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Printindia

A MONTHLY SURVEY OF THE GRAPHIC ARTS INDUSTRIES, PUBLISHING, ETC.



JAN. 1957

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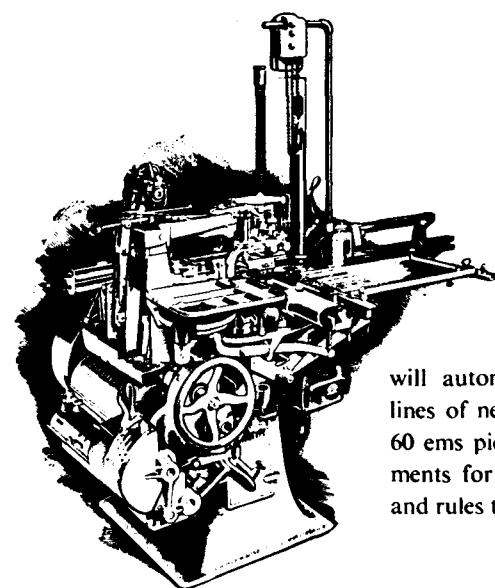
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MONOTYPE

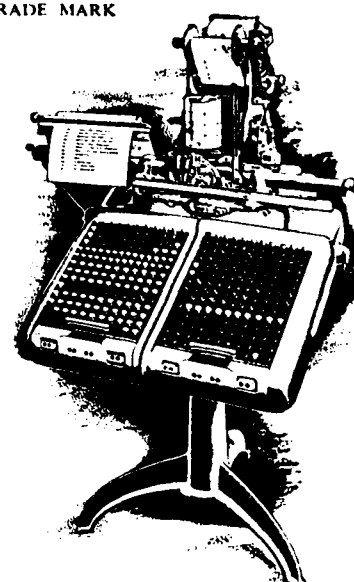
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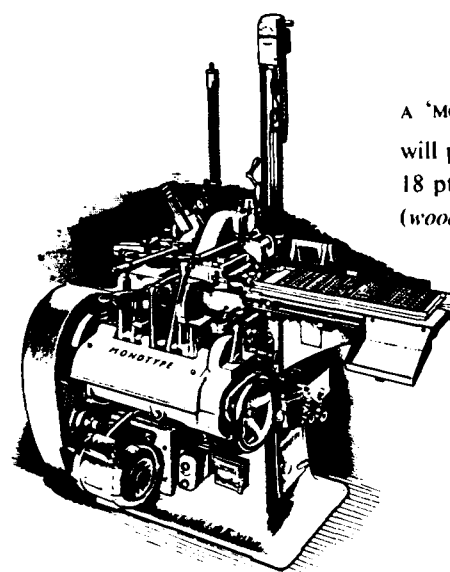


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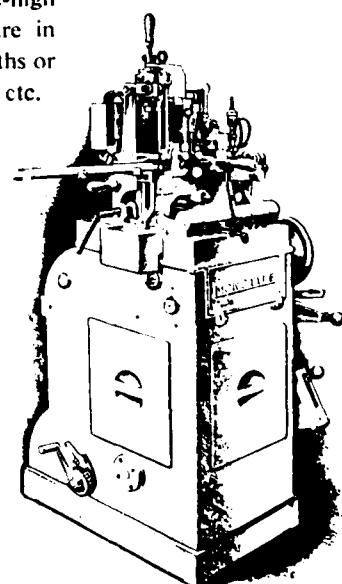
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The Editor invites articles on printing and allied industries for publication in the magazine. Articles should be of a good standard and should be neatly typed on one side of the paper only. Payment will be made after publication for the articles published as per the rates agreed upon by the Editor.

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In this issue MADRAS

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- ★ Layouts and Lettering
- ★ The Wet Collodion Process of Negative Making
- ★ The Anatomy of Colour
- ★ Voice of Type
- ★ Are You Feeding By Hand?
- ★ Cutting and Creasing Platens
- ★ All that Glitters is Bronze!
- ★ Electronics in Photo-Engraving
- ★ From the Editor's Pocket-Book
- ★ Regular Features

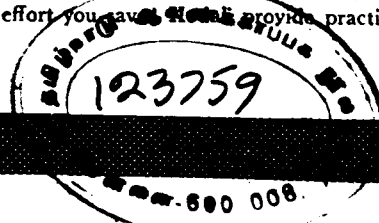
From Our London Correspondent
Pressroom Problems Solved
News & Views etc. etc. etc.

Printindia magazine sells throughout India and in many foreign countries. As a medium of publicity, its pull in the printing, publishing and allied trades is enormous. World famous manufacturers and advertising agencies have already been utilizing this magazine for high-potential trade publicity campaigns

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Put Kodak's world-wide experience to work in your process studio! Always use dependable 'Kodak' plates, films and papers — you'll be surprised how much time and effort you save. *Kodak* provides practical advice to help solve your problems.



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EDITORIAL

Planning FOR PRODUCTIVITY

India's National (Five-Year) Plans naturally allot the first place to production. Production, More Production, Still More Production seems to be the slogan. As printers, we feel that production should always be the most important thing to which all of us should devote ourselves.

The 20,000 printing establishments in this country may appear to be working two or three shifts. Their overtime bills may touch a phenomenal figure. Their out-turn may seem spectacular. Nevertheless, we should honestly own that not many of them are half as efficient as they could be.

Industrialists have recorded that only through increased productivity economic stability and a higher standard of living can be obtained. By higher productivity is meant *greater volume of output at lower cost*. This in short is the key to the recovery of Printing Industry in India. Unfortunately the printers' organisations here have done nothing about increasing productivity.

In India, it was extremely difficult to acquire new machinery. It has now been more difficult by taking off printing machinery from OGL. This, before we could recover from the shock of taking Newsprint off OGL. The reasons given by the powers that be are rather strange. The Government want to conserve foreign currency or exchange. Usually we are spending to the tune of 1.36 crores for printing machinery from abroad, every year. This is an insignificant fraction of our total imports. At any rate, the Govt. need not have viewed it with alarm. Now by restrictive licensing, they intend to conserve foreign exchange. The object of this unwise measure of the Govt. of India is not clear. According to Govt. sources, the licensing procedure will be liberal. And none will have any difficulty in getting licences for printing machinery which they want for their plant. If this is correct, then there is no point in taking the item off OGL. For, the volume of import is

not going to be restricted. The ostensible purpose of conserving foreign exchange will not be achieved. On the other hand, if Govt. are to apply the brakes to printing machinery import into India, the junk with which our presses are afflicted at present, will reign for God knows how long. That will surely be a reign of terror.

There are no manufacturers of printing machinery in sight. Of course, we bar a couple of firms who are in the threshold of experiments on platen manufacture. It also means that India will not be benefited by advances in the Graphic Arts Industry in Europe, USA and UK. In other words, this measure of the Govt. has put the clock back by a decade or more. During War, we could not get any equipment from abroad. Today, the Govt. ask the dealers not to import. No good will come out of such a hasty step. Even now, we believe that the Govt. will see their way to put back printing machinery in the OGL where it belongs.

Apart from modern equipment, there should be a scientific outlook. The management and labour should think in terms of increasing productivity. Only higher productivity can give us all a higher standard of living. While we naturally envy the sky-scrapers of USA and the mammoth factories and undertakings of Russia, we in India have never devoted much time or attention to the task of increasing productivity. As regards printers, they are oblivious of the true state of affairs of their industry.

SUGGESTION BOX

Employees should feel that their prosperity is linked up with that of the firm employing them. It is up to them to find ways of saving time, material and improving methods. In this connection mention should be made of some firms which have instituted "suggestion" programmes. Every worker has free access to the boss. He can put forward any suggestion to improve efficiency.

The management should consider every suggestion however trivial or impracticable it may appear on the surface. If a worker is timid and does not want to reveal his identity, a "suggestion box" is provided wherein the proposal for improvement can be deposited. This box is cleared daily, suggestions are carefully examined and good ones are adopted.

We often hear a cry for research for the printing industry in India. Research enthusiasts should be told that research is very good, but the cost outweighs the immediate benefits that can accrue to the industry as it stands today. No doubt the British Printing and Packaging Research Association has done much good to the industry. The Indian Federation of Master Printers should enrol itself as a member of PATRA and get all the details of their findings. In the USA, there is no research organization common for all letterpress printers. But much is done by private firms, as they are prosperous enough to foot the bills. The Lithographic Industry of USA has the Lithographic Technical Foundation which has done yeoman service to printing. But there is no parallel organization of that type in UK. India has much to do in modernizing her plants, cutting out wastage, speeding up production, eliminating waste motion and employee-fatigue. There are the problems of procurement of suitable raw materials such as paper, ink, thread, board, etc. Employer-employee relations have to be improved and minimum wages determined for each region. Leaving all these problems, research is a white elephant which the poor printers of India can ill afford at this juncture. The PATRA and LTF have brought forth many new techniques which Indian printers can profitably adopt, instead of waiting for our own research labs.

High productivity is associated with specialisation. Our presses are prone to accept any type of job from a tag to a poster, from a ticket to a voluminous publication, from a work of 100 copies to 10 lakhs of copies. This foolish policy of accepting any and every job that comes along the road spells ruin. "Specialisation" means the reverse of this. It presupposes that a press is tailored only to do a particular kind of job. Our printers are like the doctor who prescribes for all diseases and thinks he is a specialist in TB, ENT, Ophthalmology, Dental surgery, etc. etc.

There is a dangerous trend evident in India. This is of generalisation. Take for instance a

press of medium size in the south. It was an offset establishment. It printed labels, posters, showcards and all sorts of speciality jobs, such as varnishing, bronzing, cutting and creasing and what not. The management found, that they were consuming ink not in lbs. but in tons. They struck on a bright idea! Why not manufacture our own inks and save the margin between cost of production and the catalogue price? They imported costly machinery and made their own inks. To their dismay they found, that the inks were neither cheap nor good. The ruinous road to over-generalisation can be traversed only once in the lifetime of a printing establishment.

SPECIALISATION

Specialisation means that a press handles efficiently a few items or a certain class of printed matter. For this not only their men but also their equipment are well adapted. In short, specialisation means that a worker does only distribution, only composing, only imposing, only corrections, only feeding, only machine-work, etc. For smaller units the latter may not be feasible. Each press should select the class of work for which it is suitable and leave other classes of work for others. Thus presses will be complementary and not competitive to each other.

Finally we don't devote any time to planning the job. *Each minute spent on planning is equal to saving an hour in the composing, make-up or machine rooms.* Smooth flow of work is ensured only by proper planning.

To gather all these factors that affect production in the printing industry, a survey is necessary. This survey team should visit as many presses as possible in the country. They should collect all details essential to improve the productivity. These details should be collated, classified and examined by experts. Surely, if even then we cannot find the whys and why-nots of production, then surely we can count on the British and American experts to come to our rescue.

The team for productivity in the Indian Printing Industry should be composed of experts in every process as well as in labour relations and management techniques. It should not be constituted with a few high sounding personalities plus one or two sincere souls who will certainly be outshaded by the luminaries. Lastly there should be a genuine effort by all concerned to co-operate with the team, give all information and suggest improvements in our techniques.

LAYOUTS and Lettering

By

SRI RAMAKRISHNA NARAYANAN

Every kind of production requires planning. Printing is no exception. A well-printed work is only a well-planned print. In this monthly feature, outstanding pieces of publicity matter will be reviewed. The healthy criticism offered in these columns is only with a view to improve the quality of typographical arrangement as well as choice of type.

HAPPY NEW YEAR!

By the time this issue is in the hands of our readers, they would have gone through many a message wishing them a happy new year. To all these is now added another from this column:—

May this New Year usher in an era of better printing in our land!

SPATE OF LEGISLATION

In Delhi, the nation's capital, the Jamuna was in spate. But India's capital suffers from a spate of many other things as well. To mention a few, there is the spate of speeches from our politicians, of yesterday, today and tomorrow! There is the spate of explosions (not the verbal ones inside our Houses of Parliament) leading to the shake-up of the police force. Lastly, there is the spate of legislation passed on any and every conceivable thing: public, private, national and international.

A Bill providing for the formation of a Press Council, designed to preserve the liberty of the Press and to improve the standards of newspapers in India, was piloted in the Upper House of Parliament. (A fellow reader tells us that he had seen a prominent Madras daily having 3 lines upside down. He is vehement that there

should be a bill to protect the readers from such eye-wounding onslaughts!)

The Press Commission recommended the formation of the Journalists Wage Board and this is another interesting piece of legislation concerning the Press. The personnel of the Press Council is to be selected later, although quite a lot of time has been taken in the choice of a chairman. Finally, it was decided that the chairman will be a nominee of a committee of three, i. e., the Chairman of the Rajya Sabha, the Speaker of the

Lok Sabha and the Chief Justice of India. The Press Council would have moral powers to arbitrate and censure the erring ones straying from journalistic ethics. Also to study the development tending towards monopoly, concentration of control of newspapers, to promote research and provide services for the Press. These and others form the function of the Press Council, which is the subject of the bill before the Parliament. If proper members are selected for this council, it will certainly be a mentor, guide and a friend of the Indian Fourth Estate, wise, stern and just at the same time.

The Publications Division of the Govt. of India is one of those uneconomic ventures handled inefficiently from the printers' point of view. The booklet on "Naya Pisa" is ample proof of this fact. This booklet could have been printed far better, to put it mildly. But, the ways of the Government, especially one with a socialistic outlook in its mind and a nationalising attitude, are difficult to understand, indeed!

NEW CAMPAIGN BY NARASU

Keymers of Madras are handling a campaign for Narasu's Coffee. Containing brief words and beautiful design, the publicity material is top class.

"Narasu's" is the boldest of those appearing in the advertisement in Gill Heavy caps, the word "Coffee" following in Gill Bold caps. The words "Drink and taste the difference" after the pattern of "Fill up and Feel the difference" of the Burmah Shell, are in Bembo italic. There is nothing to beat Bembo in exquisite beauty and charm—and that is a



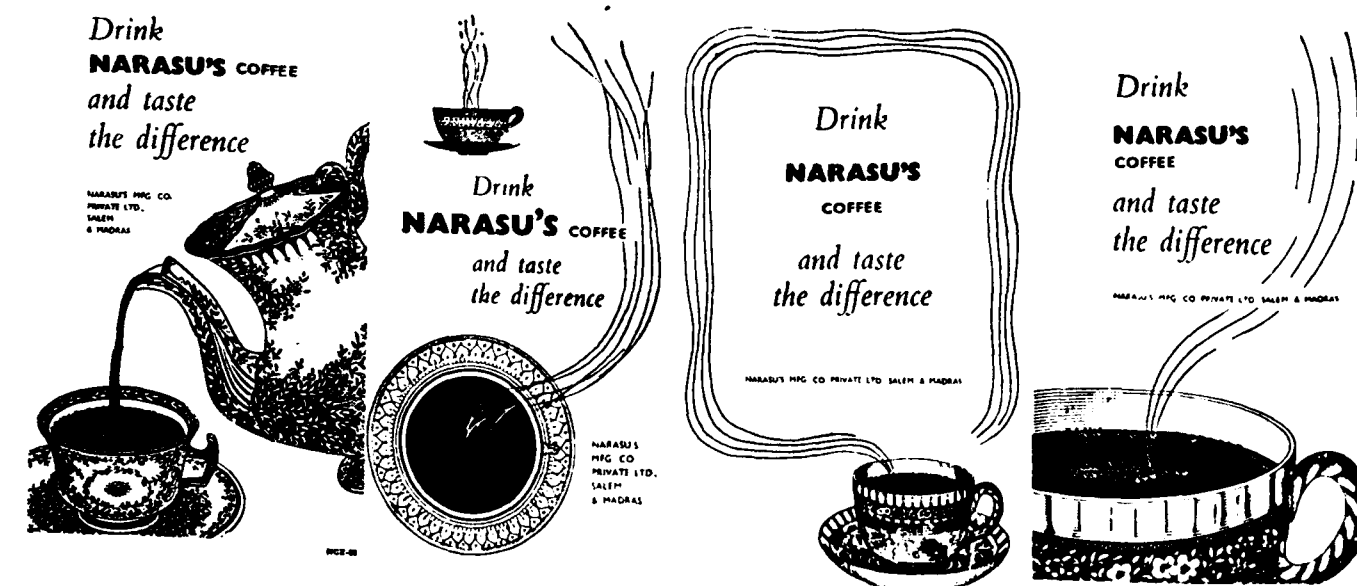
Here is (Miss) Hazeline!

Monotype face. The address line "Narasu's Manufacturing Co. Private Ltd., Salem and Madras" is in Gill medium caps in 6 pt.

Four of this series are reviewed here. It will be noted that all of them have the common pattern of typography, as if they form members of the same family, of course with suitable modification of illustrations.

In the first one, the china coffee pot a-tilt, pours coffee into the cup on the saucer. The coffee pot-cup-and-saucer are well decorated and lend a picturesque effect to the advertisement. This picturesqueness with the aptly chosen classic Bembo Italic make the series stand out of the advertisement pages and stay on in our mind as a tender memory.

In two, the lines are arranged left flush, i.e. the space left by the illustration. In three pieces the steaming aroma of the coffee rises from the cup and takes peculiar shapes. In one it forms a border, in others it forms a rhythmic curve to the right. In the second, the top view as well as full view in miniature at top are shown.



New and neat, Narasu's Campaign for Nice Coffee

In the third of the series the lines are centred inside the aromatic border.

To conclude a brief review of this beautiful series, the advertisements combine good art with excellent typography. This has resulted in such an arresting piece that even a tea-drinker like myself is forced to take a cup of tempting coffee!

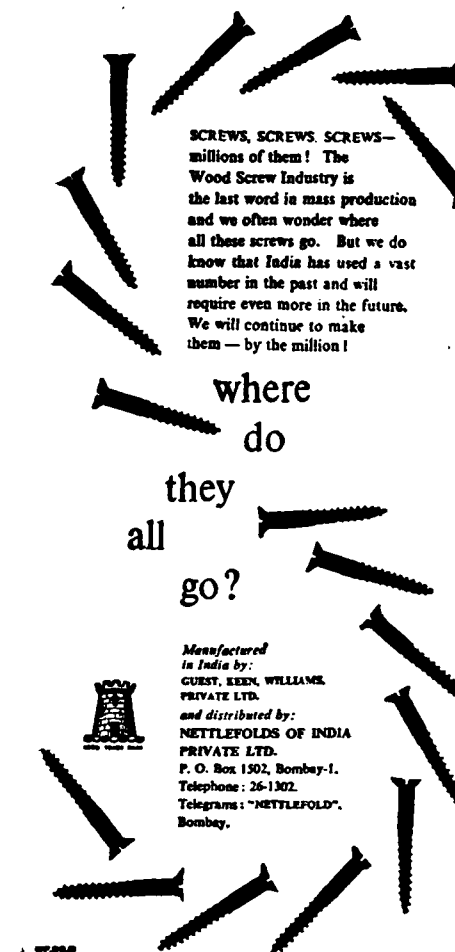
HAZELINE SNOW HITS THE HEADLINES

Keymers of Bombay/London have handled a striking series on Hazeline Snow. The rough brush illustration vividly brings to the readers the beautiful lady's face. Note the black quarter inch border which mirrors the publicity piece. In the space provided by the outline of the girl's garb "a more beautiful you" worked in bold brush script looks at us all. A carton of the beauty product with the Burroughs Wellcome insignia, the turbulent horse in neat silhouette are down below. The copy consists of five lines of Bembo italic of small size adequately leaded. These provide ample contrast to the bold brush script line. The words "Hazeline Snow" alone are in

quoted caps. Then follows the product's name in elongated Bold Caps. The words "Trade Mark" are in Gill light and the address line of the world famous Burroughs Wellcome & Co. is in Metro thin caps.

There are some significant points in this Snow advertisement. Note the border chamfered off at top middle to allow the head in full. The screened background at the top, the bold brush work for the hair forming the well brought out face, the brush script line, all these form the bolder elements of the piece. Beauty products are generally light subjects and Snow is no exception. The light thin small Bembo italics in irregular indentation with the address line in sans light—all these form the lighter element in this. The other members of this interesting series (not reproduced here) "I make sure" and "your type of beauty" maintain the same style, the same theme: The black and white contrast—a forceful factor in face-make-up products.

Then comes Messrs. Everest's "The things we make" for Messrs. Guest Keen & Williams. The piece



selected for review is representative of the quality of advertising done by Everest's.

