person who typed the copy, for he will often subconsciously overlook his errors. Whenever copy is typed over, it should be proofread. One good system is for one person to read aloud the just-typed copy to another person following along on the original. To test your proofreading skills, see if you can find the error in the following paragraph.

Any proofreader should be able to catch the the error in this little paragraph.

After you have finished that, go through the rest of this book and see if you can find the rest of the errors. When you find them, list and send them to the address on page two.

# per and Prim

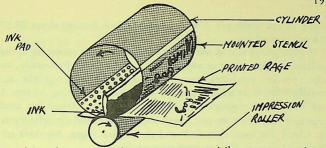
This chapter gives a brief, oversimplified explanation of the three basic printing processes for your purposes and the various types of paper, where you can get them, and how much they will cost. If you don't know the first thing about printing or how and where your paper will be printed, this should temporarily become your bible. If you do know some about printing, you might find some helpful suggestions you hadn't considered before. If you're convinced you know everything there is to know about printing (as we are, obviously, about everything), rip this book up into tiny shreds and send it, along with the lyrics of the Star Spangled Banner (written on the back of a soiled envelope) to the address on page two.

Our philosophy is that underground editors and staffers should waste the bulk of their time writing good articles or doing other movement work rather than wasting their time looking for a printer or wondering how the hell this mimeograph machine works. Since we'd wasted so much time on trivia while working on the New Improved Tide, we decided to waste the summer writing this book telling you how we wasted our time so's you could waste your

time on more important things.

#### MIMEOGRAPH

Mimeography is an inexpensive "porus" or stencil duplicating process. The mimeograph stencil, tissue paper with a coating of cellulose or wax, is "cut" by typing or drawing with a stylus leaving grooves in the coating. When the stencil is applied to an ink pad, the ink will seep through the cuts and produce a print.



Although mimeography is not very versitile, some quite decent work can be done. (We've seen art prints in 13 different colors done on a mimeograph.) Many times mimeographed work seems sloppy or hard to read. This can easily be oversone with a little effort.

Stencils usually cost 25 cents for either letter or legal size. They will most always include a typing pad and a cellophane cover sheet. Always buy the right size stencil for your machine. Mimee correction fluid is absolutely necessary; it costs about 65 cents for two fluid ounces. If you want drawings or anything besides typing, you'll need a stylus. The most common stylus is the ball point (about \$1.25 each; blunt, medium, or fine point) which can do almost all line work. Other stylii for special purposes (borders, surfaces, etc.) cost \$2.50 or more each. If you plan to do mimeographing for quite a while you might consider buying an assortment of stylii. Packaged assortments cost less than the individual stylii. When you draw on a stencil you need a special drawing sheet. This is a plastic sheet with small raised dots which, when drawn on, cuts a clear image in the stencil without ripping it. These sheets come in signature size (about 50 cents) to legal size (about \$2.00). Shading or other textured effects can be added to the stencil with texture boards. These and other mimeo accessories should be available in stationery stores.

Typed, printed, photographed, and drawn matter can be transferred to a stencil electronically. These electronic stencils cost about \$3.00 to have made. Instead of cutting a stencil, you paste up the material to be transferred. These stencils can be cut up and parts spliced onto regularly cut stencils to add photos, etc. to your typed material. Copy for electronic stencils is prepared in the same manner as offset copy.

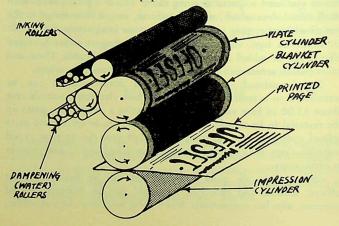
Mimeographs are quite common and can be found in most offices, schools, and churches. It should not be difficult to find someone who has connections. When using someone else's machine,

be sure to ask if the ink is included in the deal. It costs about \$2.50 for a one-pound can.

If your group is into some bread and your paper comes out quite regularly, buying a new or used machine may be wise. Personally, we prefer power machines since hand-operated mimeographs are generally inferior in quality and are very time-consuming to run. A good power mimeograph costs about \$300 new. Prices for used equipment vary-be sure you check the machine carefully before you buy. Check the local classifieds and the Yellow Pages. Auctions are also a great place to pick up used mimeos cheaply.

#### OFFSET

Photo offset or lithography is quite a bit more sophisticated and expensive than mimeography. Copy (typed matter, line drawings, or screened photos) is pasted up on a backing sheet. Plates can be made from a photo negative of, or directly from the copy. The image areas on the plate are greasy and will repel water; non-image areas will hold water, and, when wet repel ink. After the plate is mounted on the press and dampened, only the image areas will pick up the ink. The image from the plate is transferred or offset onto a rubber roller and then transferred to the paper.



Almost anything a newspaper would normally include can be reproduced by the offset process. Virtually any size can be printed by offset machines. General page sizes for our purposes are, in inches: 8½ x 11 (letter or digest size), 8½ x 14 (legal size), 11 x 17

(double letter or catalog size), 17 x 22 (tabloid size).

Commercial prices for offset work up to 11 x 17 inches run as follows: a metal plate photographically made with photos (halftones) averages about \$8.00. Without halftones a photographically made plate should cost no more than \$5.00. An electrostatically-made plate costs much less—usually only \$2.50. Electrostatic plates can do the same as photo plates but the quality is not as good and they will usually not last as long (perhaps only 10,000 copies). An Itek plate can cost only \$1.00 and can reproduce line work and very coarse screens. Itek plates are inferior in quality to netal plates, but for uncomplicated line work to be reproduced in black (no more than 3000 copies), they should prove satisfactory. Press runs (with ink included) normally cost \$4.00 to \$5.00 per thousand. If you want color(s) other than black and, if your printer is willing to clean his press and has the ink you want, figure an additional \$2.00 to \$5.00 per color.

If you are doing a tabloid you'll probably deal with only one printer who'll do everything. An all-inclusive average price for a 17 x 22 or 18 x 24 inch paper, four pages on newsprint can be from \$60.00 to \$100.00 for the first 2000 copies. Additional copies will

cost much less.

The most favorable conditions for printing offset are, of course, if you have a friend who has or has access to a press and platemaking facilities. If such ideal circumstances are not available, you must go

out into the cold, ugly, and nasty world to find others.

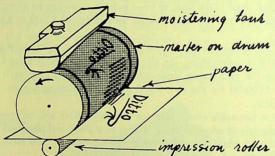
If there is a large underground press or movement printing shop near you, by all means investigate. If not, you'll have to go into the commercial market. There are many types of commercial establishments. Prices will vary greatly. We suggest you tear out the Yellow Pages section on printers and call each one in your neighborhood asking for information and prices. When you go to printing places do not be afraid to suggest reduced rates, at-cost, or free printing in exchange for a plug in your paper.

In large cities, commercial printing plants will offer printing to fellow printers-publishers at drastically reduced rates. These deals are advertized in local printing trade papers. Add the word "company" to your paper's name and you automatically become a publisher!

Make your presentation, perhaps wearing a suit-and-tie-type apparel and/or armed with a few dollars' worth of business cards.

#### OTHER PROCESSES

Spirit process or "ditto" duplication is generally for much smaller jobs than the other two processes mentioned. For a paper of sizeable circulation it is unsatisfactory, but if you want less than 500 copies, ditto may be ideal. A special spirit carbon paper is placed backwards behind a glossy "master" sheet. When you type on the master, a reverse image is formed on its back. The master is then attached to the main cylinder of the machine. During each revolution, the master is moistened with a special solvent allowing a little of the carbon to transfer to the paper.



Masters are generally good for 300 copies; the quality is nothing to write your aging great-aunt in Gary, Indiana about. A good point about ditto printing is that as many as five different colors can be printed at the same time. Simply put a different color carbon behind the master sheet and type or draw with (with a ballpoint pen on hard surface) whatever has to be added in that color. Colors available are: purple, red, green, black, and blue. The pigment in purple carbons will produce a better image and last longer than the other colors. Always handle carbons with care; the pigment produces ugly, permanent stains on clothing, etc.

Ditto fluid requires a smooth paper for correct transfer of image. Special ditto papers are available and should always be used. You very seldom see ditto work done on both sides of a sheet. This is

because most people consider ditto to be a quick duplication process and do not take the time to keep their machines clean and in good working order, hence, the back side of a printed page is cluttered with dirt and backwards images offset from the impression roller.