Seventeen screws form the letter "S". The slogan in the centre asks "where do they all go?" in Times New Roman 24 pt. lower case. These words also are arranged in a sort of reversed "S" formation. The answer to the question posed in the centre is provided in the copy set in 9 pt Times, in left flush and right asymmetrical indentation, at top semi-circle of the "S". The bottom semi-circle contains the address lines in Times italic, Roman and bold. To the left in the bottom loop of "S" is the bastion serving as the trade mark for the firm of Guest Keen Williams.

For sheer novelty there is the "S" formed by the screws. The well-leaded copy and the slogan in the centre complete an effective advertisement.

STANVAC STANDS FOR PROGRESS

We have already reviewed the Burmah-Shell publicity pieces. Here we present one of the Standard Vacuum Oil Co.'s advertisements.

Messrs. Press Syndicate, Bombay have designed this advt. for Stanvac. Transport is the theme of this advertisement. Various modes of transport are represented in this piece, dominated by the bullock cart laden with a lady. At the back of the bullock cart is the silhouetted steam train. To complete, there is the Airliner atop, forming the head piece for this advertisement. At the left bottom is the Flying Horse emblem of the Stanvac, providing a fitting tail piece for this advertisement on transport.

There is plenty of white space in this prestige piece. The left flush lines of 8 pt Times Roman, liberally leaded are arranged to increase in length at right gradually and then at bottom half they are made to decrease gradually.

The hand-lettered Gothic for "Stanvac" with "the name stands for progress" is in Times italic. The address line is in Gill Bold Caps and medium caps and lower.

The harmonious typography contrasts with the silhouetted Bullock cart juxtaposed in the opposite direction with the train. The air liner is poised in the middle—and lastly the Flying Horse stands aloof and yet among the other elements in the piece.

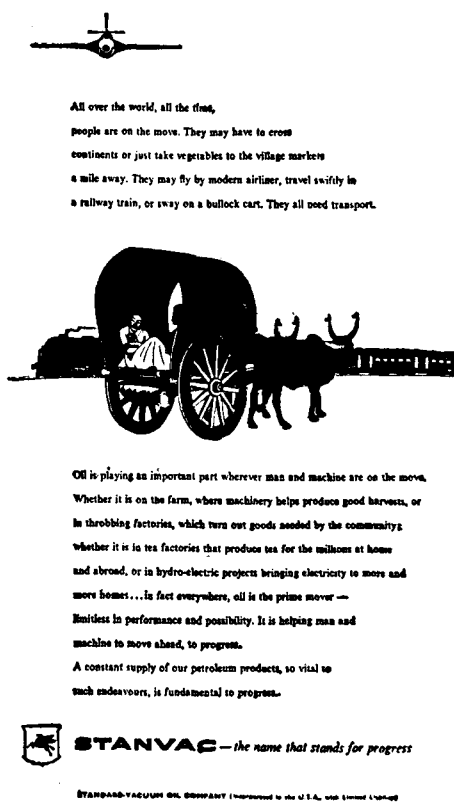
Here is a lesson for all on the presentation of Prestige Publicity campaigns. Indeed Stanvac stands for progressive publicity also.

Nowadays, the advertisements do not directly appeal to the buyers.

The copy does not ask in so many words to purchase the product advertised. Instead the matter takes a different line, an indirect effect on the mind of the buyer.

Consequently, what are called prestige publicity pieces have come into being. These deal with a subject of common importance to the country at large and to the public in general. Incidentally, the matter will also be concerned with the product the firm is advertising.

Viewed from this angle, Stanvac's handling of the transport problem and its progress, the presentation, the illustration are all superb. Neat typography, apt type faces, suitable sizes, wellspaced words and well leaded lines, careful employment of available white space, arrangement of the various elements—all go to make a display effective. The Stanvac series satisfy all these requirements and more. That is why we say "Stanvac stands for progress in Publicity too."



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SWADESI TYPE FOUNDRY

CHINTADRI PET

::

MADRAS-2

The Wet Collodion Process of NEGATIVE MAKING

By

SRI Bimal C. DATTA

Manager, Map Reproduction Offices, Survey of India, Dehradun

This well known authority here deals with the time-honoured method of preparation of wet plate negatives in a lucid interesting style, all his own

"Wet plate" photography has proved its immense usefulness in negative making for all mono-chrome reproduction processes. Nobody denies its limitations when compared with panchromatic high speed dry plates, but a block maker or a map or chart printer can only make his business more lucrative by using the wet plate.

The real originator of this process is Scott Archer who introduced it in 1851. It has not gone through many major changes although it is in use for more than one hundred years. As all the manipulations inherent in the process are to be completed when the plate is in wet stage, the process is called "Wet Plate."

new glasses must have their edges filed or ground to prevent cuts, then remove grease etc., with soda solution and then wash. All glass is chemically cleaned by soaking for 24 hours or more in a 5% to 10% solution of Nitric acid. Glass selected must be free from opaque specks, scratches, bubbles etc., and be as flat as possible.

After 2 days soaking in 5% to 10% Nitric acid, each glass is removed singly and is well scrubbed under a good flow of water, back and front and edges. When thoroughly cleaned, rinse and place in racks to dry, or they may be flowed on one side with a well-filtered solution of white of a fresh egg dissolved in 80 ozs. of water

to which is added 1 oz. of glacial acetic acid (or 15/20 drops of strong liquid ammonia) to preserve it. This coating is known as Albumen substratum, its purpose being to secure the collodion film to the glass. Instead of fresh egg, dried egg albumen can be used: 1½ ozs. to 1 oz. in 80 ozs. of water. Also thin gelatine substratum can be used if it is preferred.

FORMULA

Sheet gelatine:—22 grains or 2.5 grms.

Ammonia (.880) 40 drops or 4.0 cc.

Water (distilled) 20 ozs. or 1000 cc.

To make this solution, place the pieces of gelatine in a stone jar, cover with part of water, allow to soak for 15/20 minutes, then place the jar in a pan of hot water till the jelly dissolves. Remove the jar and add the remaining water, then the ammonia. Filter well and use when cool.

Substratumed glass should be placed in racks to dry in a dust free atmosphere, coated sides all facing in the same direction. When dry, they may be used at once, or stored face down in plate-boxes till required. They are stored face down in order to keep track of the substratum side.

PREPARATION OF THE GLASS

Selected sheet glass is usually used. British Patent Plate ("B. P. P.") glass is best, but is very expensive. Old dry plates can be used if the films are first soaked off in caustic soda solution or fairly hot water. All

RUBBER- EDGED METHOD

For work which has to be stripped, it is usual to omit the substratum. The clean dry glass, is placed on a clean sheet of white blotting paper on a level bench, or held in a glass polishing vice, and a little

Printindia

WISHES ALL READERS

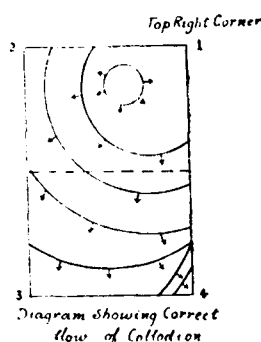
a Happy New Year

JANUARY 1957

methyalted spirit sprinkled on the surface; the surface is then polished with a pad of soft white tissue paper or "Josef paper". Next the glass is turned over and polished on the other side, there being usually sufficient spirit on the pad to do both sides without sprinkling a second time.

A second pad is now used to give a final polish, and then the glass should have a brilliant surface free from finger marks etc. Some workers add a few flakes of iodine to the spirit before using, but that is not necessary if the glass has been well cleaned in the soaking trough; if used, it should be made up fresh every few days, as an old solution is apt to irritate the eyes. Polish both sides thoroughly and remove from the blotting pad taking care not to allow the fingers to touch either surface (hold by the edges). Then with a small flat brush or tuft of cotton wool apply on edging of thin rubber solution about $\frac{1}{4}$ " wide. (Benzole-5 ozs. and Para rubber shredded 25 grs.)

If the glass is slightly bowed, the concave side should be used as the



film side. When the rubber is dry, the plate is ready for coating with collodion.

First give a few strokes with a flat camel hair brush to remove any dust on the back and front; excessive brushing electrifies the glass and so tends to attract more dust. The glass is held at the left hand corner with the first finger under the short edge, the tip of the thumb on the corner to balance the glass, fingers must not rest in contact with the surface of the glass.

Then steadily pour a pool of iodised collodion near the centre of the distant half of the plate, holding the glass level. Stop pouring when the plate is $\frac{1}{3}$ rd covered, then allow the collodion to flow slowly to the top right corner. (1), then the top left, (2) next towards the thumb; bottom left area (corner) (3) at the same time taking the top right corner in the finger tips of the right hand, and commence to rock the plate from side to side to assist the collodion to spread to the bottom right corner, (4) and drain off into a spare bottle, gradually bringing the back corner to a vertical position, rocking must be continued till drips cease, to come off freely; when all drips cease, nip off the thick corner and allow a few seconds for the coating to set partially. Test by tapping the thick edge with the finger tip when just setting and the plate is now ready to be sensitized.

(To be continued)

Read

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The Anatomy of COLOUR

By

SRI R. RANGA RAO

Colour enchants people of all clime and of either sex. Even animals have failed to escape the spell of colour. The modern world has begun to think that anything can be made attractive by a spot of colour. This article takes our readers to the dazzling world of colour.

Although sunlight was discovered long ago for anyone of us to remember when, it was as late as 1666, that Newton discovered the composition of sunlight. His discovery was called the "spectrum." When white light is intercepted with a prism of glass, the sunlight is broken into the following colours:—

Violet
Indigo
Blue
Green
Yellow
Orange
Red

The spectrum colours are reproduced by the printer with pigmentary colours. Specialists have subdivided these seven colours into more than one hundred and fifty colours.

WHITE

What we call white is nothing but the fact that complete white light is reflected from the surface of paper or other material. It also means that the surface has in the process of reflecting the light not absorbed any portion of the white light. Let us take the converse of the above, i.e., a case of total absorption. The above was, all would have noticed, a case of total reflection. When the

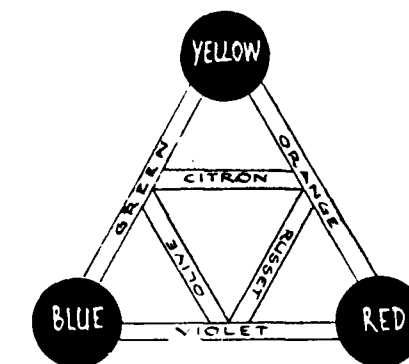
surface absorbs the light in toto the result is black. Between total reflection or white and total absorption or black there are many stages of partial absorption and partial reflection. That is how we get "colour." The particular colour depends upon which portion of the white light has been absorbed and which part has been reflected.

SPECTRAL PRIMARIES

Orange-red, Blue-green and Violet are the spectral primaries. From these primaries all other colours are made. Varying quantities of the above three will make every one of the other colours we know of. Thus yellow light can be made by mixing orange-red and blue-green lights.

PIGMENTARY COLOURS

For a printer the primary colours are those which, when mixed in



*Primary, Secondary and Tertiary Colours

certain proportions will yield all other colours, according to which two colours have been mixed. Therefore a pigmentary primary colour is one which cannot be made by mixing any other colour or colours. Similarly primary colours are those which when mixed yield all other colours.

The Yellow pigment can not be obtained by mixing any two colours. Same is the case with Red and Blue which are the other primaries. A printer never calls Black and White as colours, as these are neither primaries nor secondaries. They are only tinting and shading mediums.

SECONDARIES AND TERTIARIES

When two primaries are mixed, the resulting colour is a secondary colour. Thus we get orange by mixing yellow and red, green by mixing yellow and blue and violet by mixing red and blue. Equal parts of primaries will yield the secondary colour. The violet is also called purple. Equal parts of secondary colours mixed together will give the third order of pigmentary colours. These are called tertiaries. Orange and green will give citron, green and violet will give olive, violet and orange make russet. Citron, olive and russet are the three tertiaries.

TINT, SHADE, HUE AND TONE

A full colour is one which has not been admixed with any other colour. To a large quantity of white, if a small quantity of colour is added, the result is a tint. To a large quantity of colour, if a spot of black is added the result is a shade of that colour. Between lightest tint and the darkest shade, there are various degrees of intensity. These are called tones. If a colour is reduced to half its original strength it is called

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half-tone. This colour term should not be confused with the process engraving term halftone. The light tones of a colour can be obtained by mixing that with white in varying quantities. Similarly by the admixture of black to that colour the dark tones of the colour are obtained. Colour in its light form is termed *tint* and in its dark form *shade*. An opaque tint obliterates the background, while a transparent tint allows light to pass through and the background to be seen through.

When a colour is slightly changed by a neighbouring colour, it becomes a hue of that colour. Example is the admixture of a small quantity of green to yellow. The resulting colour is green yellow which is a hue of the principal or predominating colour yellow.

Under the Munsell Colour System which was originated by A. H. Munsell of U.S.A. the colours are classified and numbered for easy identification. Hue means, under the Munsell system, the principal colour, Colour Value means the amount of light reflected by a given colour and the intensity of colour is called Chroma.

Complementary colours are those that complete the colour circle by supplying the missing colour. The complementary of green is red, because, green has already in it the two primaries, yellow and blue. The missing primary, i. e., red completes the set of primaries to form theoretically black and hence is the complementary of green. Complementary colours are contrasty and the principle of complementary colours is applied in process camera work for exposing a coloured original into separate colour plates for printing. In colour schemes also, complementary colours are used.

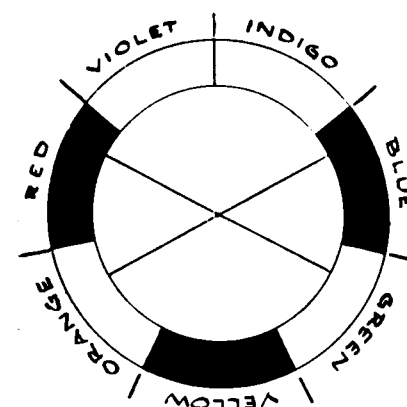
In Duplex Halftones or Duotones, the two colours used for the two blocks differently etched, one to be contrasty and the other soft, are complementary to each other, to ensure good results.

WARM & COLD

Colours having red in their composition are termed "warm" and those that have blue in them are termed "cold". Light colours are warm and dark colours are cold. A touch of black to a colour makes it cold and a touch of a colour to white yields a warm colour.

COLOUR MIXING

Although in theory all secondary colours are got by mixing the



Complementary Colours lie opposite each other

primaries and all tertiaries by mixing the secondaries, in practice however it is found expedient to use original dry colours to get secondaries and tertiaries in certain cases where mixed colours lack brilliance. The following tools are essential for colour mixing:—

- Marble stone, Litho stone or Plate glass,
- Minute scale for weighing colours,
- Two large palette knives and one small,
- Clean white sheet book,
- Solvents and brush for cleaning,

Colour chart suitably mounted.

The first rule of colour mixing is to keep the slab and the knives absolutely clean. Another rule to avoid waste of ink is always to add the dark ink in small quantities to the light ink. If we add the light colour to the dark colour, there will be a colossal wastage before we arrive at the desired colour. It is just like adding milk to water. When an orange is desired, weigh equal quantities of red and yellow and mix. It is easy to make a two colour mixture than a three colour mixture. Therefore, when olive is desired, do not try to mix yellow, red and blue, but take violet and green in equal quantities and mix together.

For making a shade of any colour it is necessary to add black to that colour, the shade of which is desired. For making tints it is necessary to add a small quantity of colour to white. In both the above cases, it should be noted that the darker colour in a lesser quantity is added to the lighter colour for avoiding wastage of ink.

If, to a base of red, white is added the colour *pink* results.

To a base of red if black is added we get *maroon*.

If orange-red is added to white the result is *salmon*.

To orange-red if black is added we get *yellowish brown*.

To orange if black is added we get *brown*.

If, to orange-yellow, white is added *cream* colour results.

To orange-yellow, if black is added, *russet* results.

If, to cold-yellow white is added the result is *straw*.

(Continued on page 34)



By
SRI DINA NATH BATRA

"Voice of the people is the voice of God" is being proved all the world over now. But the voice of people is nothing but the voice of type. When people of Hungary are in distress, it is through type we hear their woe. When Port Said is bombarded rightly or wrongly, the thud of the night-mare is heard through the weeping voices of type in newspapers. The magnificence of Melbourne Olympiad is again brought out through type. In this article the author has dealt at length with type faces and their voices, their use and abuse

TYPE HISTORY

It has now become the fashion for experts and others to talk loudly of Bodoni and Baskerville, Garamond and Plantin, Eric Gill and Stanley Morison, in public and go home to mix a pageful of hybrid faces to bring forth a *chouchou* or typographical cocktail in advertisements. These experts will trace Gutenberg's movable type, Caxton's first printing press in England, William Morris of the Kelmscott Press, ending with loud encomiums for Frederick W. Goudy. They are oblivious of the use of Old English, Old Style and Old Face, Transitional and Modern. Such occasional radio-talks are apt to confuse and confound our little knowledge of the history of typography.

Every man stands to learn much from history and the printer is no exception. If we carefully observe the development of type faces in the European continent, we have many lessons to learn in re-designing our Indian language type faces, while making wise use of English type faces. Mere quoting (or misquoting) of centuries, years, names, etc. will have no bearing on the present usage of type as we know it.

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type foundries have many forms of text or old English type faces. Some of them are:—

- Monotype Goudy Text
- Monotype Cloister Text
- ATF Cloister black
- Engravers Old English
- Marriage or Wedding Text

Old English types are available in heavy or light weight (i. e., thick or thin) and are useful for social printing, formal documents, diplomas, programmes, stationery headings, card and music printing, greetings. Old English, like the script, should be used only in caps and lower and never in block caps. If set completely in caps Old English type face is impossible to be read and presents a very unsightly appearance, lacking the unity necessary for reading.

When combining other faces with Old English type, the following faces may mix well: Cloister Roman, Nicolas Jenson, Garamond, Centaur, Bembo, Baskerville. It is a safe rule to mix Old English only with classic faces.

THE SANS SERIFS

Serifs are important parts of type faces and they help us in distinguishing one type face from another. If the presence of serif helps in identifying type faces, the absence of serifs also designate a class of type called "Sans Serif". The word "Sans" in French means "without" and Sans Serif types are those which are without serifs or thin lines at ends of strokes. Serifs are bracketed in Old Style faces and angular in Modern faces and an experienced compositor can easily recognize a type face from its serifs. More often serifs are the only things that separate one face from another.

Ludlow Society Text

ABCDEFGHIJKLMN OPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz 1234567890

Bauer Topic

Eric Gill designed the type face called Gill Sans which has become famous as a versatile face that can be used for newspaper and general advertising. It is a clean geometrically proportioned face and ranges from very light to the heaviest. It has also italics and will combine with any face and can be used for duplicating processes such as stereotyping, electrotyping or for reproduction by photography, offset etc. Its principal feature is the uniform thickness of the letter, which is a blessing for the machine minder. It is the thick and thin stroke which gives a headache to him during makeready, as pressure has to be manipulated to suit the weight of the character. In the advertising field Gill Sans is a popular face for airlines, men and women's wear, films, etc. But it is most used by the soap people, toothpaste and shaving cream business.

The Monotype Sans Serif was designed by Sol Hess somewhere during the 1930s and is available in light, medium, bold and extra bold. The Linotype Spartan is another sans serif face cut after Stempel's Neuzeit Grotesk. The Ludlow has Tempo, a sans serif face designed by Robert H. Middleton in 1930. The Intertype Co.'s Vogue is another versatile sans serif face, but differs from the foregoing in having straight strokes. The others have the strokes broadening towards the bottom. Vogue combines well with all classes of type such as modern, transitional and old style type faces. Vogue is popular for advertising women's clothing apparel, hotels and publications.

The Linotype Metro was designed by William A. Dwiggins, a noted

designer as well as calligrapher, illustrator and typographer. While other sans serifs suffer from an atmosphere of mechanicalness and stark simplicity, Metro has more personality and individuality essential for display faces if they are not to be lost in the surrounding space. Metro is known for its legibility, uniform weight of characters and angular terminals. Both feminine and masculine advertising can be handled with the aid of Metro. Thus Metro is used for industry on the one extreme and for women's accessories on the other, showing the range and versatility of its usage.

LINOTYPE faces are standard 123
Gothic No. 19

Spartan heavy

LINOTYPE is the standard

Continental faces have made much name and the Bauer type foundry of Germany and the Type-foundry Amsterdam are a few of the renowned firms. In 1926, it was felt that modern typography needed some type face of geometric design. Accordingly, Professor Rudolph Roch, a leading German designer of type faces brought out the type face known as Kabel. Kabel is considered as an epochal contribution to publicity printing. The foundry which brought this face is Klingspor Foundry, Frankfurt, Germany.

Modern illustrations with their severity and angular trend harmonize well with Kabel, which is a very effective face for advertising. Kabel resembles Monotype Sans Serif, in many respects.

Lucian Bernhard designed for the American Type Founders the face known as Bernhard Gothic, which is yet another Sans Serif face. With narrow and easy-to-read letters, Bernhard Gothic agrees well with Garamond, Janson, Scotch Roman.

ABCDEF G abcdefghijkl 123
ABCDEF G abcdefghijkl 123

38 Pt. Vogue Extra Bold Condensed with Oblique

Caslon and Bodoni. Bernhard Gothic is widely used for sports goods and building materials although it is equally effective for hardware or men's clothing apparel.

Jacob Erbar designed the sans serif face known as Erbar in the year 1926 for a German type foundry. Unlike the other sans serif faces, Erbar is non-geometrical in shape although monotone in weight. Erbar condensed is the answer of Linotype Co. to the demand for a non-mechanical, less-cramped but condensed face in the sans serif class. Erbar condensed is popular for machinery advts. and combines well with square serif faces and is available in various weights up to 144 points. Erbar Condensed is noted for its legibility.

The Bauer Type Foundry and Intertype Co. have brought out the sans serif face called Futura. Futura was designed by a Director of the Munich (Austria) School of Design by name Paul Renner in 1928. Matter set in Futura is restful to the eyes due to its even and modern appearance in mass. It harmonizes well with Bodoni, Scotch and Century. Futura is available in various weights and needs generous leading. Beauty products advertised in Futura are effective.

ATF	Linotype	Monotype	Intertype	Ludlow	Continental
Bernhard Gothic	Erbar	Gill Sans	Futura	Tempo	Futura
Spartan	Metro	Sans Serif	Vogue		Kabel



By
"DAWSON"

Readers of "Printindia" have evinced much interest in the series "Are you setting by hand?" The publishers are glad to present another series on mechanical feeders. Automatic feeders have not only come, but have come to stay. This series will discuss the development in the field of mechanical feeders

MAN versus MACHINE

Since the industrial revolution, there would appear to be a conflict between man and machine. This is only apparent. For, it is man's genius that has devised the machine. No machine, however automatic it may be, can do without skilful attendance.

The machine, therefore, cannot supplant man, but only supplement his work. Instead of man being machine's slave, he should always keep under control the machine, asserting his mastery over machine.

Thus there is in reality no war between man and machine. There is no fear that machine will throw millions out of job. On the contrary, machine has always afforded greater leisure and opportunity for the enlargement of the personality of man. It has relieved him from the drudgery of doing the same thing over and over again; it has achieved what man with his limited strength can not physically accomplish.

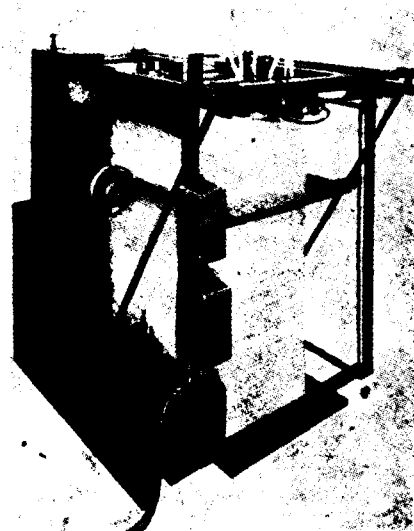
AUTOMATICS AND THE PRINTER

The printer has been confronted with many developments as in other industries. From the hand press in which the inking, feeding and delivery are manual, the platens came where the forme is inked mechanically.

Platens like the Falcon have the delivery alone automatic, relieving the treadlemen from the dual care of looking after feeding the sheet correct to the lays and taking off the printed sheet in time to lay the next sheet on. This anxiety to look after both feed and delivery naturally retarded production and resulted in some avoidable wastage. The Falcon is sometimes called semi-automatic due to the fact that the delivery is looked after by the machine once proper adjustments are made for timing the grippers and to suit the size of the sheet.

MECHANICAL FEEDERS

The advent of fast-running machines naturally revealed the



Pile Feeder

limitations in hand feeding. The press is as fast as the feeder can feed deftly. Large sheets created a strain on the feeder. The day for finding mechanical means for feeding has dawned.

The advantages of mechanical feeders are many and a few important ones will be touched on here. The first advantage gained by the use of mechanical feeders is that the speed of printing is greatly increased. From a mere 1,000 sheets an hour which is the average for hand-fed machines, auto-fed machines will print a minimum of 2,500 and a maximum of 5,000 per hour. In multi-colour jobs of long run the advantage will be much appreciated. The size of the sheet however large can be handled by the auto feeder. Thin or thick sheets will make no difference to it and the time consumed will be the same irrespective of the size or thickness of stock.

Greater accuracy of feeding can be got by mechanical feeders for man's skill is uncertain and never uniformly good. The production of mechanical feeders does not rise and fall as the day advances as in the case of hand-fed machines, but uniformly high throughout the working period. Thus better work, quicker work and uniformly good work is turned out. Long periods of continuous work can be turned out in continuous shifts.

Defects in sheet are detected and condemned without wastage. Sheets are cleaned by brushes before feeding. Auto feeder is cheaper in the long run as it eliminates the human element for feeding purposes. One man can look after two auto-fed machines.

CLASSES OF FEEDERS

Automatic feeders are broadly classified as follows: Those that take the sheet by friction and those by suction. Those that require the sheets to be placed in a pile and

those that require the paper to be placed in a stream or fan-wise. Thus there are suction and friction feeders, pile feeders and stream feeders. This classification is according to the way in which the sheets are separated, *i.e.*, whether by suction or by a blast of air. The second classification is by the mode of placing the sheets on the feed table.

All feeders have means to perform the following operations:

Separation of one sheet at a time either by friction or by suction or by a blast of air.

Convey the sheet to the lays and register it. There may be tapes and rollers or the feed may be a tapeless feed which is the latest trend in automatic feeder design. The tapes may carry the sheet astray with consequent loss of register. The tapes, further, sully or dirty the sheet, especially in multi-colour work. In tapeless feed the grippers never lose hold of the sheet until printing is over from the time sheet is first fed in, thus ensuring perfect register. The sheet never comes in contact with tapes, rollers or other parts of the machine.

Means for change of size and regulation of thickness of stock. Power for running the feeder and air for suction feeds.

Means to stop impression when a sheet is misfed, or a sheet smaller in size, or damaged. This is called cut-out and may be actuated by mechanical or electrical means; mechanical cut-out is superior to electrical one.

FRICTION FEEDERS

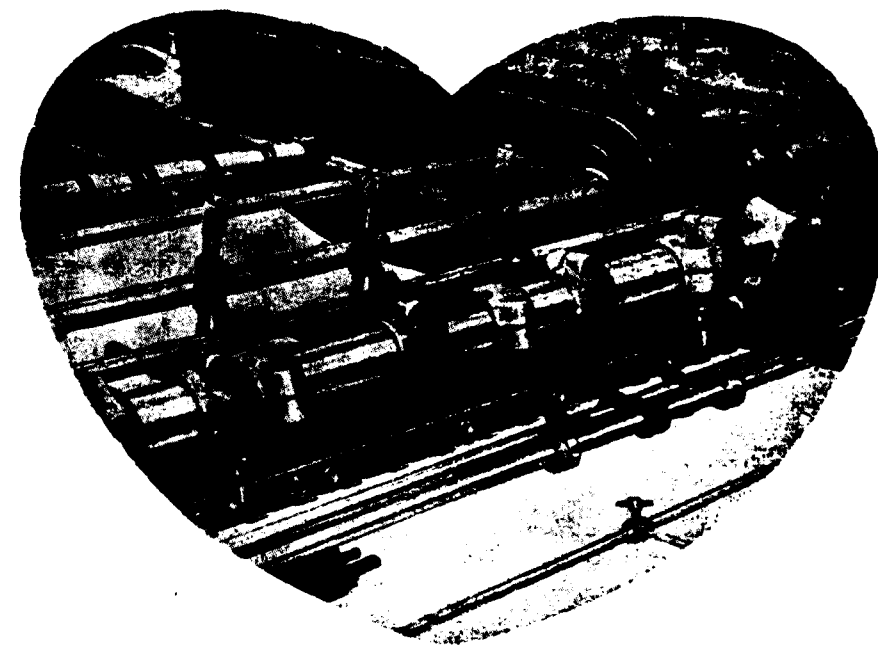
One of the earliest feeders to be invented are the Cross Feeders, continuous feeders or stream feeders. These do not employ any suction, blast or air to separate the sheets. The sheets are rolled out and the

feeder continues the fanning operation until the sheets are one inch apart from each other. The top sheet is then propelled by strokers on to runners and tapes. These carry it down to the lays.

In actual operation, about 100 sheets are fanned out and laid in position on the top board. The thickness of the lot should not exceed the height of the loader gauge. A sheet may be folded and the fanned sheets are laid in the centre with the help of the folded sheet.

The sheets thus laid on the upper board travel down to the lower feed-board by means of conveyor tapes. Combing wheels act upon the fanned sheet to increase the fanning or the distance between sheets. The movement of the conveyor is controlled by the combing wheels.

With the top sheet in position above the centre line of the drop shaft, the adjustable tail clamps are yet to fall and hold the back edge of the second sheet.



The patented swing gripper stream feed on the GMA TIRFING ensures dot to dot register. Each sheet is brought to impression cylinder with the same speed irrespective of machine speed

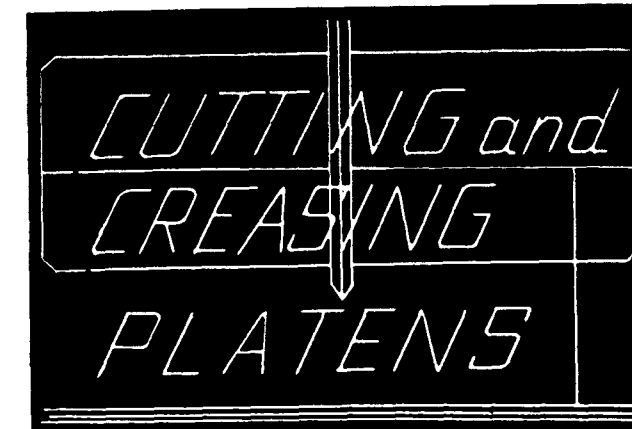
Drop rollers convey the sheet from now on. The sheet slows on approaching the front lays. Automatic front and side lays register the sheet.

There are trip fingers which will stop the machine, if the sheet has failed to cover holes in trip tongues. The trip mechanism is on a connecting rod.

The advantages of Cross continuous friction feeder are:—

As no air, suction or blast is employed a great variety of thickness in sheets may be fed by means of these feeders. Wavy stock does not present any problem as in pile feeders. The machine need not be stopped for re-loading as sheets may be added on to the fanned out sheets on top. Hence this feeder is called continuous. Until grippers take charge of the sheet, the sheets are mechanically controlled. Variations in sheet do not have any adverse effect on register. This is because register of sheet is corrected at gripper edge before being laid to automatic front and side lays.

(Continued on page 31)



By

MR. E. W. CHOPMAN

Packaging has become a highly specialised trade. There is a steadily growing demand for cardboard boxes, cartons and containers. The printer has to look at this phenomenon with an eye for economy and efficiency. Cutting and creasing work is dealt with in this article by the well known author

THIS WORLD OF SPEED

There is a craze for speed and rightly so. But that should not result in condemning machines which are still useful as a class. I am referring to platens. There are some people who think that the age of platens is past and the era of cylinders (automatically fed) if not of web-fed rotaries has begun. They also think (wrongly of course) that it is possible to achieve greater output with a slower cylinder than a fast platen. Thus the conflict resolves itself into "Platens vs. Cylinders."

Hand presses had limitation in hand inking, hand feeding, and hand delivery in addition to manual pulling out and pulling in the bed and bringing down the impressing surface. Platen presses abolished hand inking and manual pressing. The cylinder press although ushered in auto-delivery and a greater surface area for printing, and perhaps better printing, suffered from lack of pressure and the possibility of flexure of cylinder. Also, thicker substances are impos-

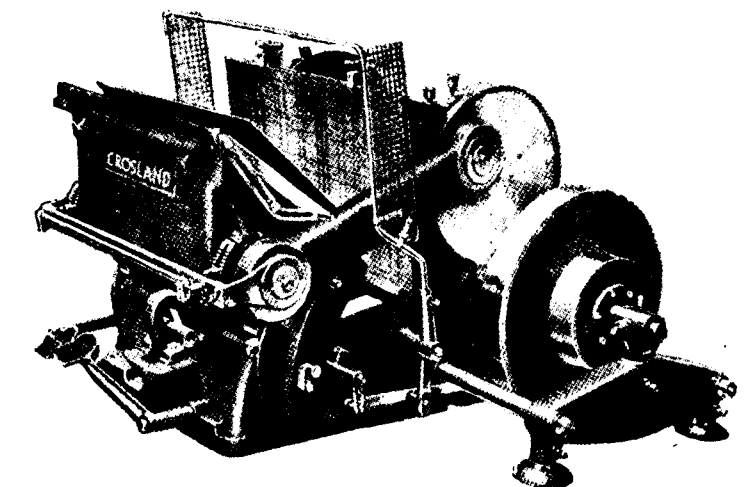
sible to be printed by a cylinder machine unless you want the stuff to be mangled and broken out of shape. Cylinder presses occupy more space, cost more, requires two people to run, consumes more power, costlier to maintain, whilst requiring a more careful makeready and an abler machine minder. Cylinder presses, therefore did not and will not supersede platen presses. Thousands of printing houses are happy with a solitary

platen or two, and they produce high quality work too. Further, for certain classes of work, platen press is a must: for example for printing photo mounts, album, cutting, creasing, etc. As the impression is got at one time it is easier and more effective to carry out cutting, creasing and embossing on platens than on cylinders. Special machines for doing these works are available and these are of the platen type.

The platen press produces hundreds of interesting items such as labels, letterheads, interview cards, invitation cards, forms and stationery, coupons, etc., besides cardboard boxes, die-cutting, embossing, and creasing work.

ART PLATEN

While some confuse the printing student by dividing platen presses into Direct and Clamshell, Direct clamshell and Clamshell with parallel motion and all sorts of artificial classification, let us leave these things to theorists and purists and call platens simply as light and heavy. The heavy duty or art platen was introduced in 1860 and has been growing steadily since then. Many novelty items such as footrules, cardboard toy items, paper or card bobbins, etc., are turned out more profitably by



Crosland Cutter and Creaser

platens. Even fabrics and knitted garments are printed by platens. The fact is such class of work does not fall within the purview of the cylinder. The platen press reigns supreme in the field of die-cutting, embossing and printing combined together. The first requisite for a heavy duty platen to do cutting, creasing and embossing work is sturdiness. Good bearings, bushes, gears and impression strength are needed for this class of work. The platen should be capable of being made ready to have the requisite pressure and nothing more. A 1/8 inch steel plate is good for such work, to be fitted to the face of the platen on the machine. This steel plate need not be feared of possibly spoiling cutting rules and other printing surfaces. Carefully made ready, the forme will have only "kiss" impression.

The die is generally made to specifications by a die-maker. There are machines in sizes of Double Crown & Double Royal (platens of course) for cutting and

creasing work. They have steel platens, steel driving gears, steel rocker seater, roller bearing pinion shafts and micrometer impression adjustments. Designed on modern engineering principles they are more productive and mores strong than the old fashioned platens. A great deal of makeready time is saved by the precision of micrometer impression adjustments.

There are also special Eccentric Action presses for this cutting and creasing work. There is a twin disc clutch and electro-pneumatic control for extra heavy jobs. The peculiarity of this machine is that you can either feed continuously or set it to stop after every impression for easy removal of the creased or cut sheet without being damaged or slipped. This stopping after every impression helps in extra heavy boards with a lot of cutting or creasing rules.

You may hardly believe that there are quad crown platens for this special work. Of course it is difficult to feed by hand, but nevertheless they are in use today and print at 1500 copies per hour. But they are exclusively built for speciality items such as embossing, cutting and creasing of heavy substances only. These are much used in the automobile and corrugated fibre industry. There are automatic cutting and creasing platens of very large sizes i.e., up to Double Crown which print up to 2400 sheets per hour.

CARDBOARD BOXES

Pulp-board and card-board boxes are used in lakhs for soaps, cigarettes, tooth pastes, tablets, medicines, toilet goods, etc. These boxes are made only with the help of platens specially made for cutting and creasing or scoring. Certain portions are cut, others are partly cut to ensure easy folding. The latter is called scoring. As most

of these cartons and boxes are first printed, many with blocks and in multi-colour, the printing industry is closely tied up with the fortunes of box-making industry. Box-making can be adopted even by the smallest press with a couple of platens. The profits are comparable with other types of work and the demand is on the increase.

GREETING CARDS

This is yet another field wherein embossing and printing can be combined to introduce novelty in printed matter. In India we have greeting cards for all occasions and festivals, being blessed with a multitude of religions and languages. Starting with a New Year Card (we have Tamil New Year, Telugu New Year, Malayali New Year, Gujarati New Year), we come to Diwali Greeting Cards, Id Mubarik Cards, Pongal Greeting Cards, Marriage Greeting Cards, Birthday Cards etc. Novel design, attractive colours plus embossing will increase the sales value of the cards.

PAPER TOYS & GAMES MATERIALS

In this country this field is yet virgin and yet unexploited and unexplored. A new toy or a novel game can be introduced by any printer with imagination. That will open up a great demand that can not be met with half a dozen presses. When we remember that playing card field in this country is a very lucrative one, we realise the potentialities in the games materials and paper toy manufacture. Here again platen presses are very useful for printing card-boards and cutting them into various shapes employing dies.

PUBLICITY MATERIAL ON THICK CARDS

Poster, window bill and hand-bill are the cheaper forms of publicity. These have now gone

(Continued on page 30)

All that Glitters is BRONZE!

By

SRI L. P. MISRA

Metallic Printing and metal foils are much in use today for packages, containers, covers and direct mail publicity pieces. In this article the author discusses bronze printing

QUALITIES OF A BRONZE SHEET

The various qualities that we look to on a bronzed sheet are: rub-proof quality, i.e., the bronze should so adhere to the medium firmly that it will prevent being rubbed off the paper.

The second quality is the smoothness and freedom from granular substances or uneven coating. The sheet should be brilliant in colour and free from loose bronze powder.

To obtain the above qualities there are some pre-requisites. The first is the stock or paper on which bronzing is to be carried out. Good lithographic printing paper is the best although enamelled stock is eminently suitable for bronzing. Bronze in its brilliance is brought in its best form only on enamelled stock. On rough sized stock or on offset paper, it appears to lose some of its natural brilliance. Therefore the choice of stock is important to get best metallic surface.

Apart from the smooth surface or quality of the paper, it is desirable that the substance also is strong. Otherwise the film of ink will not be lifted from the stone or plate.

Next comes quality of ink, which should be strongly pigmented with a strong varnish. Then only it will lie smoothly on the surface of the paper to receive metallic powder.

The bronze powder used should also be of good quality. It should be free from grease. A coarse powder is preferable as too smooth a powder will rub into the paper surface and also may stain the paper.

Finally the method of application of bronze powder should be clean and efficient.

Let us take point by point the above requisites. Printing paper is not bad for bronzing unless it is too absorbent when the brilliance may be dulled or the powder may not be held firmly. Too soft and absorbent enamelled stock is not good for bronzing. In such cases, the ink will not be lifted from the plate, it may break up and when it somehow lifts the ink, the varnish in the ink is so quickly absorbed by the stock that only a dry pigment will be left on the surface. The latter has no power to receive or retain bronze powder which is subsequently applied, with the result that it rubs off at the first opportunity of friction.

In order to get over the difficulty of not having chosen the right quality of paper, several expedients are resorted to, none of which will yield satisfactory results. One such is to slow down the drying quality of ink. The ink is reduced with a thinner varnish. Paste, glue, gold size, copal varnish, wax resin or other similar substances are also added to get the

same result. But such interference with the quality of ink results in ruining of the bronzing effect. The only alternative is to change the paper into a less absorbent stock.