Another good point about ditto is that a paper printed by this process can practically be sustained on someone's milk money. Carbons complete with the master sheet cost around 10 cents each. Fluid costs about \$1.35 per quart but approximately 40 percent less by the gallon. A quart of fluid, however, should outlive half a dozen average higschool underground newspapers.

Ditto masters can also be processed photochemically by a process known as thermofax. Any typed, drawn, or photographed matter can be reproduced in this manner with good results. These masters caost about 25 cents each to have made (less in quantity). Most blueprint

houses have thermofax machines and offer these services.

Each school should have several ditto machines; no bureaucracy can survive without some kind of short-run duplication machine. Good new machines cost about \$80.00 for manual and \$100.00 for power. Used machines should not be hard to find since many offices are replacing them with Xerox-type goodies.

The silkscreen is similar to the mimeo in many ways. The mimeograph was dervied from the silkscreen but is used for completely different purposes. Silkscreen should be used for signs, posters, and art prints supplementary to your paper. For typed copy

it is absolutely unfeasible.

A fine silk screen is stretched across a wooden frane. A stencil, either paper or some type of plastic film is produced (by cutting with a blade, or photochemically) and attached to the screen. Ink is added at one end of the screen; a sheet of paper is placed underneath. When the ink is moved to the opposite side of the screen with a squeegee, it will seep through the screen in the open parts of the stencil onto the paper. Each sheet must be printed by hand and allowed to dry before stacking.

Silkscreen is especially good where heavy ink coverage is desired. Almost any type of surface can be printed on. Inks of many types and colors, including flourescent and blacklite-sensitive, are readily available. If you have a silkscreen freak in your group, you might

bring in some extra money by selling posters and art prints.

Silkscreen beginner kits are made in a wide variety of sizes and types and can be found in hobby and art stores. Professional equipment is much more expensive. A derivative of this is the silkscreen mimeograph which is essentially the same as an ordinary mimeo except that large solid areas can be reproduced. Most times,

hand-cut or electronic stencils are used on these machines.

By far the cheapest duplicating method we've found is the hektograph. To sum up our entire editorial comment: blech! (but it's better than nothing). A hektograph is like a cookie sheet filled perhaps ½-inch deep with semi-solid repoducing jelly. A master is typed with a hektograph carbon making a forwards (unlike ditto) image. The jelly is preconditioned by moistening slightly and then the master is put face down in contact with the jelly. After 60 seconds, the master is removed. To produce a print, a sheet of paper is put on the surface of the jelly, smoothed down, and peeled off. The printing (that's really an abortion of the word) is generally of terrible to ridiculously terrible quality for all the time you waste. Carbons last, at most, 100 copies. As we said, though, it's better than nothing.

Sears still sells the hektos new—\$4.50 for a complete kit (comes with several carbons). Extra carbons, although they should not be confused with ditto carbons, can usually be bought in the same places for the same prices. Masters can also be produced with hekto pencils and hekto ink. Ink and pigments on carbons are poisonous and produce permanent reproducing stains on hands, clothing, etc. If you are fortunate enough to have one of these slimy beasts up in your attic but the surface is ruined (years of neglect or sudden changes in temperature will produce pimples in the surface), merely scrape out the jelly, melt it down, pour it back in, and presto!

#### PAPER

NOT JUST ANY TYPE OF PAPER WILL DO! Certain printing processes require certain types of paper. Generally it is not difficult to ruin your paper with the wrong type of paper . . . that is, a paper should be worth the paper it's printed on, or something like that.

The content of a paper is usually expressed as a ratio of sulphite to rag. A 100 percent rag content paper will last practically forever while newsprint (generally 100 percent sulphite pulp) will start visibly deteriorating within a week. You will probably be dealing with a paper with over 85 percent sulphite content.

Any paper, if not a standard size, is cut from a standard size. For bond, mimeo, and ditto papers the standard size is 17 x 22 inches.

One ream or 500 sheets is the basis of weight. These types of paper are available in 13, 16, 20, and 24 pound weights (sometimes expressed as "substance"). The standard size for newsprint is 24 x 38 inch sheets.

If the size of paper you want is not an exact derivative of the standard size, you will have waste left over. This should be taken into account; oftentimes or scrap sheets can be cut from this waste.

The finish is the quality of the surface, whether coated or not. The offset and ditto processes require the ink to sit on the surface of the paper so a smooth finish is desired. Mimeograph ink, however, must penetrate for best results so a rough finish (absorbent) paper is desired. Coated or extra-smooth finish papers are required for fine-screen halftone work.

Papers can be bought at stationery stores, department stores, and paper companies. Prices at the former are outrageously high while at the latter two they are moderate. If you live in a relatively large city you may be able to buy paper at freight salvage outlets. There, brand mane papers can usually be bought by the carton (10 reams, 5000 sheets) completely undamaged. Legal or 8½ x 11 size bond, mimeo, and ditto paper averages \$2.50 to \$6.00 per ream at stationery stores; \$1.75 to \$3.00 per ream at department stores or paper companies, and \$1.00 per ream at freight salvage outlets. Prices for colored stocks are generally 20 percent higher; paper by the carton generally costs 10 percent less.

Your local movement group may also be able to reccommend a cheap place to buy paper, rather a place to buy cheap paper, or

rather a place where paper is sold cheaply.

For better quality offset work, inquire about book paper (basis 50). Although it can cost up to \$2.50 per ream, it might be available

through freight salvage.

Standard sheets of bond and mimeo papers cost four times the ream price for 8½ x 11 inch and then some. They are only cheaper than the pre-cut stock in quantities over five-hundred thousand or so. Figure \$7.50 to \$10.00 for a ream of standard sheets (17½ x 22½ inches—the extra half inch is a cutting allowance

# Printing Production void void void void void void

Now that you hopefully know something about printing, we're gonna' tell you exactly what you can do with that knowledge. The only way to present this information giving priorities as they should be given (etc., etc.) is to write a three-dimensional information cube; and since this obviously isn't one you may think the organization of this book is rather shitty. Add to that the disorganization of your group (if "group" does the thing justice) and you have a bigger mess still. Since different groups have different degrees of disorganization, this book will seem badly organized to some and worse to others. (As a matter of fact we can't even agree on the order!) Our suggestion, if you are displeased, is to cut up this book and paste it up in any order you like.

#### **TYPEWRITERS**

Unquestionably, no paper can get along without some sort of a typewriter and someone who knows how to use it. Two-finger typing is rather sick, really. You can teach yourself the ten-finger method in just a few weeks and you will build speed naturally as you go along. Typing instruction books are available in libraries and book stores. You will, however, have to discipline yourself to practice frequently.

There are three types of typewriter ribbons: cotton, silk, and carbon. The cotton one you're undoubtedly familiar with. The silk, because it's thinner, produces a sharp, clear image. The carbon is bbon is actually a long strip of plastic film with a coating of carbon pigment. Carbon ribbons produce a clearer, sharper image than the other two, but they can only be used once. Ribbons come on thousands of different types of spools and cartridges so be sure to

buy the right one for your machine. Also, when you throw away old ribbons, it might be a good idea to save the spool—just in case.

Now, onward to machines ... Manual ones are fine for general copy preparation. Most manuals do not cut stencils very well. If none other is available, you must type with firm, steady strokes giving "closed" letters, such as m and w, more pressure. If your machine can use a carbon ribbon, it can be used for repro typing. If this is not possible, you can make the same effect by typing directly on a no-smudge carbon paper with repro paper underneath and the ordinary ribbon removed. This, however, can be a hassle.

Electrics are generally better than manual typewriters. They are better for stencil typing because they can give more pressure on strokes—the work is done by the machine, not by you. They are better for offset because most can be equipped with carbon ribbons.

Regular electrics usually have the same features as manuals. Some have power carraige return. Beware of this on small machines. The power return is oftentimes quite powerful. If you are typing at the edge of the table and decide to power return, one fine day you may find that your typewriter will do a once-over somersault and end up on the floor. This could be disasterous to the floor.

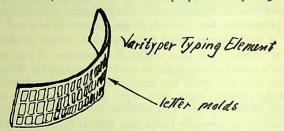
Proportional-spacing electrics allow letters to have different widths which makes the copy look more like it was typeset. The most popular proportional spacing typewriter is the IBM Executive. Typing well on proportional-spacing models might require a little practice.

The IBM Selectric has no keys (the kind that strike the paper). The letter molds are contained on a sphere the size of a golf ball.