Paper used for bronzing can be tested as to its suitability in the following way:

Press a wet finger on the coated stock and examine the finger. If it has some coating substance taken away from the surface of the paper, then the paper is no good for bronzing. Alternatively, fold a piece of enamelled stock and rub the pieces together. Examine whether any powdered coating material has fallen in the folded place. If the paper is hard and good there will not be any powdered substance and the enamel will be in tact in the folded place.

To test whether the bronze powder is too smooth or fairly rough, rub a little of the bronze powder over the thumb nail. If the nail is solidly coated with bronze powder, then it is far too soft. If the coating is open at places, then it is coarse enough. Far too a fineness will make it adhere to paper and it will be well nigh impossible to dust it off the stock. Good quality bronze powder from reputable manufacturers will be free from grease and naturally the price will be a bit high, but it is worth buying.

BRONZING MACHINE

Much dusting is done by hand, but there is danger to the health of the worker by inhaling the metal dust. The Factory Act enjoins that workers in bronzing shall receive special milk to get rid of the baneful effects of metal dust.

It is generally found that hand dusting is sufficient for small

FOR SALE

ONE JAPANESE MADE LATEST MODEL DARK ROOM CAMERA SIZE 24"x24", WITH WHIRLER, VACUUM PRINTING FRAME, ETCHING MACHINE.

★

The above machines are in up-to-date working condition, as new.

★

For Particulars write to:

PAREKH LITHO WORKS

32, Mogal Lane, P. B. No 6472 BOMBAY 16.

work, but machine may be necessary for long runs or for large work.

The principle of the bronzing machine is to pass the sheet to be bronzed through the machine by means of an endless rubber blanket. Alternatively the sheet may pass round a cylinder. In the case of the machine having a blanket, guide rollers carry sheet under the bronzing roller. From a duct, the sheet receives a finely regulated supply of bronze powder. There are two burnishers in this part of the machine which are clothed with plush and lambskin. These rub the bronze powder on paper. Two bands remove the excess powder off the sheet. Now the sheet is passed against a series of dusting bands and dusting rollers. The burnishing pads apply the powder while the dusting off bands remove surplus powder. The bands are cleaned by means of a brush against which they pass, at either side.

These burnishers and dusters can be adjusted for pressure according to the thickness of stock used for bronzing. Similarly the speed of the rubber blanket on which the sheets travel into the machine can also be adjusted. The above type of machine can be connected with a printing machine for continuous operation.

ANOTHER TYPE

In marked contrast to the above type of machine which has an endless rubber blanket to carry the sheet into the machine and burnishing pads and dusting off bands, there is another type of machine. The latter in essence resembles a printing machine in that it has a delivery cylinder, fliers etc. The bronzing rollers, burnishing pads and dusting rollers are mounted on the circumference on the cylinder.

The special feature of this type of machine is the suction box to carry the surplus bronze which is fed back into the feed box. The sheet to be bronzed is fed to the grippers and receives a supply of bronze from the feed box. The rolled bronze is rubbed in by burnishing pads. On the underside of the cylinder are the dusting rollers. The surplus bronze is removed, falling through a wire-mesh. The sheet which has been handled by the large cylinder so far is now taken charge of by the delivery cylinder. This cylinder has dusting rollers on top, which dust the back of the sheet.

The principal parts of the second type of bronzing machine are:—

The two cylinders, i.e., the main cylinder with bronzing rollers, burnishing pads and dusting off rollers arranged round it. This has its own grippers.

The delivery cylinder with a set of rollers for dusting the back of the sheet. These rollers are arranged round the top and the sheet comes printed side up, i.e., contacting the cylinder. The back side is free to be dusted off by the rollers.

Feed Box is the one supplying the bronze to the feed rollers. The plush-covered roller touches the sheet but sprinkles the bronze on the sheet.

The suction apparatus which sucks in surplus bronze through a cone and returns the same to the feed box.

AFTER TREATMENT

The bronzed sheets may not sometimes show the outline or borders of work printed with ink. For this, the sheet may be varnished with thin varnish after bronzing. Driers may be added to the overprinting varnish. Now any design may be printed as border or outline. Further,

the varnish serves as a protective coating preventing tarnishing of the bronzed surface when exposed to atmosphere.

Plate-glazing may be resorted to heighten the effect of bronzing. This gives a polish and brilliance to the bronzed surface. Plate-glazing can be undertaken only after the printing has become absolutely dry.

If bronze powder is seen adhering to unwanted portions of print, the ink might not have dried in those places.

THE PROCESS

An impression is first printed with a gold size. The preparation has adhesive properties and makes the subsequent dusting of bronze powder either by hand or by bronzing machine adhere to the print. Superfluous bronze is dusted off. The gold size preparation consists of a stiff middle varnish plus some earth pigment such as burnt sienna or burnt umber to which some gold size is added.

When the bronzed powder fails to stick to the printing, it means that a penetrating varnish has been used. In such a case change the varnish to a stiff one.

For printing the gold size preparatory to bronze dusting, ordinary platen machines will do with a hard packing on the tympan. There should not be excessive impression as this will lead to difficulties in dusting off bronze from the recesses. The machine is made ready with ordinary ink, as the gold size is quick drying and may dry on the work as well as on the rollers. The rollers used should not be green but well seasoned. Too much ink will cause blurring of the print and too little will not be enough to make the powder adhere to the print. Therefore the requisite quantity should be correctly judged.

(Continued on page 26)

ELECTRONICS IN PHOTO - ENGRAVING

By

Mr. JUDSON A. V. HYATT

Vice-President, Fairchild Graphic Equipment Co., New York

Can you imagine a thousandth part of a hydrogen atom? That is the Electron. More minute than the minutest heretofore known to science or scientist, Electron and Electronics perform the impossible in industry. For the printer, electronics corrects colour, checks register, scans engraving plates and does many other useful things. In what follows, an authority on Electronics throws some light on the work done by research institutions for the benefit of printers

These comments are being made to acquaint you with the work of ten research organizations—not just the one with which I am associated—Ten companies who are betting sizable money and effort that electronic equipment will become an intimate and everyday part of your operations. These ten companies are applying the technology of four nations on two continents in this direction because each has studied various phases of your present and future problems and all ten believe that photo-engraving will become more competitive and a better process through the adoption of electronic devices.

Because much of the research work done by these ten organizations is nearing the stage of introduction to your industry, the question of your attitudes toward electronic equipment has become important. You are, after all, the prospective customers—the one who will decide whether the magnitude of this investment in research for you has been worthwhile. Right now, I am sure that you face the use of electronic type equipment with mixed emotions, like the man who watched his mother-in-law drive over a cliff in his Cadillac.

Let us start probing your feelings on the subject of electronics in engraving by analyzing the changing nature of your industry.

You will hear a great deal about the competition your letterpress process suffers from lithography and gravure. You are formulating plans for an industry-sponsored research programme to meet this problem. You have, therefore, concluded there is a need for new techniques and new equipment which will permit you to do a better job than you are now doing, faster, at lower production costs, while maintaining a satisfactory margin of profit.

But have you also realized that you are part of a printing industry that is challenged by a broader form of competition - and serious competition? Printing is only one form of the vital processes of communication and education. Not so many years ago, spoken word and the recording of visual or written information were the only two possible means of communication. Telegraphy, telephone, radio, photography and television now compete with you to serve these communication needs of the world. It is, I believe, important, that we understand that at stake is the dominance of graphic arts in the visual communications field. The stake is no less greater than this.

A half-century ago, photo-engraving stood almost alone as a visual way of telling something to a large audience. Movies and film

slides rapidly became competitors. Little more than a decade ago, television was an infant. Today, it is a giant and definitely a competitor for many of the jobs previously done by photo-engraving.

We find film strips, film slides and movies taking the place of printed literature in employee training programme throughout industry. We find closed-circuit television in wider and wider use in schools, colleges, industry and professions such as medicine. Note how important electronics has been to this competitive development.

What can electronics do to reverse this trend away from letterpress printing and photo-engraving? The answer is, I believe, simple. Electronics can cut costs and increase the speed of service—both vital factors in true competitiveness.

The public will benefit as well. If colour plates and colour printing become sufficiently inexpensive, they will be used lavishly in textbooks, newspapers and other publications. Your industry will find a far greater market and for their part, readers will get much better information.

Do you believe there is hardly a newspaper or magazine in America that would not use colour, including ROP and fine screen four-colour, if they could afford to do so? The goal of electronics today and in the years ahead will be to make plate-making and other graphic arts processes more competitive—so much so that the public will demand more and more of your products.

With this background, let us probe more specifically into your attitudes toward electronics for photo-engraving. To do this, let me ask you some questions. Mull these over each of you please, and

make a fair evaluation of your own feelings.

1. *Do you fear the coming of electronics to your operation?* One might fear electronics because it is a new technology. You and your employees may feel that this complicated new science will cast away present skills, knowhow and understanding. If this is your feeling, let me say that to operate electronic equipment will require no more knowledge of the theory of electronics than the present production of plates requires a theoretical knowledge of photo chemistry. The necessary controls for electronic equipment will naturally be quite different. Their adjustments will be designed to aid in doing many of the functions already very familiar to you, such as creating dot values, tonal effects, contrast variations and so on. In other words, these are new tools for more efficiently applying the highly trained judgments and understanding of printing values that you now have. Looking upon the graphic arts field as a whole, the electronic devices have already been accepted widely and are extensively used. Here is a quick and by no means exhaustive list illustrating the valuable services that electronics are already performing in your industry:—

1. Automatic register control in colour printing.
2. Control of cutting machines on which printed labels are cut in quantity and in register.
3. Stopping of envelope machine in the case of mis-feeding envelopes flat to the gluing attachment.
4. Counters to indicate quantity of items transported to conveyors.
5. Photoelectric sorting of cartons on conveyor lines.
6. Controls for the side-to-side web motion during printing,

trimming, slitting and rewinding operations.

7. Register control of cutting machines for bags or wrappers.
8. Electronic light integrators to assure correct exposure of light.
9. Automatic positioning of the back gate of a guillotine cutter.
10. Reflection meters for measuring colour and tone to indicate any necessary change in ink fountain settings.
11. Reflection meters for maintaining colour standard regardless of light, temperature or humidity and dust content of the air.
12. Densitometer to measure the density of negatives and the reflection density of printed illustrations.
13. pH meter to measure the hydrogen ion concentration in etching baths.
14. Automatic splicers for splicing a new roll of paper into web.
15. Radioactive Beta Ray Gauge for controlling the thickness of paper in production.

2. *Is there a resentment or an unconscious opposition to such a major change as electronics?* This feeling is not unusual. In fact, it is to be expected and in common to almost all new technologies. Some of this unconscious opposition might possibly have resulted from the adoption by so many newspapers of our Fairchild SCAN-A-GRAVER. On this issue, let us all be fair and objective. Newspapers with their deadline problems have installed not only this equipment, but also captive photo chemical engraving plants by the hundreds. If this be so, why should electronics be any more resented than photo chemistry? A decade from now, I think all of you will agree that the widespread use

of our equipment has greatly strengthened the letterpress process in its competitive struggle in the field of newspaper communications.

3. *Is it your belief that electronics has been already tested and found wanting?* Yes, early models of electronic engraving equipment have produced disappointing results. Frankly, this has been true of some Fairchild equipment. But, isn't this experience common to most basic new processes or equipment? Electronics as applied to engraving is a basic new process. Almost none of the engineering personnel in any of the ten organizations mentioned here had any prior knowledge of printing and certainly little judgment in plate making. Only a few of the ten had any organizational knowledge of the Graphic Arts. We urge you to keep your mind open on this score. Evaluate objectively as these ten research organizations make progress.

Do you have the conviction that the advent of electronics in photo-engraving won't happen in your lifetime? To those of you who believe this, let me recite some facts. There are many more installations of electronic engraving equipment in U. S. and Canada than there are photo chemical plants. The Time-Life colour scanner today is supplying colour - corrected separation negatives to dozens of engraving shops in both the New York and Chicago areas as a commercial routine. In the near future, this service will be extended to San Francisco and other principal cities. Electronic engraving machines are now operating in over 40 countries. NEA-Acme is producing several sets of colour negatives a week on their colour scanner and regularly forwarding mats made from them to their newspaper service. Fairchild's colour system is in continual

(Continued on page 35)



F & D. BROWNIE

ACCURATE FORME MAKE-UP ASSURES REGISTER

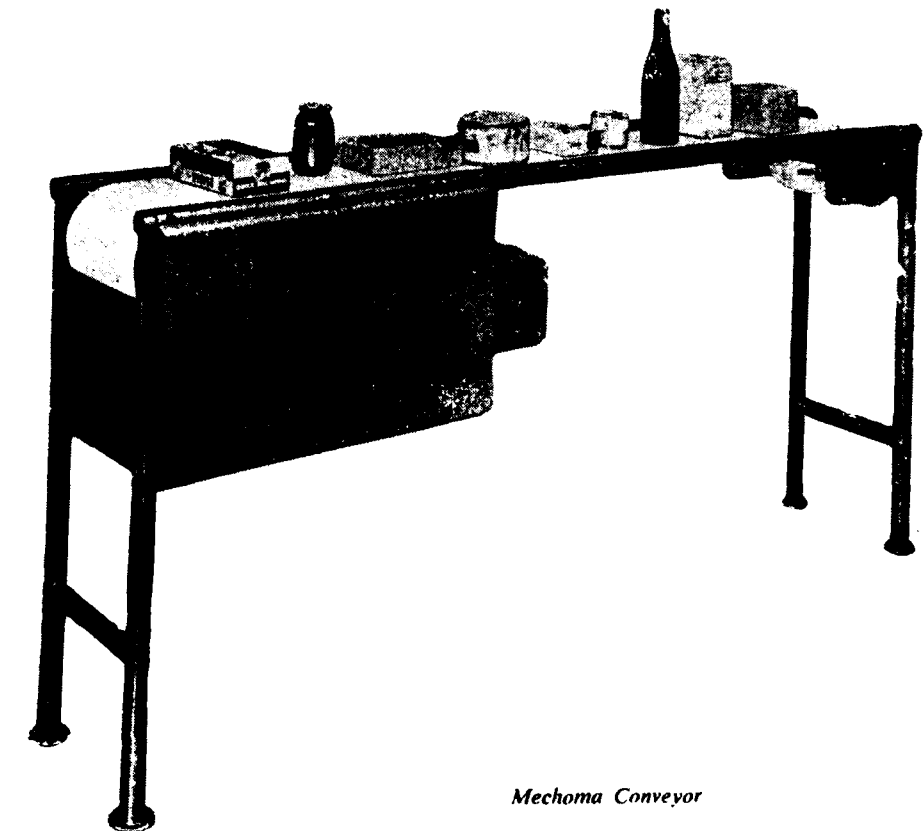
As stated last month, the latest pamphlets issued by the British Federation of Master Printers include one on "Forme Make-Up and Colour Register", and one on "Forme Transport". The latter deals with the transport of large and heavy formes from the imposing stone to the machine and from machine to storage.

The traditional method of locking up a forme and transporting it to storage and to machine, submits the forme and the chase to excessive stresses. In order to be able to lift a forme off the stone and to transport it by a 2-wheel trolley to the machine and to storage, it is necessary to apply considerable lock-up pressure to the quoins, which distorts both the line-up and the chase and nullifies any efforts to achieve a precise lock-up with accurate alignment of the printing elements in the form. In order to take full advantage of pre-make ready procedures which are calculated to ensure precise positioning of the printing elements while on the stone, and to preserve this during the printing cycle, it is necessary to avoid using excessive lock-up pressures.

For this purpose trolleys have been designed so that formes, when locked up with moderate pressure sufficient to enable them to be

where gangways are restricted. Floors should also be considered, as broken surfaces may be hazardous. The pamphlet describes several examples of forme trolley suitable for the general printer, including the tilting table and telescopic base, tilting table and fixed base, foundry or newspaper trolleys, and geared adjusting trolleys.

"Forme Make-Up and Colour Register" states that imposition is the assembly on the stone in correct sequence of type and blocks which are to be used in a forme. They may vary in kind, in source, and in degrees of accuracy. Adjustments on the machine are frequently made to these units until they are in alignment and register, and during this time the machine serves only as a correction bench and is non-productive. Modern methods and machinery call for a precision approach to the problem of ensuring accuracy of the forme before it gets to the machine, and



Mechoma Conveyor

the equipment described in the pamphlet is classified into three groups:— (1) Mechanical devices, (2) Colour register frames and bars, and (3) Optical devices. Mechanical devices include line-up tables, which are similar in general construction, having a heavy metal-imposing surface on a suitable stand, and portable line-up squares, the latter being somewhat less elaborate but very efficient equipment. These can be used on any imposing surface and are sufficiently light to be readily transferred from one stone to another. This permits maximum use of the equipment, as one compositor can assemble pages on one stone while another uses the apparatus on a second stone.

DEVICES FOR HAIR-LINE REGISTER

Colour register devices using films generally comprise an accurately squared steel frame or a bar with clamps for attachment to a chase or mounting base, secured to which is a sheet of heavy transparent foil, so attached that it can be folded back either by means of hinges or because of its inherent flexibility. However it be held, it is fixed in its relationship to the chase or clamp bar, so that it can be raised and lowered as required. On some designs of line-up table, provision is made for a foil sheet to be secured to the transverse sliding beam, so that the operations of lining-up and colour register can be carried through on the same equipment.

One of the latest types of plate registering device utilizing optical principles is in three sections, that is a sheet of plate glass supported in a frame, an imposing surface provided with clamps and stops to lock the chase or mounting base, and a frame carrying a semi-reflecting scanning plate suspended midway between the surfaces in such a way as to traverse the

whole forme. This type of machine can be used for laying plates or imposing pages for monochrome and colour formes, by using an accurately ruled sheet as the key print.

MECHOMA CONVEYOR

In many printing works a conveyor would be of great advantage, but position, length of time in use and cost rule out the use of a complex conveyor system, and handling by human effort still remains the only method, although also costly and in addition exhausting and time losing. Loma Metal Detectors Ltd. of London have now produced a light duty unit to meet this need, that is the "Mechoma" conveyor. This is of tubular construction, finished in glossy grey, has fixed or adjustable feet, and castors can be supplied which are also adjustable to compensate for possible uneven flooring that is often met at differing points in a factory. The drive unit is enclosed, the dust cover being quickly removed for maintenance purposes, and the starter control, though handy for operation, is mounted flush to the outer line. The operator is fully protected from moving parts, and important from the hygienic point of view is that all units are easily and quickly cleaned.

Extension units can be added or taken out to suit the conditions, and where a long run is concerned there is a centre drive unit available which can also be used as a booster. Units are joined by a simple extension connector, two Allen screws holding them firmly in position. By this means, lengthening or shortening of the line is done in what is comparatively only a few minutes. Guide rails, stop bars, side tables, counters, coders, transfer units and other accessories can be designed and fitted either permanently or detachable where

varied applications suggest. A number of standard conveyors are available, with widths ranging from 6" to 24", as a drive unit 2ft. long, a tension unit 1 ft. 6 inches long, and extension units as required from 1 ft. upwards.

STEPHEN AUSTIN MATRICES

It is understood that Stephen Austin & Sons Ltd. of Hertford are shortly to produce matrices made of aluminium alloy, which so far as is known has never been used before for this purpose, but has been chosen as a result of exhaustive tests carried out over a long period. It has been found that matrices of copper alloy, when used on single-type-casting machines with high pump pressures and type metal containing high proportions of tin and antimony, have shown a tendency to burning and erosion, and in some cases have become completely filled in due to the type metal "soldering" into the matrix. This difficulty can be got over by electroplating, but the firm have found the problem does not arise with the use of aluminium, which is particularly useful in making matrices of complicated crests, logotypes, and colophons where it is necessary to use high pump pressures and metal temperatures to bring out the fine line detail. In a typical test with the new alloy, 5,700 sorts 3 ems x 3 ems were cast from a matrix containing intricate detail, at a speed of ten per minute continuously, using 12.24 metal at a temperature of 750° F., with no ill effects whatever.

HUMIDITY AND PAPER

In the current issue of Dixon's Paper Circular, the house magazine of L. S. Dixon & Co., the well-known papermakers, some interesting information is given on humidity and paper. The amount of moisture, or humidity, that can

(Continued on page 33)



NEW KODAK DENSITOMETER

Films, plates and transparencies are used in reproduction. These need density readings. The new Kodak Densitometer Model 2 is very useful for this. The Densitometer consists of a head, a transformer and a base, forming one complete unit. Extra heads and transformers for reflection and ground glass readings are also made available as spares.