When you strike a key (the kind you put your fingers on ), a mechanism will rotate the sphere until the correct letter mold is in position and then strike the platen. The carraige is stationery while the sphere and ribbon unit moves across the page. Various spheres

(which are readliy available) contain different type styles and can be changed instantly. Some Selectrics have proportional-spacing.



The Varityper also has no keys; these are replaced by a curved plate containing letter molds. Plates are interchangable; some 600 different styles of type are available. On the Varityper, the space between letters can be varied. Late model Varitypers have proportional-spacing.

"Justifying" typewriters do not justify (make both margins even)—you do! On these models you set the margins for maximum line length and type your line. When you retype that line (immediately thereafter) the machine automatically adds space between words to make the line of desired length.

These typewriters are easier to come by than you may think. Many offices have some sort of fancy typewriter. Check your connections (parents, friends, etc.). Very often someone will let you borrow a machine or let you use an office on nights or weekends. Also check "friendly" organizations: big undergrounds, movement groups, coffee houses, headshops, ACLU, labor unions. etc.

#### LAYOUT

At this point you should be confused; we are too. There are many things that must be decided upon—ideally, of course, all at once. In practicality you will probably do whatever is convenient and wait for the rest to come when it does. Since money does not speak for the majority of undergrounds, they must depend on the willingness of people to help the cause. Having to depend on

volunteers will probably be the major cause of confusion for your

paper.

When you have decided on format, all else follows naturally (you hope). The size of the final product and the method of reproduction are major considerations. Through our own experience we've found that the amount of money in the treasury bears a direct relationship to the size and format of the final product. If you are thinking in terms of a circulation of 500 or more, you might want to mix processes. Doing pages of bulk, typed copy by mimeo and offsetting the pages with art, cartoons, photos, etc., is much more economical than doing the whole schtick offset. If you are thinking in terms of total offset, confine your photos to one plate and make electrostatic or Itek (less expensive) plates for bulk copy.

Generally, a newspaper gives layout priority to the articles and written work, and fits the artwork, ads, etc. in wherever and however they best go. If you are being the least bit conventional, you will first decide whether your copy will be presented in columns or the entire width of the page. Unless your page is unusually narrow (like the format of this booklet) we strongly urge you to consider using columns. Long lines of type will most likely discourage reading. Typographical experts seem to agree that the ideal column width is one and one-half to two lower case alphabets long. Through our own experience with 8½ x 11 inch stapled sheet format copy, we've found that about 31/2 inches is a good column width for typewritten copy. Make a "dummy sheet" the size of your paper and experiment a little to see how many columns of what width and length you can accommodate. Be sure to take margin space into consideration (staples, page headings, etc.). When you have done this, you can do your artwork, headlines, advertizements, etc. to fit the columns or the graphics of the page.

While we're on graphics—if you want a long, drawn-out explanation, go to the library. We believe it is impossible to tell anyone what looks good. You will have to decide for yourself how your paper is going to look. We can suggest that you use cut-outs representing typed work and pictures and move them around on your dummy to see what you actually want as far as graphics is

concerned.

There are two basic reasons to do preliminary typing: to find out how long your copy will be and to figure justification. If your dummy is rather tight you may want to preliminary type to see exactly if and how everything will fit (and if it doesn't, what will have to be cut). If there is plenty of space and you do not plan to justify, you should be able to do final typing right from the first copy.

Justification, the technique of making the right margin even, is by no means necessary but does add a professional look to the final product. Experiment with a few lines to see if it is worth the extra time-it makes preliminary typing mandatory.

#### Justification

on fixed-spacing typewriters. First set your column width... let's say 23/8 inches or 29 dite units. Type out your line, as much copy as will fit. Then fill the rest of the line with slasher

> Now is the time for all good/ men to come to the aid of////

The stashes indicate how many spaces howe to be added inside the line. Put little check marks where you want the spaces to go.

> Now is the time for all good/ men to come to the aid of////

when you re-type, just add one-extra space whereever there is a check mark It you do this correctly, both margins should be straight.

> Now is the time for all good men to come to the aid of

For repro copy some other very sophisticated equipment is available. The Friden Justowriter and the IBM Magnetic Tape Selectric Composer will do justifying automatically. These machines involve a console with two keyboards. You type regularly on one which punches or codes a tape. The tape is transferred to the other which then automatically retypes and justifies the copy. Proportional spacing, letter spacing, and interchangeable type faces are employed.

If you are fortunate enough to have composing done for you, no matter what process is involved, you should type out copy neatly, double or triple spaced, on opaque white paper. See appendix on

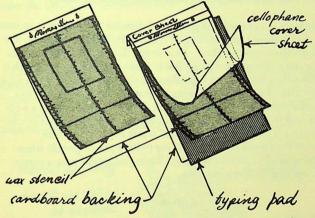
Printers' Information for standard printing instructions and copy and proofreading marks.

#### STENCIL TYPING

If you are mimeographing, how well you cut the stencil can influence the finished product more than anything else you do.

There are several parts to a complete stencil pack.

#### The Stencil Pack



You may not need all of these. To determine which types of padding you should use, examine your typewriter. First, if it has a stencil cut, "S," or white position on the ribbon control, move it to that position; if not, remove the ribbon entirely. Next, with a typewriter cleaning brush or old toothbrush, clean the keys. (If using the IBM Selectric, remove the typing element to clean.) Observe the following points: if the machine is new or the keys are unusually sharp, type stencil with cellophane cover sheet. If the keys are dull, place typing pad between stencil and backing. If the platen (roller) is hard or brittle, place a cellophane pad or soft paper behind the cardboard backing.

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To achieve the desired effect you may need to use a combination of the above. A perfectly cut stencil will produce sharp, clear images on all letters. If the setup is good for all letters except 0, a, and e, which fall out, dull the cutting edges of the letter molds a little with a nail file.

#### CORRECTIONS

THERE IS ABSOLUTELY NO EXCUSE FOR TYPEOVERS OR UNCORRECTED ERRORS! Each stencil should be carefully proof-read before copies are fun off. If you are using a blue or green stencil, tape it to a windowpane (or use a light table or scope, if available) to aid in proofreading. Lighter stencils are usually supplied with a dark interleaving sheet to make proofreading easier.

We leave it to your intelligence to determine when there is an error and that it should be corrected. To make the actual correction, use blue mimeo correction fluid. Be sure the fluid is fluid, that is, thin and watery. Do not use pulpy fluid. When you find an error, rub it lightly with a smooth pen cap—this will close up the cut. Then apply a very little correction fluid using vertical strokes so as not to zap out adjacent letters. Correction fluid should be used only in a well-ventilated room and should be kept tightly closed when not in use. If an error is found while the stencil is still in the typewriter, separate the stencil from the backing (with a pen or pencil) when applying fluid to prevent sticking. When you retype over a correction, use slightly less pressure.

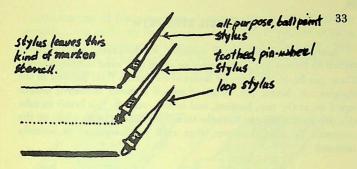
#### DRAWINGS

Drawing on a stencil is done with a stylus. There are several types of stylii. When using a stylus, always have a drawing sheet directly under the stencil. It is advisable to do the drawing over a light table or scope. One can easily be improvised by elevating a plate of glass on four jello boxes with a high intensity lamp underneath. Desired drawings can first be done in pen and ink on regular paper and then traced onto the stencil, if the light setup is used.

When ruling on a stencil, be careful of the amount of pressure that

is applied to the tyylus

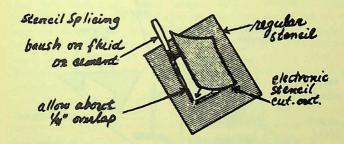
is applied to the stylus. "Hard" lines can tear the stencil (either before or during printing). If the stencil if torn, however, it can be



mended with fluid. Block out tear completely and do no re-rule. Extra effects can be made by placing a screen or texture board under the stencil and burnishing lightly with a smooth pen cap.

#### **ELECTRONIC STENCILS**

As we explained earlier, electronic stencils can be made from your pasted up copy without cutting manually. (To avoid needless repitition, see offset copy paste-up for instructions.) These stencils can be used whole or cut up and spliced onto regular stencils to add photographed, drawn, or typeset material. Splicing is fairly simple.



Cut out desired material from the electrostencil, cut a hole in regular stencil (with sharp x-acto blade); paste on the material you want to add with the stencil cement and/or Scotch Magic tape. Be sure you leave at least one-quarter of an inch overlap and that your splices are securely cemented. Large corrections can also be made by splicing.

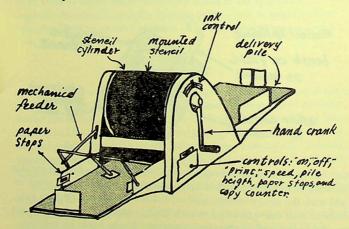
#### STENCIL STRENGTH

Every cut in the stencil weakens it; therefore, a fully typed stencil tó be run for 2000 copies or more may need reinforcements. These can be in the form of layers of correction fluid painted in the margins, or, better yet, strips of stencil material cemented and/or taped on at the top, bottom, and in the margins. It is better to take this precaution than to have the stencil tear and splatter while on the machine. Be sure, however, that each reinforcement is securely fastened.

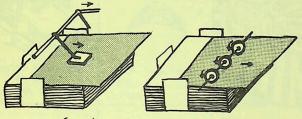
#### MIMEO MACHINE OPERATION

In many instances when you have access to a mimeograph machine you will not have access to someone who knows how to use it or an instraction manual. Below we give step-by-step instructions on how to operate an average machine. They are based on A. B. Dick models but are easily adaptable to others. We have happily concluded that only minimal intelligence is required to operate a mimeo machine—any moron can do it.

In the picture below we show our hypothetical machine.



No amount of fancy machine operation, if such a thing is indeed possible, can make up for a lousily cut stencil. If you are at all in doubt, spend more time working on your stencil. Before you decide you are finished, go back and check for incomplete corrections. Once on the machine, the stencil cannot be safely corrected.



feeding systems (mechanical)

Mimeos can have two types of mechanical feeding systems. On one (left) a foot with a rubber or soft plastic shoe slides the paper from the stack into the printing mechanism. On the other (right) the wheels drop down to the paper pile once in each cycle and feed a sheet. Neither of these feeding systems eliminates the possibility of multiple sheets being fed in. If you want to print on both sides, you will have to weed out the unprinted sheets (if any) manually after the run.

On the rear of the machine, in contact with the stencil cylinder, you will find small metal wedges called strippers. These strip the paper fron the stencil after printing. If the paper "wants" to stick to the strippers, it is probably because of static electricity. Many models have static removers—bars with metal brushes which come into contact with the paper. The static remover must be grounded (connected to a ground terminal, radiator, or other grounded article).

Before you begin to print, you should become faniliar with the controls of your machine. If you have no instructions and your machine bears little resemblance to our diagrams, our suggestion is, as a last resort, to turn on the machine and fiddle with each control until you have some indication as to what it's for. Always remember the original positions of adjusting knobs as they may be "tuned" or set for certain operations.

The first step in preparing the machine to run is to load the paper. Do not unpack the paper until you are ready to use it-dents



and other damages to a stack of paper can cause difficulties when you're printing. Before loading, "fan" the paper so sheets will not stick together. Lower the paper table on the machine and move the paper stops out to the sides. If your machine can print several sizes, the paper stops on the side and back of the pile will be movable and have calibrations. Set these for your size of paper. Also set the back stop on the delivery pile. Load in your paper with several sheets of scrap on top. Securely fasten the paper stops. The paper table should move up automatically as sheets are fed in. Next, prepare to mount the stencil. Turn crank so the front stencil clamp is in place. (On power machines, the hand crank can be disengaged cylinder so it won't swing around when the power is on. For this operation it should be engaged.) Insert the stencil (holes at top of stencil into pins on machine), and close the clamp (lock, if lock is provided). Make sure the stencil was mounted backwards, right to left reading. Use the backing sheet to help smooth the stencil onto the ink pad. Remove backing sheet by tearing along perforations. Remove wrinkles by lightly tugging at the sides. Wrinkles that remain can be smoothed out with a cloth. Finally, open rear clamp, insert the bottom of the stencil, close and lock. Recheck for wrinkles.

Now that the stencil has been mounted, turn the hand crank and feed several sheets of scrap through—this will seal stencil to ink pad. Feed until a consistent quality of image is achieved, then check for adjustments (later in text). To complete run after adjustments have been made, on power machines, disengage hand crank, push "on" button (this will start the cylinder moving), adjust speed, push "print" button (this will start sheets feeding through the machine). On our hypothetical machine, pushing the print button again will stop sheets from feeding but leave the power on. This can probably be done in a similar manner on your machine. On a manual mimeograph, instead of turning on the power, just keep turning the good ol' crank.

When your last run is finished leave stencil mounted (or mount oiled "keeper" sheet, if provided) to prevent the ink pad from drying.

Now, wasn't that easy? Chances are it wasn't, so here's a whole section on . . .

#### ADJUSTMENTS AND TROUBLESHOOTING

No image. Ah ha! The first and most critical problem you can

encounter. Try running a few more sheets of scrap. It could be that there is no ink. Refilling is quite simple. It could be that your ink pad is dried out. In that case consult the owner of the machine before you replace it. It could also be that you mounted a blank stencil. In that case forget about the newspaper and go read Dick and Jane!

Horizontal asjustment. This is quite simple-merely move the feeding pile right or left. If you are going to staple, bind, or punch sheets after printing, you may want to leave more of a margin on one particular side.

Vertical adjustment. On any half-decent machine, the center part of the stencil cylinder can be moved while the outer part remains stationary. If this is possible, calibrations to raise or lower image are usually present on the cylinder. A clip, or similar mechanism will allow this movement.

Streaks of ink or no image. You probably have wrinkles on the stencil. Smooth out by tugging lightly or smoothing with a damp cloth. Press stencil to ink pad for better contact in no-image areas.

Fuzzy image. First run more copies. If this doesn't go away you have one of two problems: too much ink (fiddle with ink control) or, the stencil is to tightly wrapped around the cylinder (relieve

pressure by re-mounting stencil).

Unwanted lines. First adjust for less ink. Your strippers could be printing (clean with warn water or solvent). Your reinforcements could be picking up ink-clean with damp cloth. Unnoticed wrinklies could have made permanent creases which are printing. First smooth out wrinkles, then clean with damp cloth, then use correction fluid

carefully to repair crease in non-image areas.

Image on reverse side of paper. To our knowledge, there is no mimeograph that is supposed to print both sides of a sheet simultaneously. Unless you are in the process of inventing one, we'd suggest that you clean your impression roller with solvent or water. If that doesn't work, you are probably getting set-off. This is when excess ink from one sheet transfers onto the back of another when they are stacked. Adjust for less ink.

No feeding. Pile is probably not high enough. Either get it stoned or put several sheets of cardboard or scrap at the botton of the

feeding pile.

Overfeeding, excessive doubles. Either your pile to too high or there is something wrong with the papwr. Remove some from the' stack. Remove stack and re-fan and/or spray with anti-static aerosol

#### Reprinted from the OUSY Mimeograph Specimens New Improved Tide. nts will the A weak The con The EN COMME but foci and cook out about 1 or \$1.50 a c 5008. Wrinkle! ha get some Rood denete: Either tn3 SMOOK to oder Black ng a sleeping bag mk pad out with th damo Sano corneout, they PISE Cloth. cists not I st wing unnoticed t coough 72 40 ink, or Wrinkles Det de Moreis can dethe SCA · lines. relop call ne a ito spot in the Impression into per-377 roller. First press' stencil to manent 10! pad for better contact. lines. This is a combination of a Wrinkle and rget COTHILL a bad correction. 54 Eas at this point There i LONG BEAC School ingall there is nothing LOS ANGEL sinci that can be 155 Nor basish DI ANNED D 'less and done ... SOME reasur-No image -no -> ಕ್ಷಾಬಹಾಗಿ ಕೆ entl. home exists ink, dried ink Itilal saw ly cont pad, blank stenuil ing come it is or you put the stencil the on is acon a ditto machine. fact studencs' history, except in ninistra lass ag ses. governments have tion mi dent Gov-11, some super. in the Section hich calls itself Too much pressure, ;e 8) too much ink. Run

a few more copies,

adjust for less ink.

Stencil is not tucked in well

at the bottom. @1970 ALFARHLY

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(there is such a thing). If more than a certain number of sheets are fed in at the same time, they may cause the stencil to rip and splatter (rendering it rather useless).

Paper sticks to stencil. Dust lightly with talcum and remove

excess by running a few sheets of scrap.