The Kodak Densitometer is a visual instrument. Its accuracy does not change and its readings are comparable day to day and month to month. It does not need warming up and hence always ready for use instantaneously. It is equipped with a six-foot cord and plug which can be coiled within its base for ease in shortage.

FOR TRANSMISSION READINGS

There are three uses to this Densitometer. The first is to provide density readings. In actual use, the head is used on or off the base to read reflection copy. The head with a separate transformer can be used as a portable photometer for reading ground glass images. The light from one light source passes through the copy, while the light from the other source through a precisely calibrated, continuous density wedge. The wedge is rotated in either direction until the intensity of the light is equal for both the wedge and the copy being measured. The reading is then taken from the wedge scale. Readings can now be taken right next to the eyepiece position. This Densitometer has an easily positioned filter bar with filters for colour work. The large base permits measurements to the centre of a 21 inch plate with the arm attached. By completely removing the arm even larger plates can be read.

REFLECTON READINGS

The head contains all accessories including illuminating lights for reading reflection copy with this densitometer. Larger copy can be read by merely slipping off. If the head is detached and plugged to a separate transformer and the integrating cap added, it becomes an easy photometer for ground glass readings. The total weight of the two components is less than three pounds. Copy of known exposure is selected and its density is measured to serve as a basis for comparison. The reading from ground glass image is now taken of any unknown copy. The figures are set on the Kodak Graphic Arts Computer and the comparative exposure can be found out. The integrating is supplied free. It gathers light from all directions and should be used for all ground glass work. It integrates the angular light from the lens of the camera, permitting accurate readings from spots other than the centre of the ground glass.

FROM COMPOSITOR TO GOVT. PRESS CHIEF

Have you ever heard of a mere compositor rising to the post of the executive chief of a Government Press? In Indian Democracy these things are hardly possible. To get into government press, one needs good antecedents. If they find out that he has been a compositor at any time in his life, he is debarred from being selected as executive.

Be that as it may, in the USA, things are different. An office boy can still become the top executive there, still. Therefore, A. E. Giegengack one time compositor became a Public printer (which means Chief Executive of Govt. Press). Recently retired from the printing industry, Mr. Giegengack is easily the longest served technician in Printing. His life spanned three Wars and no wonder he is considered as one of the printing industry's most outstanding figures.

All that Glitters is Bronze!
(Continued from page 20)

The fineness of the bronze powder depends upon the quality of paper to be used. Fine grain is preferred for smooth coated papers. On a hard and highly glazed surface, fine bronze adheres even in unwanted portions and it is a problem to clean them. Further fine bronze if carelessly applied, produces dark stains on paper. Coarse bronze will not adhere to unwanted portions and can be easily dusted off. For soft papers and porous ones coarse grains are preferred.

A cotton wool pad rounded to a convenient size is used for dusting the bronze powder. The pad should be renewed constantly as after some use, the cotton wool becomes damp and useless. On coated papers, the bronze should be applied immediately after printing as the ink has a tendency to dry quickly. On

ordinary printing papers, the size may take some time to dry. After bronzing the sheets should be left to dry undisturbed. Only then the sheets should be taken for dusting off the superfluous bronze powder with a silk handkerchief.

After bronzing the sheets may be hot rolled as this gives a burnished effect to the bronzed work. The bronzed sheets may also be fed through the printing machine to fix and flatten the bronzed work.

OVERPRINTING BRONZED WORK

Attempts to overprint with some colour, a sheet which is already bronzed, is bound to be difficult. If black is overprinted, it is bound to show the bronze background, as black is seldom perfectly opaque. A blue-black double rolled may successfully print on bronzed portions

The modern bronzing machine is a departure from old machines

in that it has a new system of recovering excess bronze, whereas in old machines an oil filter had to be used. Further, a suction device is now available for cleaning the machine free from old bronze sticking to the interior of the machine.

There is a fountain from which a grooved roller feeds to a bronzing roll. The latter applies the bronze to the sheet after which the sheet comes under burnishers worked by cams. The burnished sheets come now for dusting off of excess powder. There are half a dozen bands to accomplish this properly. The sheet travels on an endless blanket. Powerful exhaust fans draw off the excess powder. At the bottom is a cylindrical container which collects all the powder for use again. Four plush rollers dust both sides of the sheet again before the sheet passes out.

Dear Mr. Printer,

Have you any DRYING trouble?

When printed sheets do not dry, it could be due to any one of the following reasons:

- Paper being too acid or too absorbent or a combination of both.
- Over reduction of Ink (possibly to remedy picking).
- Use of wrong REDUCERS.
- Incorrect selection of ink for a particular paper.
- Insufficient drier in the Ink.
- High Humidity.

IT PAYS TO CONSULT YOUR INK MAKERS. THEY CAN SELECT THE RIGHT INK FOR YOU TO SUIT THE JOB AND THE PAPER.

Yours for Service,
The Technical Department,

**RAINBOW INK & VARNISH MFG. CO.,
(PRIVATE) LIMITED, BOMBAY-7**

News and Views

REGIONAL SCHOOL OF PRINTING, MADRAS

Not a month passes without some important printing personalities visiting the Regional School of printing, Madras, which has become the focal point for the attention of all Graphic Art Technicians in the Indian Sub-continent. *Printindia* readers are aware of the visit to the school recently of the Technical Mission of the Federal Republic of West Germany who very much appreciated the activities of the school. Mr. K. Jowett of the Graphic Arts Division of Messrs. Kodak Ltd., also visited the school and was all praise for the process equipment and the staff as well as the teaching methods adopted in the school. Many printers from all parts of India come to the school for technical advice and go with solutions to all their technical problems.

This month Sri K. S. V. Natarajan, Proprietor of Chitrakala Litho Works, Sivakasi, paid a visit to the school and spent some time going round the various sections.

Another visitor to the Regional School of printing, Madras was Sri R. S. Ramasamy, Proprietor of the Coimbatore Litho Works, Coimbatore. Sri Ramasamy was particularly interested in the training of offset artists plate-makers and printers.

Both the offset press proprietors are practical printers themselves and hence were in a position to judge and appreciate the important role of the Madras Regional School

of printing, which is doing yeoman service in the cause of the printers of India.

During December, the distinguished visitor to the Regional School of Printing was Mr. A. E. Talbot of the International Labour Organization. Mr. Talbot spent some time in each of the departments of the Regional School of printing, Madras. He appreciated the work of the School very much and the methods of teaching adopted in the school.

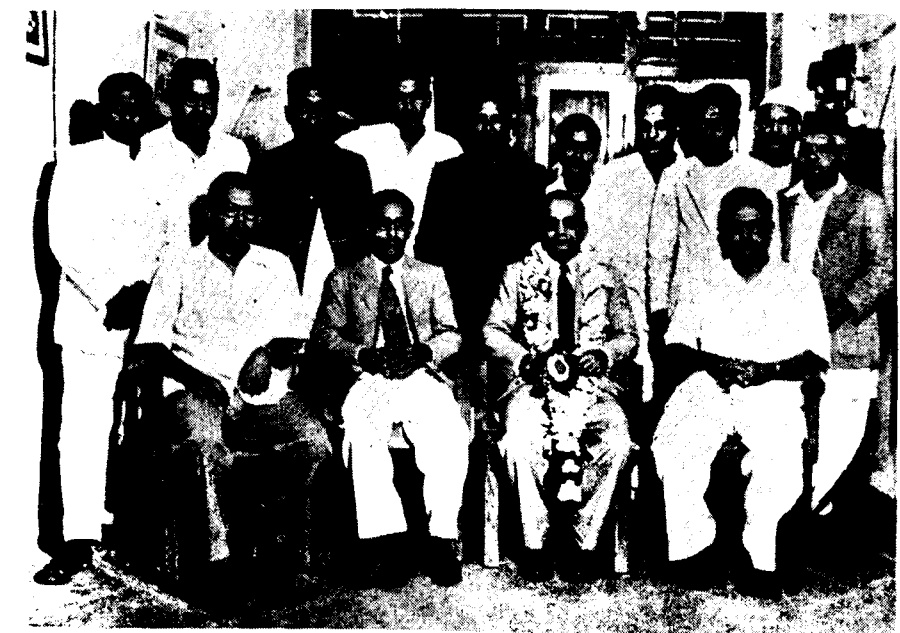
AFTER BANDUNG, TOKYO!

For the first time in the annals of the Printing world, a conference

of printers of all the Asian countries has been arranged. The venue is Tokyo, Japan and the time will be the middle of October this year (1957). This conference has been organized by the Japanese Association of Graphic Arts Tokyo, Japan. The time of the year chosen for the conference coincides with the best and the most beautiful season of this oriental country.

Printindia hopes that all the countries of the Asian continent in general and the Indian Sub-continent in particular will take an active part in bringing the deliberations of the first Asian Printers' Conference to a success.

GENERAL SECRETARY A I F M P'S VISIT TO HYDERABAD



SITTING: Messrs Bardapurkar, Subramaniam, Viswanatham & Nagan.
STANDING: Messrs Puli Mallikarjun, Ganda Reddy, Shankariah, Anna Rao, Narayanaswamy, Baday Sahib, G. S. Rao, G. N. Rao, Lahoti & Tonge.

JANUARY 1957

Conferences of this nature will promote quality of print and modes and processes of production while cementing the agelong connection of Asiatic culture among nations that are participating in the conference.

What Bandung was in the political sphere, Tokyo will be in the printing industrial sphere.

PRINTING INDUSTRY IN RUSSIA

In recent years the printing industry of the Soviet Union has developed on a vast scale. The total number of books printed is more than one milliard. This is 12 times the number printed before the revolution. By 1960 the target of one and a half milliard will be achieved. 820 million rubles are allotted for the deve-

lopment of Soviet printing industry. This will be spent in construction of new presses and re-construction of old ones.

A poster printing plant will print this year more than 150 million four colour posters. This firm is the Kalinin Multi-colour Printing Plant.

Another similar firm, the Yaroslavl Printing Plant will turn out in a year 555 million sheets and seventy million impressions of colour printing.

The Minsk Printing Plant will produce books in Bylorussian and Russian to the tune of 150 million impressions. The Saratov Printing plant will have an annual capacity of six hundred million

sheets. Each day 200,000 text books will be printed in this plant.

In the next five years about sixty large printing presses are to be built and equipped. The number of composing machines will be 2,200 and the number of printing machines will be 4,300. There will be 1,330 binding machines. 60 per cent more of paper and about 3 times more of cardboard will be consumed by the printing establishments during the plan period.

About one thousand million copies of books are produced every year in the Soviet Union. The largest ever planned book production unit will be the one at Chelyabinsk. This mammoth plant will produce over 120,000,000 copies of books and 21 million pamphlets.

PRESSROOM PROBLEMS

In these pages "Graphicus", an expert in the printing and allied industries, solves month by month Pressroom Problems of the printers. All questions may be addressed to "GRAPHICUS", C/O PRINTINDIA

SOLVED by *Graphicus*

129. Q. We have a huge order for printing on fabrics. The brand name has to be printed at intervals of a yard. At first we used copper blocks, but we find that these wear away after a few thousand copies. Can you suggest any other metal or method for printing on fabrics?

A. I presume you are printing the fabric referred to from rolls. In any case, I would advise you to have brass or steel dies cut or cast for your purpose.

130. Q. Tiny multi-colour match and cracker labels and similar work are our stock-in-trade. My press does at present only litho and offset work. But some of the experts claim that we can get a custom-built letterpress rotary made for the cost of a two-colour offset machine, which will do all the label work much more economically than by offset. The unreliability in offset plates which let us badly down and nobody knows what is the trouble about, has made us to try and experiment in letterpress rotary. Ours is a specialised label job in 3 or 4 colours. Can't we get a small size rotary made, say for holding 25 match labels with 4 colour units. As we mainly employ newsprint, they are available in webs. Kindly oblige us with your analysis of our problem.

A. Offset printing is undoubtedly the most economical method of printing large quantities of labels of the kind you refer. The fact that your plates let you down is entirely due to bad plate making, improper machine setting or the use of inferior inks. I agree that highly skilled technicians are very few and far between and my remarks regarding training facilities in a previous question apply here in the case of offset printing, even more than in regard to letterpress. However, to answer your

question about custom-built letterpress machines for such work, several manufacturers make machines especially designed to print labels from the reel and I am sure that any of these firms who read this article will contact you with details through our editor. I personally, make it a point to keep away from advertising any particular manufacturer or manufacturers in fairness to all.

131. Q. I have a bronzing job on hand. Can we use ready mixed gold ink or we can dust it with powder. Which will give brightness and which will be durable. I shall be grateful for your advice.

A. I personally think that bronze powder gives a brighter result than gold ink, the powder being immersed in the vehicle of the ink, tends to be a little dull in the resultant print.

132. Q. We have no varnishing machine. Can we use a gumming machine which is being offered for sale to varnish? What varnish do you advise to overprint on tri-colour prints as a protective and decorative coating? What for should we resort to spirit varnish? Can you recommend me a good make of varnishing machine? Will you throw some light on some of the latest laminating processes which replace varnishing and which by the way are brighter and more glossy?

A. A varnishing machine is quite different in principle to a gumming machine. I do not recommend using the latter for varnishing. If you wish to use a varnishing machine, spirit varnish is essential, otherwise you will need to overprint the gloss varnish on a printing machine with a Flat Tint Block. Laminating is not always practical, but if you are interested in purchasing either a varnishing machine or laminating plant I suggest you contact one of the big Machinery Dealers for complete details.

In the manufacture of Printing Inks

EQUIPMENT IS ALL IMPORTANT

THE FINEST INGREDIENTS AND SCIENTIFIC KNOWLEDGE
ARE WASTED IF THE MACHINES ARE WEAK OR OLD.
ONLY POWERFUL MILLS CAPABLE OF PRECISION GRINDING
CAN PRODUCE A REALLY GOOD INK

AND THIS IS THE IMPORTANT FACTOR IN

GANGES INKS

THEY ARE PRODUCED ON POWERFUL GRINDING MILLS OF THE
MOST MODERN TYPE. THE RESULT IS THAT THE PRINTER GETS

THE BEST QUALITY IN INDIA

Cutting and Creasing Platens

(Continued from page 18)

over to the offset and silkscreen fields. But much remains for the letterpress printer in printing heavy substances for window display, die cut in a particular shape and printed letterpress. Further, if these are to be placed on a table, easels (back supports) can also be die-cut on platens. Have you seen the "Mix a Milo" sun shades? These are die cut and were distributed in millions to Milo drinkers during fairs and festivals by the Nestles organization.

PRINTING RULERS

Scales, foot-rules, yardsticks, coat-hangers and other similar items of wood can be printed on platens. About 1/16 inch to one inch thick wood can be used for this purpose. While printing on wood of varying thickness, the platen is adjusted to accommodate them. The impression is type high but the thickness of the wood makes the difference. Metal plates or rubber plates can be used for printing on wood. Very high class foot rules can be manufactured on platens.

Those of us who have only seen platen presses handling plain printed matter or a tri-colour block should remember that platen presses have immense potentialities in the embossing, cutting and creasing field. If you want to cut cardboard to any desired shape or size, there is nothing like a die on the platen which does the job efficiently and economically. Many printers can take up this lucrative line of cutting and creasing or the manufacture of cardboard boxes and other items for packaging. In the years to come packaging is bound to grow up into a vast industry with specialists in the art and practice of cutting, creasing, embossing and printing.

DIE CUTTING

Die-cutting can be made with in steel dies or with steel rules fixed desired positions. Cardboard boxes are usually made with steel rules. If it is only an edge to be cut, rounded or patterned, high dies can do it. Inside the edges, these dies cannot be used and hence only steel rules give the answer. High dies are made with bevel on the outer side of the cutting edge. This bevel forces its way through the sheets which are to be cut at once when placed on a heavy duty press. The force exerted by the bevel bursts its way through the stock. If printed parts are too close together this force may work harm to other printed parts.

The steel creasing rule will be from .900 to .906" in height, but the cutting rule is over type high i. e., .923". Hard rule as well as soft ones are available for cutting and creasing. Soft rule is used for bending while using for semi-circular cutting or creasing. It will not break. But the hard rule although useful for only straight cutting will stay longer sharp than the soft ones, which lack temper. Steel rules may be built up to desired design with furniture and quads. For zig zag and semicircular or irregular patterns it is customary to use wood sawn in for the placing of rules. Strips of cork or

rubber are glued along the cutting line. These prevent the sheet from sticking to the forme after cutting or creasing.

After locking the die in the usual manner, a steel plate is attached to the platen and a tympan manilla pasted for guides. An impression is pulled on an ordinary sheet. No extra impression should be used as the steel rule is over type high. Any extra impression will bend and damage the steel rules. Their cutting edge will also be damaged. The impression is slightly increased until it is found on the sheet. The manilla sheet is cut in the impressed portions as the cutting is done on the steel plate. The forme is underlaid with tin foil under the rules. The forme is made ready with a spot sheet and if necessary with an overlay under the metal plate. Now the steel rule will cut one sheet at a time without ragged edges. Guides may be fixed.

To avoid difficulty in taking die-cut sheets from the press, a section of the die-cut portion is permitted to adhere which can be later on cut. Alternatively the cutting steel rules are nicked in certain places. Now the rules will not cut the entire portion but will retain some portions.

Die-cut jobs are difficult during delivery on a cylinder machine.

COUNTING MACHINE

A Machine for counting paper and bank notes is said to be capable of counting over 4½ lakhs sheets in an eight hour day. The makers have supplied to and have orders for over 20 overseas countries.

Are You Feeding By Hand?

(Continued from page 16)

There is free access to the cylinder for makeready, as the feeding portion can be raised and run back. The type bed is equally accessible for forme corrections and lock up. The feeder can be disconnected for hand feeding. Even small runs can be handled by this automatic feeder.

The cut-out is a positive device to stop the machine where a sheet fails to register, or two sheets arrive together or when sheets are not delivered properly.

These feeders are simple in construction and easy to operate and occupy very little floor space in addition to the normal requirements.

BACK SEPARATION HTB

There are feeders in which the top sheet is separated by a blast of air at the front or at the back. These are called "front separation" and "back separation" feeders respectively.

The HTB is a back separation type. Naturally the separation is by suction and an air blast. There are two combers at the back corners which separate the sheet. This is helped by a blast of air while it is being lifted by a sucker. The top sheet is thus set afloat and taken charge of by four elastic suckers. At the bottom of the released sheet, the rest of the pile is taken care of by two blower feet.

In HTB feeder, waviness and inaccurate piling do not affect feeding. The combers at the corners separate the sheet even if there is static in the pile of sheets.

After separation as outlined above the sheet is conveyed by tapes to the cylinder grippers being perfectly registered. By the time the first sheet is taken by the grippers the third sheet is being

separated. Thus there is ample time for separation and register of sheets.

While one pile is being fed from, a duplicate pile is made up, so that no time need be wasted after completion of one pile. Motor and pump for air blast are supplied with reinforced rubber tubing for fitting in any convenient manner desired. The automatic feeder can be hinged off for access to cylinder.

In this the cut-out stops the sheet before being fed to the grippers if it is a damaged or misfed sheet. The machine need not be stopped but the held up sheet can be removed by the operator when impression will be on again.

ELLESS FEEDER

This is a popular feeder for offset machines like the ATF Chief. In this separation begins at the back edge as soon as the sheet has moved forward about three inches. There are two suckers which turn up the back edge of the sheet. A current of air is directed downwards to hold the next sheet from clinging to the top sheet, and being lifted with it. While the sheet is being raised a little further, three blasts of air, one straight and the other at the two corners are given. Two suction nozzles take charge of the sheet thus separated and carry it forward on to the rubber rollers. The latter convey it to the front lays slowly.

In Elless feeder large sheets have comparatively less distance to travel. The usual slow down motion is not therefore necessary as it is itself slow. A Quad Demy sheet usually has to travel 40 inches forward, but in Elless feeder it has to travel only 10 inches. As the feeder is a back separation one, the separation can take place immediately the top sheet goes forward. There is thus ample time for separation before the forward movement commences.

Alterations can be made while the feeder is in operation. The separating mechanism can be moved as a whole block, by means of three screws. There is a hand nut for adjustment of side lay. There is also an effective cut-out mechanism which trips the impression when a sheet is misfed, or when two sheets are fed or in the case of a damaged sheet.

CAMCO FEEDER

This is a friction type continuous feeder and the sheets have to be fanned out. The sheets are rolled up in small lots and laid against the stack board, with gauge aligned with the side lay. There are broad fabric bands which convey the sheets round the cylinder. During this movement further separation is effected. The sheets arrive at the lower feedboard with the first sheet under the comber. The combing wheels further separate the sheet until the first sheet touches the detectors.