Feeding difficulties. Make sure your paper stops are not too tight nor too loose. The feeder could be loose, dirty, or damaged. The

paper could also be damp or contain excess static.

li'eak spots in final copy. If they are always in the same place, then the cylinder has a low spot. Sometimes this can be fixed either by pulling pad out with a crochet hook, or by placing additional padding under it. It may also mean the ink pad is too low or it has hardened spots in it, in which case it should be replaced. If the weak spot turns up in different areas vertically but the same horizontal measure from the edge of the page, then you have problems. Your impression roller probably has a low spot (and it's a real bitch to replace). Try putting masking tape on the low spots if you can find them.

Whenever you stop the machine to load and unload paper, check stencil for lint, dust, or excess ink buildup. Also make it a habit to keep machine clean and free from inky fingerprints. Mimeo ink is oil based and makes rather nasty stains on clothing.

To save stencils, it mimeo cabinet for this purpose is not provided, press and store them between the pages of a large magazine.

### OFFSET PASTE UP

Whenever you prepare copy for offset work, the finished product will include all the dirty fingerprints, smudges, jelly stains, and doggy poop you allow your paste up to retain. Our suggestion is that any material which has the potential of being offset copy should be treated as if it were the Crown Jewels. Buy a buck's worth of plastic report covers and use them.

#### REPRO TYPING

... which, if you don't know already, is typed copy to be

photographically or electrostatically reproduced. As we explained earlier, your typewriter should be equipped with a carbon ribbon (or equivalent) for all reproduction work. If you simply cannot get a carbon ribbon and you can't use the carbon paper trick, try a new silk ribbon. It is needless to say that only black ribbons are acceptable, so I really don't know why that last phrase wasn't edited out.

Repro typing must be done on a paper which does the typewritten work justice by allowing a clear impression to be made and aid the paster-upper by not smearing, wrinkling, or tearing easily. Such a paper is a highly coated, smooth finish one, such as that used for ditto masters.

Rather than trying to type and position (layout) at the same time, we suggest that you just regularly type out copy and paste it up later. Also the lesser copy per page, the lesser the chance of smudging. We suggest one column per page to reduce the amount of copy that could be spoiled—there will be enough opportunity to ruin the copy when you paste it up. Before you start, set typewriter margins at page or column width, label the page by number and state that it is repro copy and should not be handled with dirty hands. Adjust the pressure control to give a black impression without punching through the paper. Double check margins and start to type. Type as you normally would. You will undoubtedly make mistakes, so here's how to make . . .

#### CORRECTIONS

For small corrections, only a few letters, you can use either correction tape or white correction fluid. Correction tape is like white carbon paper. Backspace to the bad letter(s), insert tape over that letter, type bad letter, and presto! it's gone. Then backspace and type correct letter(s). Tape comes in small sheets or on rolls and is available for about 60 cents for a small packet. White correction fluid is like a thin white paint. To correct error, roll carraige up to mistake and touch on as little as possible, blow for quick dry, then retype. Fluid is available for about one dollar per half-ounce bottle (brush included). Since fluid dries quickly the bottle should not be left open. In the event that it should become pulpy, mix in a drop or two of paint thinner. Brand-name thinner (especially labeled for correction fluid) costs 30 cents for a half ounce.

For larger errors-a line or two-clearly mark the bad lines,

double space, and retype. When the paste up is being assembled, the paster upper will be alerted by the double space and cut out the marked lines. The good sections of the copy can easily be spliced together and no one will know.

#### HALFTONES?

All offset copy is classified as either line or halftone work. Line work is typing, handwriting, line drawing, etc. Halftones are photos and materials of various colors. Line work involves one color or tone while a photo has black, white, and varying shades of gray. Since the offset press you will most likely be using can print only one color per run, photos must be screened. This process transforms the middle shades of gray in the photo to dots of various sizes. Different dot densities can be achieved with different screens. Fine screens will appear to have true halftones while a medium or coarse screen will obviously have dots.

Color work to be reproduced must be changed to black and white unless you want to spend a fortune on full color printing. The black in the picture will remain solid; the reds and browns will become dark grays; the yellows and oranges, medium; and the blues and greens, light. The black and white must then be screened for printing.

#### ARTWORK

When you do artwork for your paper, there are several points to consider. For best results use a drawing or drafting pen with dense black (or black India) ink on repro paper. For ruling lines or making circles, etc., drafting tools will be very helpful. Use white fluid for corrections.

Unless you are having plates made photographically and/or printing in a large (11 x 17 inch and above) format, you should avoid large solid black areas. These will most likely not come out solid black and also have a tendency to upset the ink/water balance on the machine, ruining the rest of the page. To achieve a constant texture or solid-appearing area, you should use art screens. These are plastic adhesive sheets with dots, lines, and other textures of various sizes and densities printed on them. To apply, lay over desired area; burnish down area you want to stick with a smooth pen cap; cut and remove excess with an x-acto blade Screens can be bought at

drafting and stationery stores for about one dollar for a legal size sheet. Interesting effects can be achieved by using two or more of the same or different screens atop each other at various angles.

Screens Overlapped screens.

Most artwork from magazines and advertizements can be reproduced in your paper. As long as it is on slick, white paper and the halftones are screened (medium or coarse) there is nothing to worry about. If it is not on white paper, coarsely screened, or the right size, you could have it photographed to fit your specifications. This is expensive, however. Printed matter can be redrawn or traced with a scope or light table or enlarged or reduced with a pantograph (consult a drafting book on how to use).

#### HEADLINES

The most widely used product for making headlines (for small offset jobs) is transfer type. This is a sheet of plastic with a set of dry letter decals on its back. To transfer the letter from the plastic sheet to your copy, place it where you want it and rub with a pen or pencil. The letter will transfer and stick to your copy. To seal it permanently, burnish lightly with wax paper provided. Transfer type comes in a variety of sizes and several hundred styles. 10 x 14 inch sheets are available at stationery and drafting stores for about \$1.25 to \$2.00 each. Dots, arrows, symbols, borders, and other graphic accessories are also available on transfer type sheets.

Headlines can also be typed or hand drawn. Some drafting students may have or have access to lettering machines. The Wrico and Le Roy lettering machines make perfect gothic (sans serif) letters in a variety of sizes. Some machines do italics with variable slants. Proofs from regular printers' type can also be used. If you have friends at the school print shop or if you know a hobby printer, by all means inquire. Larger stationery stores will carry countless other gimmicks which do so-called perfect lettering

A paste up is simply this: a backing sheet or board with your typed (or typeset, if you are so fortunate) copy, illustrations, photos, and headlines lightly pasted on in whatever order you want them to finally appear. If you are planning to enlarge or reduce, check first to see if your platemaking facilities can do this. The size of your paste up should be the same as the finished product or the measurements of the sides should have the same ratio. Remember, however, that if

you are reducing, the typing will be smaller also.

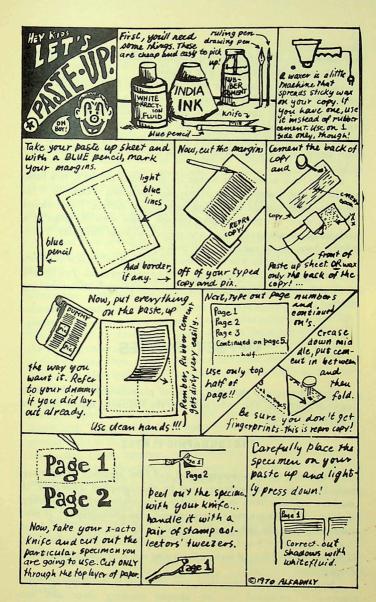
On your blank paste up sheet, with a blue-leaded pencil lightly make marks locating margins, etc. Lightly drawn blue lines will not photograph and need not be erased. Layout sheets printed with light blue lines may also be available. If so, they will save quite a bit of work. Next, carefully cut excess margins from typed and drawn material. Determine how much typed copy will fit on that particular page; cut, and apply sticky medium (later in text). Then place copy wherever you planned it to go (always have your dummy handy when pasting up). Next type and paste on page headings, numbers, dates, by-lines, continued on's, etc. Then add pictures and headlines. If you want a standard or bordered page, your artist should make blank ruled or bordered sheets before you paste up. We recommend that only one person be allowed to handle the paste ups. When not actually being worked on, the sheets should be behind plastic. This way everyone can impose his own ego upon them without getting them dirty. When the final decisions are made as to adjustments, the paster-upper then can alter the paste ups. Paste ups must be kept lean and flat at all costs.