Only about a dozen sheets are under the combers at a time. In

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such small quantity, even wavy edged paper and uneven piles lie flat. The detectors or cut-outs raise the combing wheels. A rubber top falls on the next sheet thus arresting it. Two rubber rolls convey the sheet to the front lays. The speed of approach to the lays is adjustable. The sheet arrives at the front lays very gently. There is no jerk whatsoever when it is drawn up to the side lay. Meanwhile the combing wheels have dropped down to the second sheet which is under way.

If no sheet comes forward or in the case of a damaged sheet there is a trip mechanism which goes into action. There is a twin feeder adjustment by which two sheets of different thickness and size can be fed simultaneously.

L & M FEEDER

This is a front separation feeder. There are tubes through which air blasts help separation of the top sheet and then suckers take hold of the separated sheet. There are two air blast tubes, the upper and lower. The gripper edge of the sheets are subjected to this blast and the suckers lift the gripper edge of the sheet. After lifting of the top sheet by suckers another blast helps the separation further. Now the sheet is conveyed by suckers and steel rollers. Bosses drop on the sheet and propel it forward down the feedboard over slow-down tapes. When the sheet approaches the front lays, the slow down tapes come into operation and the sheet is slowed down. The side guide draw up device draws the sheet to the side lay. The tension of this device is adjustable to avoid buckling of sheet or damaging its edge.

Two steel feelers act as cut-out at this stage. If there is no sheet, or if there is a crossly fed sheet or damaged sheet, the feelers register in groves. The cylinder is tripped by automatically applying the brake.

When a sheet is correctly fed there is no contact between the feelers and the corresponding grooves. In the delivery also a fly trip operates when a sheet is fouled during delivery.

ADVANTAGES OF BACK SEPARATION

The latest trend is back separation. There are certain advantages inherent in back separation some of which are given below. To begin with, a number of sheets are kept flowing towards front lays. The speed of these is naturally far less than front separation feeders. Slowing down devices are not necessary. Perfect register is easily ensured. The top of the feedboard is free from unnecessary gadgets which are necessary to control the sheet in front separation.

Automatic feeder requires care in handling and skill in adjustment. If handled badly it will not work. There are instances where a Govt. Establishment bought a number of auto-fed machines. Due to bad adjustment and ignorant handling, the auto-feeders are out of commission almost at the beginning and are now fed by hand only. This is a sad proof of carelessness on the part of the supervisory staff and technical personnel.

THE STREAM FEEDER

Although similar to back separation feeder, the feeder differs in certain respects. The sheets are fed from a pile. At first the combers hump the corners, lifting suckers then lift the sheet, this being helped by a blast from the pile retaining feet. Thus the top sheet is lifted from the pile with the help of suckers and blast as well as combers. There are forwarding suckers which take charge of the sheet and the stream of air coming from the back of the pile helps the forwarding of the sheet to the tape roll and then on with the help of margin rollers.

By now the next sheet has been lifted off the pile and the forwarding suckers go into action. Thus the sheet is fed in a stream and hence the name stream feeder. After this the operation of correcting the sheet to the lays is the same as in other kinds of automatic feeders.

ADVANTAGES

The advantages of a stream feeder are that there is a continuity of sheets in feeding and they also move slowly allowing sufficient time for registering the sheet to the lays. There is no possibility of the sheet being damaged due to the fast running. In other types of feeders, single sheet advances to the lays, a second sheet does not start moving until the previous one moves away from the feedboard. In the stream feeder, there is a slow moving stream of paper down to the lays.

TAPELESS FEED

In India even small presses have gone in for mechanically fed machines. The modern trend in mechanical feeders is towards a tapeless feed. The presence of tapes to convey the sheet from the pile to the lays has many disadvantages such as interference with register, stoppage of machine due to the sheet taking a wrong course, the sheet being disturbed on the way, etc. Machines like the Heidelberg, Frontex, Mercedes, etc., have adopted a new method of having grippers to hold the sheet separated from the pile and hand it over to another set of grippers. In such a system there is no moment in which the sheet is out of control as it is always held by grippers until the impression is taken. For delivery also, this tapeless system has come into vogue and has advantages over tape deliveries which smear the print and cause smudges.

On the Original Heidelberg Cylinder, the paper is fed into the machine through a series of grippers. There are no tapes or runners. After the side lay has been corrected, the sheet is finally handed over by a swing gripper feed. Thus constant register at all speeds is ensured on the Original Heidelberg due to constant gripper bite and tapeless feed. Two sheets of different size can be fed side by side by a twin-feeder arrangement.

On the Glockner machine, there is a pile suction feeder which is simple in operation and easy for adjustments. In suction feeds there is the common drawback of double sheets lifting when speed of the machine is increased. In Glockner Stop Cylinder, there is a separate motor which ensures that suction is not interfered with, due to varying speeds.

DEXTER FEEDER

In this the sheet is lifted and separated by means of a cone and comb. Now, suction takes over for the onward transmission of the sheet. The front lays are fixed to which the sheet is fed. There is a pull up device for registering the sheet to the side lays in Dexter feeder. A gripper bar which is at that moment stationary picks up the sheet by means of the grippers. The gripper bar having taken hold of the sheet now swings at the same speed as the cylinder and transfers the sheet to the cylinder gripper fingers. The register is constant at all speeds as one set of grippers do not lose hold before the other set takes complete charge of the sheet.

LATEST TAPELESS FEED AND DELIVERY

The Polygraph M II is a stop cylinder with automatic feeder of the latest type. No tapes or rollers are used either for the feed or for the delivery. The sheets are fed from a pile. A blast from a blow bar is

utilised for the separation of the top sheet. Now the sucker bar comes into action and takes charge of the separated sheet. It hands over the same to the feedboard. The feed board has a series of hollow longitudinal gaps and a set of suckers in the gaps works from underneath on the sheet now handed over by the pile suckers. These suckers from underneath the sheet is indeed a novelty in the Automatic Feeder field. These suckers ensure register with the help of pull pattern side lays. The sheet is always in full view and in positive control, which is a characteristic of tapeless feed.

From Our
London Correspondent

(Continued from page 24)

be absorbed in the air depends greatly on the temperature and atmospheric pressure. A point of complete saturation is reached when the air can no longer absorb moisture, this being represented by the numeral 100.

Humidity may drop from 80 to 45 in a half-day, which means that moisture is being drained from the paper, causing shrinkage. Again, humidity may increase from 45 to 70 in a few hours, which means that moisture is absorbed, causing the paper to expand. When humidity is high for several days, paper absorbs a great deal of moisture, and may take several dry days before it shrinks back to normal.

The static electricity present during paper manufacture causes the fibres to stand upright and these are then ironed into parallel lines along the length of the paper during drying. Therefore, when paper absorbs moisture, it causes expansion to a greater extent in width than in length, due to the position of these fibres which expand more in width than length. The moral is to keep the air in the pressroom circulating continually and move over to it any paper required for printing a few days before going on the machine, giving it a chance to become seasoned if it is left in the ream wrappers.

"WHAT IS THE SECRET OF SUCCESS?"

—Asked a Printer.

- | | |
|-------------------------|----------------------------|
| Make a good impression | — Said the Pressman. |
| Carry a good line | — Said the Linotype. |
| One thing at a time | — Said the Monotype. |
| Stick to the point | — Said the Caster. |
| Avoid errors | — Said the Proofreader. |
| A good make up | — Said the Compositor. |
| Get together | — Said the Folder. |
| Be honest | — Said the Counter. |
| Keep going | — Said the Motor. |
| A good turnover | — Said the Roller. |
| Be on the level | — Said the Imposing Stone. |
| Use your head | — Said the Mallet. |
| Mind your P's and Q's | — Said the Case. |
| Keep to the mark | — Said the Gauge Pin. |
| Have a sure grip | — Said the Quoin. |
| Use me in good printing | — Said the Type. |

The Anatomy of Colour

(Continued from page 12)

To Green, if black is added the resulting colour is *sage*.

If white is added to green, *pea-green* will result.

To blue-green, if black is added, *myrtle* will result.

If white is added to blue-green, *sea-green* will result.

If blue is added to white, *azure* is the colour we get.

If black is added to blue *navy-blue* results.

Lavender results from adding violet to white and *slate* colour by adding black to violet.

Heliotrone is a colour we get by adding purple to white and *plum* is the colour we get by adding black to purple.

Cold Gray is obtained by mixing blue black with white and *warm gray* is obtained by mixing brown black with white. Violet will deepen yellow, but blue-black will turn it green.

TESTING COLOUR

In testing mixed ink, it is better to test it on the paper to be used for printing the work. Take a small amount of the mixed ink on the special drawing knife. Draw it across the sheet rubbing the ink to thin films. Cut this film of ink through the centre of the strip. Lay the strip on top of the colour to be matched with. For comparison. Windows can also be cut and the original colour is placed under the window to be compared with the film of mixed ink spread on the paper. The undertone and overtone of the ink should be checked as sometimes it will be found that the colour

apparently is of the proper hue, but on working the undertone is entirely different to what it should be. The undertone can be checked by dabbing a small quantity of ink with the finger and comparing it with the ink to be matched. This is necessary in mixing several batches of ink for the same job for consistent colour.

SUITABILITY OF INK

There is a rule that ink is chosen to suit the paper. This is not true in the case of colour inks. The coloured ink required for super-imposition should not only suit the paper used, but also the base colour on which it is to be printed. The first colour should be retained in such a condition as to take the next colour and give the mixed effect. If the first colour is very wet or bone dry, the next colour is a waste, as desired results can not be obtained in such circumstances.

Electronics in Photo-Engraving

(Continued from page 22)

laboratory operation and our ROP 3-colour version may very well be available commercially in the next 18 months or so. Electronics is here today. Now is none too early for you to plan for its use.

How many of you, I wonder, have any idea of the magnitude in money of this electronics research programme being conducted for your benefit? Some of you who have had the opportunity to visit several of the laboratories working on the application of electronics to photo-engraving do realize, I am sure, that this effort is large. To illustrate how large, let me give you a comparison. The leadership of the Association has been giving thought to a research programme for the benefit of the letterpress industry. It is understood that the figure being contemplated for this programme is in the neighbourhood of \$ 30,000 per year. Compare that figure with this one. In just the process colour phase of the electronics programme which I am about to describe to you, it has been conservatively estimated that so far over \$ 61,000,000 has been expended. This represents approximately 20 years of continuous research activity at the annual rate of expenditure which we are now contemplating. Bear in mind that this figure is for just one phase of this electronics programme \$ 6,000,000 already expended in a programme not yet at completion, to improve quality, to speed up production and increase profitability. Bear this figure in mind, as these equipments and services are outlined to you.

At the present time, this electronic equipment may be divided into two broad categories. In one, the final printing plate

itself is made directly from original copy by electronic techniques. In the second, electronic principles are being applied to the preparation of photographic negatives which are then used in the normal manner.

Right now, there are three companies producing machines to engrave directly the letterpress printing plates. These are Fairchild Graphic Equipment, Inc., the Rudolf Hell Company of Germany and the Elgrama Company of Switzerland. Several other organisations have attempted to build machines for this purpose but none has succeeded in breaking into the commercial market.

There are several variations of machines being offered by each of these companies. Fairchild Graphic Equipment offers the SCAN-A-GRAVER for producing same size engravings and a new model, the SCAN-A-SIZER, that will continuously enlarge and reduce at the same time the engraving is being made. This enlarging and reducing machine features a selection of dual screens and a plate size up to 13 inches by 16½ inches.

The Rudolf Hell Company of Kiel, Germany, has introduced an electronic engraver which can engrave on either plastic or metal. This machine, at the present time, produces a plate the same size as the copy and is being offered in several different screen sizes. Advertisements indicate that a dual screen and an enlarging and reducing machine will be available in the future.

Both the Fairchild and the Hell machines engrave a conventional halftone screen. The recently introduced Elgrama engraver from Switzerland offers a non-standard pattern. It cuts a variable width groove similar to a wood cut. The plates produced by this

machine are the same size as copy. It is versatile, however, in that it offers a selection of thirteen different screens, from fifty to two hundred lines per inch.

Electronic engravers which produce line cuts are already in commercial use. A special model of the Hell machine and the standard model of the Elgrama will produce line engravings. There is no electronic engraver which will engrave a combination plate in one scanning.

So much for direct engraving electronic machines. You have been familiar with them and further time need not be spent on chief details. Suffice to say, that they have proved of great commercial value in the coarse screen field. Their future in fine screen printing depends upon refinements on which each company is confidently working.

In moving into a discussion of the second category of electronic equipment, that by which a photographic film is produced, let us first examine the basic function of electronics. This can be summarised by two words *control* and *computation*. It is possible for electronic equipment to incorporate a degree of control beyond that which is possible with straight photographic methods, thereby simplifying and extending the range of the camera operation. An example of this is the Variable Response Unit of Fairchild which was described two years ago. The electronic function of computation applies most importantly in the area of colour correction. Here again, present techniques of masking and separation can be simplified and speeded.

For a great number of years, scientists have worked on the idea of accomplishing colour correction for platemaking by an automatic,

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electronic device. The basic principle underlying this work has been photographic masking as applied to colour correction. It is possible to duplicate to a very great extent this masking procedure with an electronic computer, and this type of correction was originated at Eastman Kodak approximately 20 years ago. The outgrowth of this work has been the Time-Life Scanner as developed at the Springdale Laboratories. A second basic approach to colour correction has been the solution of the Neugebauer equations by an electronic computer and this approach was undertaken by the Interchemical Corporation approximately 20 years ago. The Neugebauer equations mathematically express the relationship between colour as perceived by the eye and the dot characteristics of the three and four colour inks. The outgrowth of this development has been the RCA machine, which is being taken over by the R. R. Donnelley Company.

Practically all other approaches to electronic colour correction are variations of these two basic approaches. The number of people working in this field has increased tremen-

dously, showing the importance of this approach to colour correction. From the most recent information, there are ten major companies working on colour correction with an additional activity in the Armed Services for reproducing colour maps. Let us list the different organizations engaged in colour and then briefly discuss and compare the results and objectives of each laboratory. The two most publicized machines for colour scanning are the Time-Life and RCA machines, with the Time-Life machine being the only one which has been used in consistent commercial production. NEA-Acme has a colour scanner for three and four colour work and is putting this machine to regular use in their own operation. Dr. Rudolf Hell of Germany, has test units in field operation of an electronic engraver for engraving colour plates directly from original copy.

Other organizations that are actively working in the electronic colour correction field are Fairchild Graphic Equipment, Inc., J. F. Crosfield, Ltd., London, England; Hunter-Penrose Ltd., England; the Belin Company of Paris, France;

and the Miehle Printing Press Company in the U. S.

These machines may be classified in three ways. There are those machines that scan original colour transparencies and produce a set of colour corrected, continuous tone negatives. Into this grouping falls the Time-Life machine, the NEA-Acme scanner, the Hunter-Penrose Autoscanner, the Belin machine, and the Crosfield Scanner. Then there are those machines which scan a set of uncorrected black and white separations which have been made through colour separation filters. Machines featuring this initial separation technique are the RCA machine, the Hell continuous tone colour correction device, and an alternate version of the Crosfield Scanner. Into the third classification falls the Fairchild equipment which scans original colour copy and produces a screened, not a continuous tone, product. The Fairchild colour system has two alternate outputs. In one version, the process plates are made directly from original copy. In the alternate version, the output is put on film as a colour corrected, screened negative or positive.

The Time-Life Scanner should properly be placed first because it is the colour equipment now in most advanced commercial operation. The Time-Life, through their subsidiary Printing Developments, Inc., has set up service organizations to accept original transparencies from commercial engravers and return to them continuous tone, colour corrected negatives. This scanner accepts colour transparencies up to 8" x 10" and produces simultaneously four colour, corrected separations in approximately an hour and fifteen minutes. Enlargement or reduction is accomplished during the subsequent screening operation.

(To be continued)

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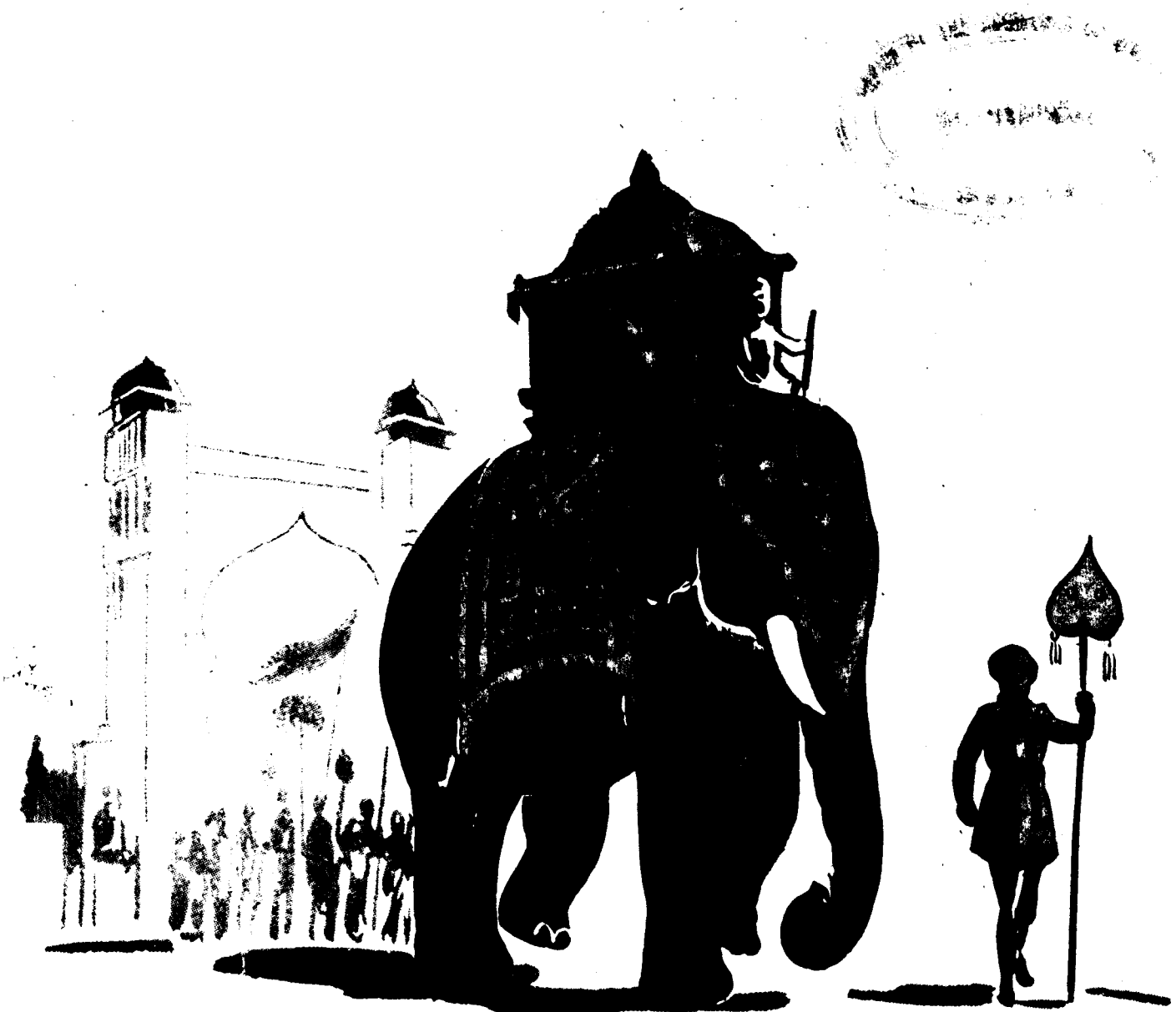
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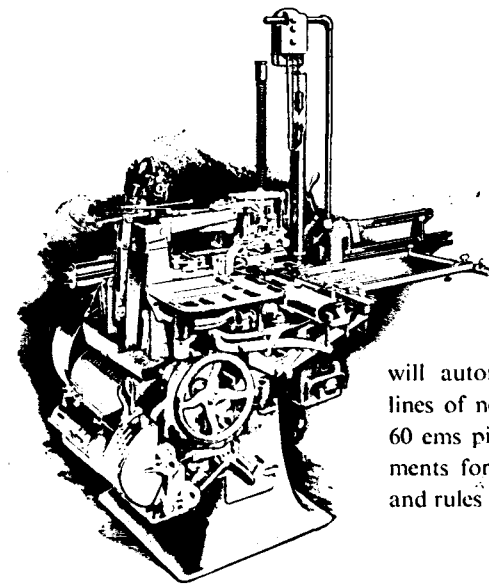
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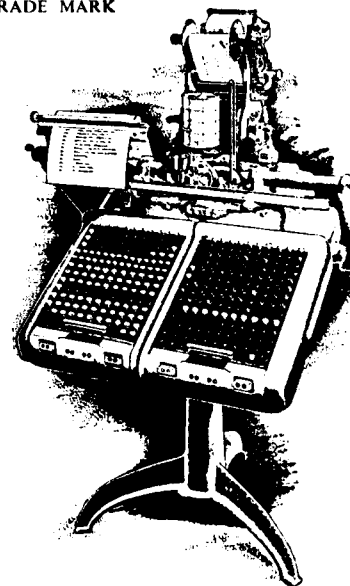
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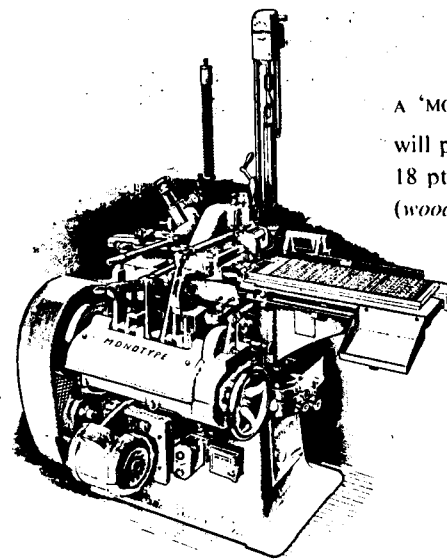


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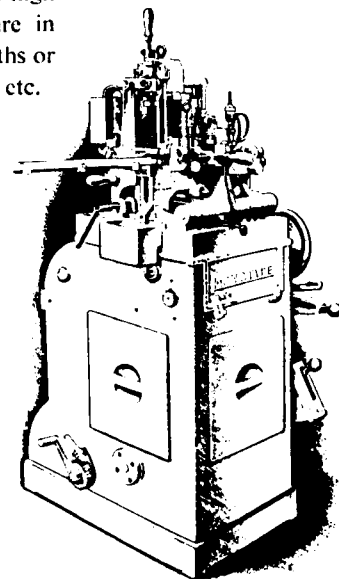
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The Editor invites articles on printing and allied industries for publication in the magazine. Articles should be of a good standard and should be neatly typed on one side of the paper only. Payment will be made after publication for the articles published as per the rates agreed upon by the Editor.