#### STICKY MEDIA

If the paste up is to remain flat, the sticky medium must not be wet. Because of this, rubber cement and warm wax are much

preferred to flour paste, white glue, and mucilage.

If you are using rubber cement, as with mimeo correction fluid, it should be used in a well ventilated area and be tightly closed when not in use. An open bottle of cement or fluid can render your staff stoned in a matter of 30 minutes. When typing, especially, the fumes have noticeable effect. As with both white and blue correction fluid, rubber cement thickens and dries very quickly. Cement should be used when in a thin consistency, like snot from a freshly running nose. If it is too thick, mix in a little rubber cement thinner. Cement



costs about 50 cents for a small 4-ounce bottle; it costs much less,

however, when bought by the pint or quart.

Rubber cement should be applied thinly to both surfaces to be stuck. Allow to dry. Position cemented copy on cemented paste up sheet, when in the correct place, apply and burnish down. Excess dried cement should be rubbed off as soon as possible. It is a magnet for dust and dirt. Rubber cement can be applied to one surface and stuck before it dries. This is only practical when very small pieces are to be added.

If you have access to a waxer by all means use it! It is a little machine which warms a cube of wax and spreads a coating of it on the copy. Wax xhould be applied only to one surface. Place waxed copy on paste up, position, and burnish down with the edge of a triangle. It can always be lifted and restuck without difficulty. There is little chance that excess wax will pick up dirt.

Before you decide you've finished pasting up, white-out shadows and dirty edges of pasted-on copy with correction fluid. You should go through the whole proofreading schtick once again before making

plates.

# OFFSET PLATES

There are several different types of plates which could be used or your purposes. The order in which the following appear does not indicate preference.

#### PHOTOGRAPHIC PLATES

Your paste ups are photographed and film negatives of each are made. Line copy and halftones must be photographed separately. If you have a photo freak in your group, you might save some money by doing the work yourselves (see appendix on photography). If not, commercially made lithographic negatives for line copy cost about 75 cents for up to 5 x 7 inches; \$1.50 for up to 10 x 12 inches; and \$2.75 for up to 12 x 18 inches. Screening will cost about double the above prices.

Once you have the negatives, you will have to do stripping. Each negative is mounted on an opaque masking sheet and has

calibrations so the image can be placed in the most convenient printing position. After the negative is carefully taped onto the masking sheet (this is done over a light table) "windows" are cut in the sheet where there is image on the negative. Due to inconsistencies on the surface of the film, there will most likely be little pin holes close to the image. These can be corrected out with lithographers' opaque compound. Opaque should be applied with a small moistened paint brush to the front (shiny side) of the negative. The dull or emulsion side of the negative should be protected since any scratches in it will cause light leaks. The completed masking sheet with the negative is called a flat.

If you have fine-screen halftones in your copy, you must mount those negatives on a separate masking sheet. Be sure the position of

the image is correct relative to the other copy.

If you have access to a stripping area, you should do as much of the work as you can since commercial stripping costs about \$10.00 an hour.

The flat is placed over a pre-sensitized plate. Plates can be aluminum, sensitized on one or both sides, or paper with a aluminum coating, sensitized on one side. These are pressed betwee plates of glass or a glass-vacuum frame and exposed to bright light. The light will go through the image areas on the negative and harden the coating on the plate. The plate is exposed or burnt for a specified period of time; then, if there are any halftones, the flat for these is laid on the plate and burnt. The burning time for halftones is usually less than for line copy.

When the exposures are completed, the plate is gummed and developed (with 3-M type "R") until the image becomes visible in bright red. Then the plate is again washed with process gum to protect it from dust and scratches. Some plates can be run without developing. These, however, will deteriorate if not immediately run.

Commercial platemaking will cost (for metal and developing only): \$2.25 for 10 x 15 inch plates, \$5.50 for 11 x 17 inch plates, and 75 cents to \$1.00 for extra burns. You can save some money by using double-sided plates.

Whenever handling any type of plate, be careful not to dent or scratch the surface. Any inconsistencies in the coating will pick up

ink.

Photo plates can reproduce the finest degree of photo and detail work. If you cannot afford the finest, consider the other types of plates.

Instead of making a photo negative and then burning a plate, a photo-copier or similar device adapted for platemaking is used. The copy and unexposed, presensitized plate are fed in. A few seconds later the plate is delivered needing only to be gummed and developed. These plates can either be metal or paper with a metal coating. Coarse and medium screen half-tones can be reproduced.

The cost for having electrostatic plates made commercially is about \$2.50 for 10 x 15 inches and about \$5.00 for 11 x 17 inches

complete.

#### DIRECT IMAGE PLATES

Direct image plates are merely sheets of a special heavy card stock cut to fit on offset presses. They can be drawn on with special pencils or typed on with special typewriter ribbons. Any crease or

dent in the surface will also pick up ink.

We do not recommend using direct-image plates as they are very fragile and are easily ruined if the ink/water balance on the press is not exactly perfect. Some offices may use these for short-run circulars but for a newspaper of any sizeable circulation they are unfeasible.

#### ITEK PLATES

Itek plates are exposed electrostatically and do not require eveloping. They are not metal nor do they have a metalic surface. They are good for a maximum of about 3000 copies and take only coarse screens. The cost to have one made is about \$1.50 for 10 x 15 inches.

You might save money by having one place do photography, another the platemaking, and still another the printing. You may do some of these things yourself. If this is the case, be sure to check with your printer; his press might require a certain type or size of plate.

# OFFSET MACHINES

Unless you have had some experience with printing or something

similar, you probably haven't got the slightest idea of how an offset press works. This next section will not tell you how to operate a press, but it will help you understand your ignorance. Our brief explanations below are based on small offset presses. Larger commercial ones will usually have similar features.

If you have access to a press and you don't know how to run it, we'd suggest you consult some other sources as we could easily devote 20 volumes of twice this size to press operation. First and best, of course, is a set of manufacturers' instructions. The Department of the Navy also has an excellent publication out entitled *Lithographer 3 and 2* (Volume 2) which gives instructions for use of all major small and medium sized offset presses. This book also has a section on maintenance and repairs. Most printing textbooks usually give only generalized instructions rather than step-by-step ones for particular presses. Most libraries carry several textbooks; larger metropolitan ones should also have manufacturers' instructions. We suggest you study your sources well in advance of production day.

An offset press is actually two separate machines, a feeding system and a printing system. Most current machines will have a vaccuum or air feeding system. Some obsolete ones (you never know what you'll end up with) have mechanical feeding as we explained under mimeo machines. We've even run into ones with hand feeding

First, the paper is loaded onto a paper table. At the top of the pile there are air blast outlets and suction feet. The air blast will attempt to separate the top sheet from the ones below it; At the appropriate moment in the printing cycle, the suction feet will come down to the pile and pick up the top sheet. They will then guide it into the double sheet detector and eliminator. This device, adjusted to the thickness of your paper, will feel if more than one sheet is coming in at a time. If so, it will eject both into a special tray. Later these sheets can be re-fanned and re-stacked on the delivery table. If the paper clears the detector, it will move along the conveyor belt to the jogger or positioner. At that point the paper momentarily stops moving while the jogger positions it correctly in relation to the image on the plate. Then the sheet is pushed into and propelled through the printing mechanism and onto the delivery table.

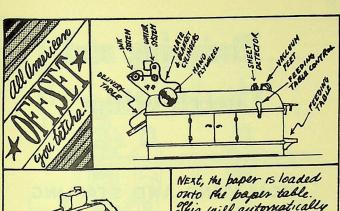
Some machines are equipped with chain delivery. Two small clips on a chain system will pick the paper out of the printing mechanism and stack and jog it neatly. A chain delivery table can hold some seven or eight reams while the normal delivery table holds scarcely a

50 ream.

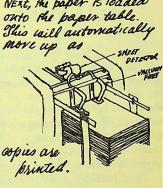
A. B. Dick and other small offset presses do not have the sheet detector and conveyor system. On these the suction feet pick up the paper and guide it right into the printing mechanism. These presses are designed so doubles should not occur. In practice, however, this is not entirely so. Advantages of the A. B. Dick models are extra speed in printing and less time spent on feeding system adjustments. A. B. Dick 350's and 360's are very popular with while-you-wait shops for this reason.