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[No. 4

In this issue....

- ★ Is There a Case for Private Enterprise?
- ★ Layouts and Lettering
- ★ Humidity in the Pressroom
- ★ Meet the Compositor
- ★ Electronics in Photo-Engraving
- ★ Thrills in a Second-Hand Bookshop
- ★ From the Editor's Pocket-Book
- ★ Regular Features

From Our London Correspondent
Pressroom Problems Solved
News & Views etc. etc. etc.

Printindia magazine sells throughout India and in many foreign countries. As a medium of publicity, its pull in the printing, publishing and allied trades is enormous. World famous manufacturers and advertising agencies have already been utilizing this magazine for high-potential trade publicity campaigns

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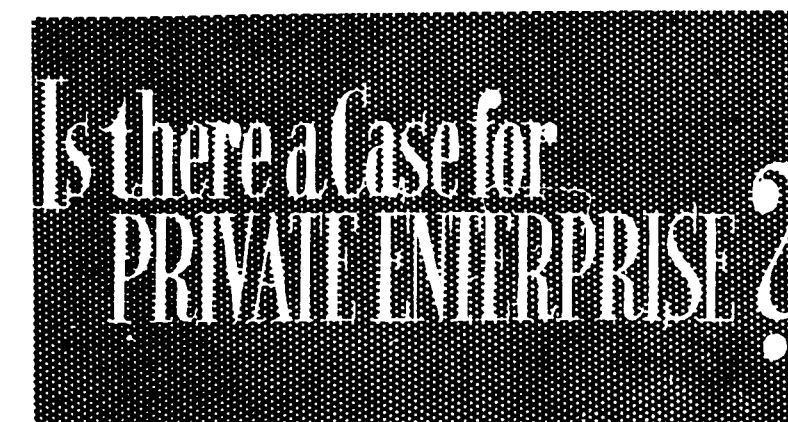
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EDITORIAL



The policy statement of the Indian Union Government emphasises the gradual enlargement of the public sector. This means the gradual elimination and final liquidation of the private sector. Do we know what this means to the printers of India?

If the above is our national objective, then there is not much time left between now and the day when the Government will own all the means of print production in the country. But on the other hand, our national objective would appear to be raising the production, increasing the quality content and thereby raising the standard of living of our citizens.

The public sector in the field of printing is represented by the Government Presses of the states and the Centre with a few Railway Presses and Map Reproduction Offices of the Survey department. None of these to our knowledge has ever attained peak production or pride quality. To say the least, they have been producing printed matter which is an eyesore to the reading public. The rate or speed of production is also far behind that of private printing presses. Government officers and Government servants develop callous indifference to conditions obtaining in Government Presses.

The Government Presses are doing only one thing well. This is printing bad quality stuff at high cost. *For example the Madras Government Press, we understand, adds to the cost of every job 200 per cent as overhead.* Assuming the cost per printed page is Rs. 5/- an overhead of Rs. 10/- is added to it and the department concerned is billed. Now, we can make bold to say that there is no private printer who has such a burdensome overhead.

If Government Presses are to be enduring and also expanding as the powers that be desire a

committee of experts should inspect these presses and report to Government the colossal waste that is going on in the name of public enterprises. As our tax-payer is the real master of these undertakings, he should know where he stands. If public work can be printed more decently at less cost and within less time, national interest certainly demands giving such work to private printers.

The number of hands working, the number of officers and their pay, the value of equipment and spares bought every year, the material and manpower wastage should be assessed by an unofficial expert committee. Then the world of printing will know the inefficiency from which these oversize establishments suffer.

MIXED ECONOMY

In the midst of socialistic chorus, now and then we hear a tune of "co-existence." This means that private and public enterprises can co-exist without fearing the abolition by one of the other. For peaceful existence of these two sectors in the printing industry, it is necessary that the Government Presses should not be allowed to expand and eclipse the market for private printing.

The printing industry has abruptly reached a new and critical stage in its long and important history. What with scarcity of raw materials and restriction of imports of equipment from abroad, it has received a crippling blow.

Socialisation is supposed to be a peaceful process. But the industry has often been troubled. Persistent cross-currents of distrust and fear have brought about a high degree of instability in printing industry.

Recently, the expansion of Railway Press has resulted in throwing out of job over 300 workers from private employment. This instability has been heightened by banning imports of printers'

necessities. These measures affect the security of the industry.

When a private employer errs, our thoughts naturally turn to the Government for protection. But if all presses are owned by the Government where are we to turn? What happens in the Road Transport will repeat in printing also.

Our national plans involve a considerable increase in the quantity of printed material. For better education, for more information, for faster spread of knowledge, to promote peace and goodwill, to entertain the sick, the maimed, the distressed, to cheer up the downtrodden, printing is an important medium. These things stress the immense importance of printing industry in promoting national economy. If the printing presses of our country lose their business, if they are dominated by Government Presses and Government control, Government interference, Government hostility, that would be both a tragedy not only for the industry but for the whole private enterprise in India. Indian national economic life would then be subject to near-strangulation.

The freedom of private enterprise would be endangered as though there has been no Independence, no withdrawal of foreign power and alien domination. The free industries of India will be placed in jeopardy when the private printers lose their markets upon which their economies depend. All these would have most adverse if not disastrous effects upon our industry's economic life and industrial progress.

Then there are certain aspects of printing which transcend the mere material considerations. Printing is the handmaiden of Freedom, the art preservative of arts, the harbinger of good, the warning signal of danger, and represents all that is best and desirable in a democracy. If this precious weapon of freedom is itself enslaved in the hands of Government, the meaning of the very freedom we have won would be lost. Printing symbolises religious thought, cultural heritage and the supremacy of the spirit over matter, of science over quackery, knowledge over ignorance and order over chaos.

In spite of protestations by Government that private enterprise will have its place in the future of India, due to the import ban of equipment and restriction of raw materials, respect of party Government and belief in such Government's promises are fast ebbing out. At no time in the history of our industry has there been more

need of vision, wisdom and resolution on the part of our Government.

This is a season of stress stemming from the hasty policies of our Government. In their struggle to satisfy the demand for good and reasonably priced printing, printers are faced with a crisis. These policies of Government have not in the least affected the Government undertakings. They can freely import machinery, equipment, paper and other materials (As a matter of fact, the Government Presses are not even suffering from the enforcement of the provisions of the Factory Act!)

During the current year, the cost of living has taken rather a steep rise, with the consequent increase in labour costs. While the Government Presses are profligate in their expenditures, private presses have to live in a period extended austerity, for no fault of their own.

Even at a time when the problems of the printer in the private sector have increased several fold, a reasonable profit is essential to the continuance of the business, which provides jobs for technicians. Rise in printing costs is inevitable. But printers, in national interest, must avoid unnecessary price boosting, except where it is necessary to keep up the quality.

The Government should take cognisance of the people's right to run the printing business in the normal way. By increasing the inconveniences and obstacles for normal work, the Government are driving many printers to close their business.

* * *

The present day factory has travelled far from the 19th century industrial scene. There is no more congestion which lowers the efficiency of the work people and keeps the output down. The enlightened industrialist of the 20th century knows that efficiency and high output are closely related to good health and morale. The welfare of the workers is a major production factor. The working conditions are today at a level which will provide a contented labour force, a low sickness record and maximum production. Many private presses have attained this happy situation.

Printing Industry is at present reasonably prosperous. But parts of it are good and parts of it are very poor indeed. It is still in the making. It might one day become a gigantic industry as in the west, worthy to be remembered in history for its excellence in serving humanity. Mere profits cannot make it great nor even technical education.

What our industry needs is a philosophy. This philosophy should permeate the nation, purifying, strengthening, directing its spirit. There should be no difficulty in imparting such a philosophy, if we set ourselves to do so.

Indian printing Industry is divided into two blocs. The Government Presses, which are without a head. The Private presses which are without a heart.

Competition is a stimulus to quality and an incentive to greater productivity. One of the most important forms of competition is between the old and new. When Government takes over printing, competition ceases and old has to be tolerated by the new.

The problem of industrial organization in a democratic society is perennial and inescapable. How to organize, and control economic activity to ensure willing co-operation, adequate living standards and progressive improvement has always been a vital issue. Unless private presses are freed from bureaucratic interference, which are now much in evidence, technological progress or material welfare cannot be promoted in our industry.

People assume that big presses are efficient presses. It is true that some big presses are efficient, but all efficient presses are not necessarily big. Some of the large Government Presses are notoriously inefficient and uneconomic.

Looking at all these, it seems certain, that the private presses are having a hard time. If this is not to worsen, the printers should bestir themselves and act as a body, united in their purpose, strengthened in their resolve to preserve the freedom of private enterprise. Then and then alone, the Government will recognize the case for private presses.

Just as "Self-Government is not a substitute for good Government," Government printing is not a substitute for good printing. The various exhibitions of fine printing and the awards made by the Vice-President as well as by the printers' organisation clearly show that private printers are producing high class work, and their role in the printing industry cannot be neglected. Recently some State Governments have announced monopolising the publishing of school text books. This is another unwise policy which will bring down the quality of text book production.

We hope that the Government will come to an early decision as regards the expansion of

Government Presses and will not encroach on the business of private printers. It has been proved beyond doubt that private printing has a part to play in the improvement of our standard of living, which includes removal of illiteracy, improvement of education, industrialisation, public health, and other nation-building activities.

Any impartial observer will find the difference between Government printing and private printing. This is patent not only from the very look of Government printed matter but also the time taken to produce and the cost at which it is produced. It is amazing that such inefficiency is encouraged by schemes of further expansion. Instead of doing this, the Government may well come to the rescue of the private printers. We have earlier indicated many ways how this can be done. In India 90 per cent of printers are small or medium. Most of them do not own a building. Even the machinery is bought on loan at usurious rates of interest. Many presses do not live long enough to repay the cost of the machines. With the labour problem being what it is, the private printer holds an unenviable position among industrialists. The Government are pampering handloom, handicrafts, cottage industries and the like, but they turn a deaf ear to the appeals of the suffering printers. Unless the State comes to the aid of the printers soon, it will be too late.

We repeat what the Government can do to alleviate the distress of private printers. Buildings at cheap prices can be provided for housing the press. Long-term loans to buy the equipment can be granted. Small workshops can be provided to maintain and repair machinery. Spare parts may be provided at economic rates. Exemptions from Sales Tax and other taxes may be given for paper, ink and other printing materials. As much Government work as possible should be given to private printers. Further expansion of Government Presses should be shelved. Schemes for monopolising text book production should be dropped.

These and many more things the Government can do and should do, if they want to preserve a vital industry.

Good things never die. Good Presses are no exception, whether they are private or state-owned. Good printing strengthens the cause of printers as bad printing weakens it. Let us resolve today to be good in quality, better in production and best in keeping our promises.

Dear Mr. Printer,

Have you any DRYING trouble?
When printed sheets do not dry, it could be
due to any one of the following reasons:

- Paper being too acid or too absorbent or a combination of both.
- Over reduction of Ink (possibly to remedy picking).
- Use of wrong REDUCERS.
- Incorrect selection of ink for a particular paper.
- Insufficient drier in the Ink.
- High Humidity.

IT PAYS TO CONSULT YOUR INK MAKERS. THEY CAN SELECT
THE RIGHT INK FOR YOU TO SUIT THE JOB AND THE PAPER.

Yours for Service,
The Technical Department,
**RAINBOW INK & VARNISH MFG. CO.,
(PRIVATE) LIMITED, BOMBAY-7**

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LAYOUTS and Lettering

By
SRI RAMAKRISHNA NARAYANAN

Every kind of production requires planning. Printing is no exception. A well-printed work is only a well-planned print. In this monthly feature, outstanding pieces of publicity matter will be reviewed. The healthy criticism offered in these columns is only with a view to improve the quality of typographical arrangement as well as choice of type.

Going through India's three leading dailies, i.e. *The Statesman*, *The Times of India* and *The Hindu* on the New Year Day of 1957 no large change is evident, except perhaps in only one. There is a slight change in the colour advertisement policy of the last mentioned. Formerly we never used to see any small advertisement in colour. But we saw for the first time a 6" advertisement in red colour. This was something unusual for *The Hindu*. The advertisement was that of Messrs De Chane of Hyderabad for Albo Sang. This piece was prepared by Sri L. S. P. Natarajan of Hyderabad. Since this day there has been instances when 6" depth advertisements appear in a full extra colour.

A feature "Memorable Events Abroad in 1956"—a synopsis of events month by month—in the *Times of India* attracted attention on 1-1-1957.

The Press in India came in for a good deal of praise from our Prime Minister. Speaking on the occasion of the anniversary function of the Calcutta Press Club on January 16, the PM characterised the Indian Press as a "Serious Press" and was of the view that "it compares favourably with the press of other

countries." One sentence of our PM needs particular attention: "I would agree that it is better to have anti-social behaviour to some extent than to limit the Freedom of the Press." That shows how much our PM values the Freedom of the Fourth Estate.

To the objectivity and fairness of our newspapers, it only needs some more attention to the mechanical

Escape? Impossible!



Liquid steam and smoke cannot escape from rubber boots, gaiters and coats if they are sealed with Turners' Asbestos Packing. Use it and your worries about leakages are over.

Our arrangement with Turner Brothers Asbestos Co. Ltd., England, we make "Furby" Packings. We spin asbestos fibre into yarns and then press these yarns into packings which provide a perfect seal, unaffected by the temperature and pressures normally encountered in industry.

Turner's "Furby" Packings are just one of the many valuable asbestos products that we at AM & FM make to meet the needs of India's industry. The increasing use of Asbestos is an index to India's industrial progress.

Where There's Industry There's Asbestos

AM & FM

ASBESTOS, MAGNESIA & FRICTION MATERIALS LTD.
(PRIVATE) LIMITED
INCORPORATED IN INDIA
CALCUTTA, BOMBAY & MADRAS

Excellent typography—Escape from monotony

side to make our dailies far far better than what they are now.

Readers of the advertising pages of our newspapers will be familiar with the initials "AM & FM". Asbestos, Magnesia & Friction Materials Ltd. are those who advertise regularly and Messrs. D. J. Keymers, Bombay, do a good job every time. Reviewed here in these columns are two 10 x 3 inch pieces of the series.

Let us take the first one: A thin brush script line: "Escape?" followed by "Impossible!" in 18 pt Gill Sans Heavy caps and lower case. Who wants to escape? Why is it impossible? For the answer to these questions, one has to look at the illustration presented in a novel way. The sketch of a standing figure, gagged, bound hand and foot is typical and suggestive of someone desiring very badly "Escape." Thus the headline is picturised to heighten its effect and increase the curiosity of the reader.

The need for Asbestos materials in industry especially in packing gases which are likely to leak is emphasized in the main copy. This is positioned to the right of the vivid illustration in left flush lines. These are set in Times Roman 9 pt caps and lower case.

After the main copy, we have in 18 pt. Bembo Italic "Where there's Industry There's Asbestos". This is followed by a Times Bold 7 point line "We supply" and then the products names. The letters "AM & FM" in Gothic condensed are to the left of this group.

Centred to the whole of the above is the name of the firm in Gill Sans Heavy and the address in Gill Medium Caps and two words in Caps and lower. The above forms quite a good feature advertisement, considering from the angle of effective copy, arresting illustration and appropriate type selection.

"Hydrated Magnesium Silicate..."

...a fibrous mineral possessing relative properties to asbestos, ceramic liquids and other chemical and physical phenomena. ...or just asbestos...one of the most useful minerals known to man. It is made up of millions of tough, thin, tightly-compressed fibres, and is acid and fire-resistant.

Where There's Industry There's Asbestos

AM & FM

...the supply AND CLUTCH LINES...HEAVY DUTY ASBESTOS PRODUCTS...SPRATED "LIMPT" ASBESTOS...HEAVILY INSULATED MATERIALS...FIBROUS CHEMICALS...INSULATING BOARD

ASBESTOS, WAREHOUSES & FRIGIDERS MATERIALS LTD.
P.O. BOX 100, CHENNAI 600 001

"or just asbestos"

In the second there is a six point rule in the middle. The advertisement is conditioned by this rule. It has a break to allow the words which form the firm's familiar slogan "Where there's Industry There's Asbestos." This is across both the halves of the rule.

Again the illustrations take a new turn. On the top is the learned professor with all his erudite scholarship and love of bombast and technical terms. At the bottom is the simple student, who gloats in over simplification. Both the minds look at the product of our firm, from two extreme angles: What is "Hydrated Magnesium Silicate" for the scholarly professor is "just Asbestos" for the small boy. The Chemical name as given by the professor is in Lino No. 2, 30 pt. caps & lower and the student's nomenclature of the same product is in brush script, irregularly aligned, with a reversed "S" thrown in for juvenile effect.

Between the Professor's complicated definition and the boy's simple description, stands the two paragraphs of copy in 9 pt. Times Roman right flush and left flush indention, respectively describing asbestos, the product advertised.

To the right of the 6 pt. rule are the list of products set in Gill sans caps and about the makers of these, AM & FM in both the advertisements—in fact in all the members—of the series. The caricature or children's type of illustrations is appealing. This gives much of the force in the advertisement. The main copy and headlines are well grouped to emerge as a harmonious whole. Note the lavish white space that separates the various units and also between lines and as margins. A choice selection of type faces, although rather quite a good number: Times Roman & Bold, Gill Sans & Heavy, Gothic, Bembo and Lino No. 2, all try to combine with each other without sharp contrast with each other.

Finally the AM & FM pieces by D. J. Keymers give a satisfying feeling after having gone through them.

STEEL PLANTS

Our steel plants erected by the Germans at Rourkela, by the Russians at Bhilai and by the English at Durgapur have put India in an enviable place in the Industrial Map of the world. The advertisement under review is concerning the last one by the English and what the firm of Simon Carves are contributing towards the same. This advertisement headed "India's New Steel works" is entirely without illustrations. The dignity and impact are left to be achieved entirely by the arrangement of type.