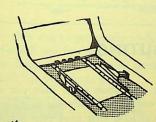
The printing mechanism consists of three basic parts: the plate cylinder, the blanket cylinder, and the impression cylinder. The plate of course, is mounted on the plate cylinder. The protective gum should be washed off the plate before printing and recoated after printing. A moistening system consisting of a water fountain and several rollers in contact with the plate cylinder will moisten the plate so non-image areas will not pick up ink. An inking system, consisting of an ink fountain and several rollers in contact with the plate cylinder, will apply a layer of ink to the plate. A correct balance of ink to water (fountain solution) should be maintained. Too much water will cause a washed-out image; too little water will cause non-image areas to pick up ink, called "scumming." Too much ink will cause set-off.

The ink on the plate will transfer or offset onto the rubber blanket cylinder. The paper is fed in between the impression roller and the blanket roller, hence, the ink image from the blanket roller is transferred to the paper.



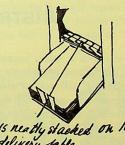






the jugger or positioner moves the paper into the correct printing position





is neathy stacked on the delivery take.

# Finishing and Distributing

# COLLATING AND STAPLING

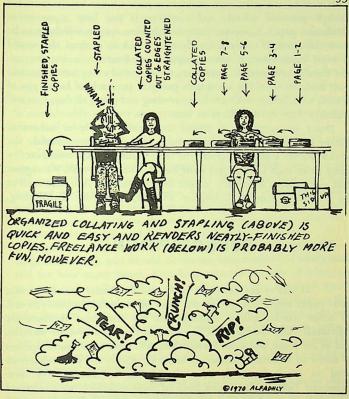
If you are using the 8½ x 11 inch (or similar) format, your pages will have to be placed in order and stapled. Collating is placing the printed sheets in order all facing in the right direction. Stapling, on the other hand, is the act of puncturing a thin wire through the sheets and bending it at the bottom to fasten them. To collate, you will need either a collating machine or several people. To staple, you will need either a stapler or awfully strong finger-nails. You might check, while collating, to see that each side of a sheet was printed, especially if the paper was mimeographed.

You probably want to work out some kind of an assembly line system since freelance collating and stapling lead to chaos and

confusion.

# DISTRIBUTING

If yours is a wide, maximum circulation paper then you will almost surely not be able to sell copies, especially the first issues. You probably will not be able to sell the first issue even if it is a small circulation paper. Be sure, however, to ask for contributions and provide convenient receptacles for them to be placed. Believe it or not, people feel more secure putting money directly into a container than into someone's hand (and possibly later into his pocket).



One way to get money while distributing is to sell copies to those who will pay for them and to give copies to those who won't. If you are doing this, you should print some kind of a notice or "booster blurb" on your front page.



TO GIVE BS.

CENTS
BUT WE DON'T HAME
TO GIVE BS.

CENTS
BUT WE DON'T HAME
TO GIVE THE PAPE

WE MOST ASSUREDLY WOULD NOT CONFIAIN (FYO) GALE HS...

NOULDN'T IT BE RIDKUIDS TO THINK THAT ME COULD GET...

If you have a minimum circulation paper, it can be disseminated through personal friends and contacts. If you have a maximum circulation paper, however, your distribution system will have to be more elaborate. If you can legally pass it out on campus, this would be most convenient. If your campus is off limits as to distribution, you should have people posted at entrances and exits during the time most students would be coming or going. If your school has a type of flexible scheduling, with students coming and going all day, you will probably have to distribute at least twice.

Don't be surprised if school authorities kindly or otherwise inform you that you cannot pass out your paper, even outside the school within a certain number of feet, yards, blocks, miles, etc. In many cases such laws do not exist but in others they will. We suggest that you contact a friendly lawyer organization in your area such as the National Lawyer Guild or the ACLU before distributing.

# SUBSCRIPTIONS

If you've got any heart at all, you'll consider the chance that your paper might not outlive the term of the subscriptions you sell. In other words, selling subscriptions for ten years is absoutely ridiculous. You should think in terms of three months, six months, and at the most, one year. Perhaps you will want to sell subscriptions in terms of a certain number of issues or merely tell your readers to send so much for each issue they'd like to receive. The New Improved Tide neatly evaded both of these questions. We advertized subscriptions at \$1.00 for a lifetime; 50 cents for a half a lifetime; 25 cents for a quarter of a lifetime, etc. Your subscription prices should include the price of the issue, postage, and perhaps a little to fatten the kitty.

Once into subscriptions, you will most probably be dealing with the mails. We won't waste space on postal rates since they are bound to change once or twice in the coming year. Contact your local post office; they're simply dying to send you two or three pounds of rate schedules.

First class mail is by far the best way to send your paper. It will cost a blanket amount for each ounce. Delivery usually takes one or two days. If your paper weighs more than one ounce, consider third

class mail. This will cost the same for the first ounce but considerably less per ounce afterward. Third class mail can take from four days to four weeks to get to its destination. Packets of papers over two pounds may be mailed fourth class (parcel post). Rates are based on the packet's weight (in pounds) and the number of miles it must travel. If you can convince the postal clerk you're sending a book, you can mail your packet special fourth class book rate which is considerably cheaper than parcel post. Deilvery time for fourth class mail takes from four days to forever.

Always mark mail as to what class it is to be sent. Third class should also be marked "printed matter" if there is any doubt. If you are enclosing a written or typewritten note, add first class postage and mark "first class matter enclosed." If you can have your mail metered instead of using stamps, it should get to its destination earlier since the postmarking step will be bypassed. If your single copies can be folded to about 4 x 9 inches or smaller, they wi

almost surely get delivered faster than if they were bigger.

Once subscriptions start coming in (and don't expect bags full or cards and letters), you should, or course, keep a record of who's paid and for how many issues. Also keep accurate records of addresses and zip codes. (Remember, zip code moves the mail!) A good bookkeeping method is to type out address labels as soon as the subscome in. Let's say John Q. Yip has paid for five issues; type out five address labels for Mr. Yip; each time an issue comes out, paste a Yip label on one copy, slap on a stamp, and send it off. Perhaps the last or second-to-the-last label should say something like, "send \$\$ to extend your subscription."

If your school has lockers, and the lockers have rectangular slots, you can save postage with in-the-slot subscriptions for students. Instead of putting an address label on the copy, just put a locker number on it. On the morning when papers are distributed (or perhaps a day before) someone can come in before school starts and shove subscribers' copies into their respective lockers. Most official school statutes will probably forbid this but then on the other hand ... You might also use a staffer's locker as a "mailing address." Beware though, of the chance some joker might pour turpentine or ditto fluid into your locker.

If you have copies of back issues lying around, you should advertize this in your next issue. Some people are natural connoisseurs and will pay for a vintage, mint set of just about anything. Don't

count too much on this, however.

We should also mention something here about having stores sell your paper (so we will). There is no law that says you can't ask around and see if stores will carry your paper. Don't be too outraged and dissappointed if everybody in the community thinks it's a "commie plot to corrupt our youth." The general policy, if you do get a shopkeeper to bite, is that he makes money off the deal fusually 50 to 100 percent)and, that after a certain period of time he has the option to turn back all the unsold copies to you for a total refund. Headshops and movement coffeeshoses would be your best bets. Hip capitalism, however, is surprisingly like the other kind.

# PRESS SERVICES

A press service is a group of newspapers who, through one central office share their ideas, findings, and possibly exchange copies of their papers. The only such service we know of for high school underground papers is CHIPS, the Cooperative Highschool Independent Press Service. To join, you merely agree to send a certain number of copies to each of your issues to the CHIPS office in Houston. There is no fee involved. They, in turn, will take your copies, with the copies from other papers around the country, and combine them into packets (containing one copy of each paper) and send these out to each member. So, in exchange for sending a certain number of copies of your paper, you will get copies of other high school undergrounds from which you, by the way, are free to reprint material. Packets are mailed out monthly during the school year. Members also get other advantages; for example, CHIPS can sometimes help members get free or low-cost equipment and supplies. Other services of CHIPS are a semi-annual directory of high school undergrounds and literature for new groups (like this booklet). The CHIPS office is located at 3210 Grace Street N.W., Washington, D.C. 20007. As of this writing there are about 50 CHIPS members.

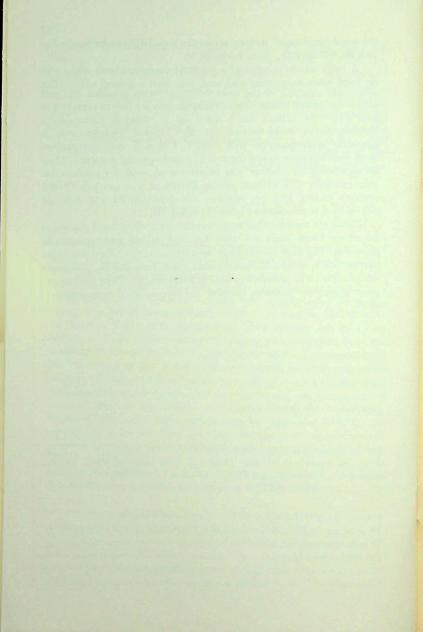
The Underground Press Service (UPS) is a much larger group and is intended mainly for larger papers. It costs \$25.00 to join. By joining you agree to send a copy of each issue of your paper to all UPS members. If this seems too expensive, you might write UPS and ask for a list of their members and exchange with a few papers on an individual basis. To do that, simply send a copy of your paper with

the word "exchange" written across the top. UPS can be reached at Box 26, Village P.O., New York 10024.

A news service consists of a group of correspondents who write on local news happenings and send that into a central office. The office will combine all the news stories, pictures, graphics, etc. and send them out to subscribing newspapers who are free to reprint it at will. FPS (the initials don't stand for anything in particular) a recently-started news service for high school undergrounds is operating in conjunction with CHIPS. FPS will send out packets every two weeks or so and the cost (for underground papers) is \$3 or \$4 depending on whether you contribute material for publication. You can join FPS without joining CHIPS or you can join CHIPS without joining FPS or you can join both CHIPS and FPS (or join neither if you want to be snotty about it).

There are several other news services for underground papers; as fas as we know there are none for high school undergrounds in particular. The best known large newsservice is the Liberation News Service (LNS) at 160 Claremont Ave., New York 10027. LNS sends out packets twice a week at a cost of \$20 a month. Their packets are quite extensive, covering national and international news events in

detail.





# Internal Organs

# APPENDIX: PRINTING INFO

# Printer's Type

Type is Measured in Points. a Point is 1/72 of an inch. 12 points of 46 inch is a Pica After 60 a 72 pc, type is measured in Picas.

This is 6 Point Stymie Bold.
This is 8 Point Stymie B
This is 10 Point Styr
This is 12 Point Sty
This is 14 Point S
This is 18 Point S

There are a myriad of different styles or "faces" of type, about 600 are known to exist

Albertus

Palatino

Palatino

Walbaum

Goudy Light
Goudy Light Italic
Goudy Bold
Goudy Bold Italic

any one style of type —an have several variations, as shown above. Extra Bold, condensed, and expanded types also exist. all type faces can be included in one of the fire classifications below

Janson — Roman

Edward — Gothic or sams serif

Dresident — Script or Curive

Cloister — Popular includes popular includes and ANTIQUE

faces

# Proofreader's Marks

Paragraph · seashore resorts an Long Island unve Let it stand modern shopping ( ster food restaurants a No Paragraph One hundred parks provide roo 20 9 ing, hiking, golf a they preserve spo wonders as Genese Transpose Falls are all in sta tr. in New York con Italics ut the country. I some states in t ince. The speed All Capitals Sweder Small Capitals s.c. Great Lower Case MASERATI Delete Driver licenses c York State provide old. Drivers under out-of-state senior Wrong style are New York juni (font) ing restrictions: su w. f. time in New York Period Canoeing vacationers through the Fulton ( dack Northway runs Defective area Exit 23 is south letter "Bridge of God," this tural Stone Bridge

1970 ALFADHLY

For information Spell out York State Conser Albany, N. Y. 12. new york private and public YORK STATE, is a of Commerce, 112 S Boldface A (free) directory bflee: available from the Association, Box 36 N. Y. 10021. Verify North Tarrytown, were h ters of an estate that some (25) miles along son's east bank, from Upside Duyvil Creek to the Crot Down A mock skirmish at Me is part or the annual 6 commemorating the Move Over -NEW YORK CITY Center INFORMATION Insert The Statue of Liberty wald form United States. New tourist attractions as History, the glittering Comma

Patrick's Cathedral and

A guide in the uniform explains the action at The Strange Monument Arnold's lone memorial.

at night / the Police

Arnold's lone memorial.

"In memory of the mother Continental Army wounded on this spowning for his coubattle of the America himself the rank of Mis

Space # Highschool

### SMALL INTESTINE:

# **PHOTOGRAPHY**

Those who are already somewhat into photography inight be able to adapt whatever basic knowledge and equipment they have to the production of their paper. This could include taking advantage of "special" circumstances such as being enrolled in a graphic arts or photography class in school. Extra-curricular projects whether they

are legitimate or not are always eductional.

Since most of your reproduction work will involve type or line copy you will need a special film which has extremely high contrast and exceptional exposure and development latitude, such as Kodalith Ortho, type 3, Estar base (.004 inches). This film costs 35 to 50 cents per 10 x 12 inch sheet and can be handled under a red or safety light with no problems. Since this is a special film, you'll need a developer like Kodalith developer which is a maximum contrast developer with a long tray life. Another developer that will work is Kodak HC-110. They both come in two gallon kits and cost about \$2.50. You will also need some stop bath (glacial or acetic acid, 3 percent solution, vinegar will also do) some fixer (Kodak rapid fixer), some trays, and a darkroom.

Since most of your copy will be 8½ x 11 inches or larger, you will need a large format camera. You should consider building one since finding a camera larger than 8 x 10 will be difficult and the price would be too high for any paper's buget. It's easier than it sounds; all you need is a few basic items to build a camera. First you will need a large lens. Since you will be using such a large format you will need a large lens. The best one for this is a 7½ inch Eastman projection astigmatic f4.5. This is an enlarging lens for an 8 x 10 enlarger but you can use it for your camera. It has diaphragm openings from f4.5 to f31. A used lens will run about \$25 to \$30 in a camera shop. Also try pawn shops, swap meets, etc. If you can't find one there you might try renting one. Any lens with a focal length of

300mm or longer will also do; you can use a telephoto lens from a 35mm camera if none other is available. Other items you will need are a cardboard box 28 x 15 x 12 inches or close to it, a sheet of 11 x 14 ground glass for viewing (this can be bought in a glass or camera store) and some lights (RFL 2 reflector floods).

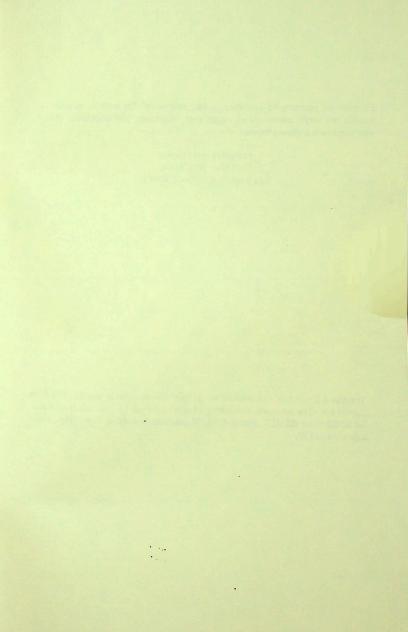
The construction is simple: cut a hole in the box the diameter of the lens and fasten it to the box, then mount some strips of plywood inside the box (half-inch square, about 14 inches from the back of

the lens).

This is a very simple camera and the reproduced image will be the same size as the copy. Try experimenting around by changing the strips and bringing them closer and further from the lens. This will

enable you to enlarge or reduce the copy.

The two lamps should be mounted at 45 degree angles to the copy. Exposure can be determined by test strips. A starting exposure of 23 seconds at f22 is a good basic time for same size work. After the film has been exposed move it into the darkroom for processing. The first step is to immerse the film in the developer, emulsion side down. The tray should be constantly agitated until the image has been completely developed. Over or under development will cause poor reproduction so you may want to use a gray scale. Immediately immerse the film after development in stop bath. After 30 seconds immerse the film in fixer. After two minutes wash the film thoroughly with water at 65 degrees, then hang to dry.



Since we are planning to publish a revised edition of this booklet as soon as possible, we would appreciate all suggestions, comments, and criticisms. Please send them to the address below.

Al-Fadhly and Shapiro 7242 West 90th Street Los Angeles, California 90045

The Third Edition of this booklet was printed for inclusion in the RESIST High School Kit. The entire kit, containing 14 articles for use by students is available for \$2.00 from RESIST, Room 4, 763 Massachusetts Avenue, Cambridge, Massachusetts 02139.