The headline is in Garamond bold 36 point all caps followed by a tapered dash in a liberal amount of white space. Times Roman 10 pt.

is used for the text. Although this appears comparatively small, it is to the point as it is amply leaded. This is followed by the two lines "Steelwork plant by" and "Simon Carves Ltd." at the end of which is the emblem of "Simon Group." As the first line is shaded half-line, Simon Carves Ltd. stands out and the line "Incorporated in England. The Liability of the members is limited" is barely visible, set in 6 pt. Times Italic Upper and lower. 8 pt. Times Roman all caps is used for the address line. At a good distance comes a two point rule.

The special features of this Simon Carves advertisement about steel works are: Absence of illustration, but at the same time this absence is not felt, thanks to the excellent typographical arrangement. The Times family used throughout in various sizes with plenty of leading is another point. Look at the amount of white space within the advertisement which gives a luxurious look. Stowe and Bowden, England, have done a very good

INDIA'S NEW STEELWORKS

For the new integrated iron and steel plant to be built at Bhilai, the cost is Rs. 10 million (not to be paid by Simon Carves) and the responsibility for the complete plant, including the three blast furnaces, the three open hearth furnaces and the steel rolling plant, the by-product plant and sulphuric acid plant, and the steam generating plant for the entire works.

The Rs. 10 million contribution of Simon Carves to this great enterprise is the largest of their kind in the history of heavy industry in India and the world.

Steelworks plant by
Simon-Carves Ltd

STANDARD BUILDINGS, 11 DALHOUSIE SQUARE, BOMBAY, CALCUTTA &

No illustration—Plenty of
space and effect too!

PRINTINDIA



Headgears hit headlines

job in designing this excellent publicity piece.

NEW ADVERTISEMENTS FOR THE NEW YEAR

New-year advertisements form a class apart and this year's number was not so imposing as their display was not so impressive. Two New-year ads stood out among others.

Readers of *Printindia* may recall our review of "Brooke Bond" last year in the January 1956 issue. Brooke Bond is again in the forefront of the picture with a 10 inch advertisement this year. Last year it was a centre spread of a book with a hand-lettered "Happy New Year!"

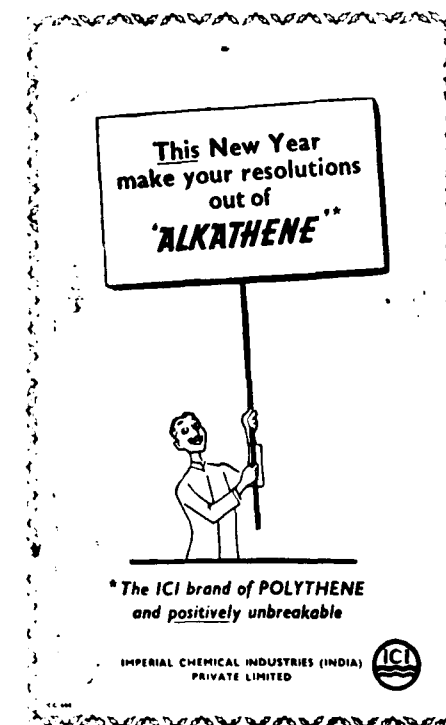
One bare-head among eight differently geared heads is the theme of this year's piece. The type used is Goudy 18 pt. upper lower with uneven indentions. "May Your cup be full of cheer; good fortune smile on your New Year." The advertiser almost

effaces himself in a solitary bottom line in the usual hand-lettered style. This fine new year hit about a good cup of cheerful tea for health and cheer throughout the new year is by J. Walter Thompson.

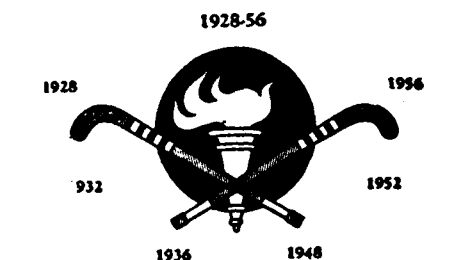
THE CLARION CALL

Messrs. Imperial Chemical Industries have brought out a nice piece by Clarion Advertising of Calcutta. Alkathene is one of the new substances put in the market for the aid of industry by Imperial Chemical Industries. (Vide *Printindia* Nov. 1956 for the review of PVC Darvic Sheet, another popular product of ICI). Of late ICI has been stepping up the campaign for Alkathene, which is useful in a variety of ways for dolls, utensils, soap boxes and the like.

This 10 x 3 column ICI advertisement has a border of holly leaves. Just above the bottom is the Alkathene man (popularised through the series) holding up a placard "This New Year make your resolutions out of Alkathene".



Unbreakable record of Alkathene publicity



WELCOME & CONGRATULATIONS

to the victorious

OLYMPIC HOCKEY TEAM

from

THE TATA OIL MILLS

THE ENTHUSIASM and teamwork which led India's hockey team to their sixth Olympic victory are evidence of the spirit and growth of our India—a growth with which we are proud to be associated.

In their six Olympic hockey victories, India's team have scored one hundred and three goals—against only three scored by their opponents. And at Melbourne this year, they scored thirty-eight goals in five matches... without conceding a single goal! A great achievement, which equals their clean record at Amsterdam in 1928, when they first entered the field of Olympic hockey and scored twenty-nine goals in winning five matches.

As the winning team returns, we send them our hearty congratulations and a warm welcome.

Warm welcome and Tata's
telling publicity

The first three lines are in 24 pt. Gill Sans Bold upper and lower and the word "Alkathene" appears in the same hand-lettered italic caps used initially. Covering our Alkathene man is a thick rule and below it are "the ICI Brand of POLYTHENE and positively unbreakable" in 18 pt Gill Bold Italic. Below this in 12 pt Gill Bold Caps with the ICI emblem are the words "Imperial Chemical Industries (India) (Private) Limited."

In the ICI advertisement described above, the copy is ably produced, which emphasizes that Alkathene is unbreakable, gets it up to the New Year Resolutions, so that they too may be unbreakable. (All of us know that most of the new year resolutions are broken before they are made!) This with the illustration makes an effective New Year advertisement. Something new is certainly there which is remembered throughout the year.

TATAS AT IT AGAIN

How many could have missed the column advertisement of TATA STEEL showing a hand with a stop watch poised in it. There were the characteristic five circles signifying the Olympiad, with Football, Hurdles, Shooting, Hockey and Swimming inside. The copy read "Get set...Go—and Good Luck to You!" and at the bottom "Tata Steel bids Godspeed to the Indian Olympic team." None but the Tatas thought of the Olympic players from India and now to think of it, our team did need it, very badly.

The Olympic events are over. For us, there was more in the game than in the outcome. The Indian

players played the game and returned home. While the Madras Corporation did not think fit of according our Sports heroes a civic reception, it was thoughtful of Tatas again to put an advertisement, this time for Tata Oil Mills, welcoming home our heroes. No doubt the World Hockey Champions for the sixth time (and for nearly thirty years without a break) deserve this gesture.

The advertisement is very simple: two hockey sticks crossed against a black circle in which there is a white figure of Olympic Torch. The years 1928, 1932, 1936, 1948, 1952 and 1956 are around this anti-clockwise with 1928-56 at the top in a slightly bolder type. The headline below this reads: "Welcome and

congratulations to the victorious Olympic Hockey Team from the Tata Oil Mills." The main text is set in a smaller width than the hockey sticks, except the line "Welcome and Congratulations." Thus there is quite a lot of white space in the advertisement.

The type face chosen for use throughout is Goudy. This gives dignity and balance eminently appropriate to the great occasion. J. Walter Thompson have done this splendid commemorative piece.

From the foregoing, a few things emerge which should be noted: Advertisers should leave the direct approach: "I am selling this. So, please buy that." Many subtle ways are employed to connect the product with a remote object. All occasions are utilized to commemorate the product along with the event. So much about copy, which would be the briefer, the more effective.

As regards illustrations, the caricature, the children's art, the renaissance school, have taken deep roots in advertising art. Occasionally, no doubt, photographs dominate, in a few pieces. On the whole, illustrations should be simple, effective and appealing. They need not necessarily be closely connected with the product or the advertiser.

Thirdly, it is not necessary to have any illustrations at all. Simple typography, adequately leaded in well chosen type faces and sizes, without too many of them, will certainly make up for the absence of illustrations. White space and plenty of it, is the secret of success of present day advertisements. The suffocated, jam-packed pieces with big bold types bursting out of the borders are monstrosities which the readers hate.

Finally, our advertisements are in the right path, but their path is long and the ground to be covered is wide enough.



Sree Saraswathy Press Endowment: Sri S. N. Guha Ray handing a cheque for Rs. 6,000 to Sri N. K. Sidhanta, Vice Chancellor

Humidity Pressroom

By

Sri K. A. RAJAGOPALAN B. sc.

MAN is unhappy in dry weather. He is uncomfortable in humid weather. The printer is more unhappy than others as humidity affects his materials also. When materials are affected, the work is also affected. This article throws light on humidity, its control and the necessity for such control

WHAT IS RH?

This is an age of abbreviations. In this age any two letters may mean anything from aluminography to zincography, from bibliography to xylography. (You know UNO means United Nations Organizations, the preserver of this world's conscience.) So, RH means Relative Humidity. To understand RH, we must begin by understanding H. Humidity is the quantity of water vapour present. The moisture content of air is called humidity. When humidity is expressed in relation to moisture content in saturated air, the ratio is called Relative Humidity. Thus RH is a ratio. But ratio between what? The ratio between the actual amount of water vapour present in air and the amount of moisture required to saturate the air. Therefore

$$RH = \frac{MP}{MS}$$

where MP is the moisture present in air and MS is moisture required to saturate the air at that temperature. To understand how RH is determined, we should know something about Dew Point. The temperature at which the air becomes saturated with moisture is called Dew Point.

The relation between temperature and humidity is in inverse proportion. The lesser the temperature, the greater is the moisture content of the air. A stage is reached

when the air near the ground is unable to hold any more moisture. Therefore the moisture condenses in the form of dew or small drops of moisture.

Latin "*Humidus—Humere*" is to be wet or moist. To be humid is to be damp. Humidity is moisture, the degree of wetness or the moisture contained in the atmosphere. Relative Humidity is the relation between the amount of moisture contained in air and the maximum amount of moisture the atmosphere could hold at a certain temperature. From this it will be seen that temperature and humidity are related. The higher the temperature of the air, the greater is its ability to hold invisible moisture. When the temperature is lowered without taking away any moisture, the relative humidity is increased. If the temperature is raised without adding moisture, the relative humidity is decreased. The air is said to have reached "saturation point" when it cannot hold any more moisture. Now, if the temperature is lowered, the excess moisture condenses as fog on the windows. This clearly shows that the temperature cannot be raised or lowered without affecting humidity. Humidity cannot be varied without affecting temperature. Both temperature and humidity are linked. In summer "dehumidification" is necessary. This means removal of moisture with a view

to get a lower temperature. In winter, provision should be made to add moisture, as the temperature inside is difficult to control and the humidity is liable to vary.

The printer should avoid wide variations in relative humidity. American experts aver that throughout the year 75 to 78 deg. temperature with humidity at 55 per cent is ideal for printers. 80 to 85 deg. with 60 per cent is also recommended by some. The first humidifying installation in USA dates back to the year 1902 by a Brooklyn Lithographer who found that paper stretch is the result of moisture variations. The famous air-condition people "Carriers" suggested mechanical refrigeration for cooling the air. By cooling the air, it was found possible to maintain constant moisture content. Air-conditioning equipment for printers still follow the basic pattern used fifty years ago. Mechanical refrigeration still remains the most up to date way for temperature/humidity control.

The temperature at which the moisture begins to condense is called *dew point*.

INSTRUMENTS FOR RH MEASUREMENT

Hygrometers are instruments used to measure the RH at any given time. There are tables which give the RH for any given dew point. From this it can be easily ascertained. In the Greek language "Hygros" means wet, and "meter" means measurement. Therefore, Hygrometer is a moisture measuring instrument. It gives only dew points at any given time and from it, the RH is to be deduced.

Hygrometers should not be confused with Hydrometers. "Hydra" is water and Hydrometers are

instruments for measuring the specific Gravity or Relative Density of liquids and solids.

Dew point is also expressed as the temperature to which air must be reduced to make the moisture in the air condense. Naturally the air is saturated at this temperature and hence condensation results.

RH is generally expressed as a percentage. This percentage indicates the degree of saturation (with moisture) of air. Thus if we say that the Relative Humidity at a certain temperature is 50 per cent, it means: The air will contain a similar quantity of moisture in addition to what it has, if saturated at that temperature. In other words, the air present is half the amount required to saturate it at that temperature. RH is different from AH or Absolute Humidity which is expressed at so many grammes per cubic foot.

WET & DRY BULB THERMOMETER

Another instrument from which RH can be ascertained is the Wet and Dry Bulb Thermometer. This consists of as its name indicates, a pair of thermometers. One is called Dry Bulb thermometer and indicates the ordinary temperature. This indicates the rate at which heat is transmitted to a cooler body. The other thermometer is enclosed in a wet cloth, the other end of the wick or cloth being immersed in distilled water or rain water. The wet bulb temperature will always be lower than the dry bulb unless the air is saturated.

Now that we have seen what is RH, let us now see what is the effect of RH on printer's materials.

HUMIDITY IN THE PRESSROOM

The printer cannot forget the humidity due to the following

reasons:—The paper he uses is a hygroscopic substance. This means that it is susceptible to variations in moisture content in the atmosphere. Thus when paper is dry and is exposed to moisture-laden atmosphere, it will absorb it. Or when there is moisture in the paper and the atmosphere is dry, the paper will give out the moisture.

The rate of drying of ink on paper is certainly affected by the moisture content. But the more important result of weather changes on paper is that there is a certain amount of shrinking or stretching which affects register, especially when the weather changes during the running of a multi-colour job. On large sheets these changes considerably affect the dimension of the printed sheet resulting in register difficulties. Exact register cannot be obtained when one colour has been printed on dry paper and the subsequent colour on the same paper which has later become comparatively moist.

The condition of the air in the machine-room may be the same, but the paper during the period intervening between printing one colour and the subsequent, might have changed, i.e., might have given out moisture or absorbed moisture.

It is usual for certain manufacturing processes to have a preference for a moist climate as in the case of textiles. But such a moist climate is injurious for the manufacture of chocolates, sweets or matches. The latter requires a dry atmosphere. If a question is asked whether printing industry requires a moist or dry atmosphere, the answer is neither. What it requires is a stable atmospheric condition. The moisture content should not be changing abruptly. Air usually contains a certain proportion of water vapour. This

varies from zero to 25 per cent in weight. For any given temperature, there is a maximum amount of moisture that can be absorbed by air. When air has this maximum moisture, it is said to be saturated. This is called the dew point for that temperature. Anything less than the maximum moisture is expressed as 60, 70 or 75 per cent. All materials are affected by temperature and humidity. The most affected is paper. It stretches or shrinks depending upon the moisture content of the air. If a colour job is running and half-way, the humidity suddenly changes, there will be bad register.

Printers in India think that the stretch or shrinkage is negligible and anyway will not affect register of jobs. But I have seen many cases where every other thing was OK, except the weather, and there was bad register. It was quite a problem as to how to avoid waste of materials.

Next to bad register, static also has a direct relation with RH. In humid weather, static is almost non-existent, whereas in dry weather, static is much more prevalent. For this reason also the printer has to contend with Relative Humidity and control it.

The printed matter may not dry readily or within a reasonable time. We assume that a suitable ink was used on appropriate paper. Now, in such a case, only the temperature is to blame.

Printers' rollers are also affected by weather conditions. Printable rollers have a bearing on RH. Bad weather can render composition rollers unserviceable. Sometimes they become stone-hard, unable to absorb ink, much less to give it over to the forme. At other times, the rollers become jelly-like and soft. In either case it has to be

conditioned. If air is conditioned, then there is no fear of rollers getting spoiled, ink not drying, static developing, paper stretching or bad register.

AIR CONDITIONING

To avoid the above troubles which result from extremes of temperature, the air in the pressroom is conditioned. Air conditioning means that the temperature or moisture content is kept constant. The condition of the atmosphere is thus kept in a suitable condition. In air conditioning, the inside atmosphere remains constant whatever its condition outside the room or building. For conditioning air, several factors are controlled such as temperature, humidity, purity, velocity and air pressure.

PRESSROOM FIRST

Even big presses cannot afford to air-condition the entire plant premises for reasons of cost. It is not necessary too. Lithographers find it necessary to air-condition their pressroom. Photo engravers find it necessary to humidify their darkroom. Plate-making department also will be benefited by air-conditioning. A unit to cool the air and dehumidify it, is called for. A unit to put moisture in the air and to heat or re-heat air. These three units are usually independent of each other to afford flexibility and to avoid complexity.

In the dehumidifying unit water is circulated through a cooling tower. There are three classes of refrigeration depending upon the amount of refrigerant: The first class belongs to 1000 lb or over, the second between 20 and 1000 lb of refrigerant. The third contains 20 or less of refrigerant. The capacity of the system depends upon the amount of refrigerant. It may be sometimes found necessary to use additional heat.

After the air is cooled and de-humidified, it is distributed to the desired room through duct for even distribution. The duct system avoids excessive blowing of air at certain points. Excessive blowing may cause fast drying of ink on the paper being printed.

In the summer, the plate-making department, camera and darkrooms should be de-humidified. There may be an exhaust system provided. The machine-room should be de-humidified for all round the year control of humidity.

COMFORTABLE TEMPERATURE

The temperature at which man feels comfortable is called effective temperature. In other words, effective temperature indicates the degree of comfort of various atmospheric conditions. We get a feeling of discomfort when the ability of the body to dissipate heat is lessened. When the heat loss of the body is equal to the heat produced, constant body temperature is maintained. Bodily comfort, therefore depends upon the rate of production of heat by our body and the rate of dissipation of heat.

It should not be presumed that the air in a room changes only when the outside atmosphere changes. The atmosphere in the room is affected by the heat produced by the persons in the room. It should be borne in mind that our body is constantly generating heat. The moisture content of the room is naturally affected by this heat. Therefore it is not necessary to assume that only when the outside atmosphere changes, the air inside the room will change. But the outside atmosphere has a bearing on the inside air.

HUMIDIFIERS

Humidifying machines are used to condition the air in any enclosed space. The hygroscopic condition

of the atmosphere is thus changed. Without elaborate equipment air may be cooled by means of evaporative cooling. This consists of passing hot dry air through the conditioning machine. The liquid water in the machine is transformed into vapour. The temperature is lowered due to this evaporation or change of a liquid into a gaseous state. When the air is full of moisture, the presence of static is eliminated.

A cold spray of air is sent through the conditioning machine which results in lowering the humidity. This is called dehumidification and is adopted in dry humid weathers. Thus by humidification and de-humidification, the condition of the air is kept constant so as not to affect the printers' materials and his printing. It also minimises press-room problems and wastage of time and materials.

The Pyle-National Co., Chicago USA, has brought out a new modular size of Multi-Vent air diffuser. In appearance the air diffuser looks like the perforated acoustical tile. Claimed to be the only kind of draftless air diffuser, it is widely used in the USA in many pressrooms. The Multi-Vent air diffuser is particularly suitable for pressrooms where drafts of air must be avoided, although a high number of air changes per hour may be called for.

TEMPERATURE-RH INDICATOR

The Abbeon Supply Co., Jamaica, N.Y., USA have manufactured a new temperature humidity indicator. It is called Model 127 Hygroidal and has a rapid rising humidity element

ADVANTAGES OF AIR-CONDITIONING

In the printing industry, air-conditioning is resorted to not only for the comfort of workers, but also for protection of materials or

equipment. We have seen that paper curls or becomes wavy. Such stock can not be fed into any machine much less an automatically-fed machine. Rubber rollers, rubber plates and similar materials show excessive wear in air that is too dry.

A humidifier puts moisture back into air that is hungering for it. The amount of moisture that is to be put into air can be controlled to suit your requirements. For best pressroom conditions, excessive moisture also is bad.

The requirements of good humidifier are that it should be economical in working and should not consume much current or occupy enormous floor space, call for complicated adjustments and skilled attendance. In other words,

it should be simple in working, easy to be installed and should be able to overcome dry air hazards.

Sudden changes of weather may be good for tourists and people on picnic, but in a productive industry such as printing, weather has to be controlled. Some types of air-conditioning machines are therefore called "weather-makers". Air-conditioning helps in maintaining quality control. It should not be imagined that only a large printing establishment require air-conditioning equipment. Although the problem of finance is tied up with the need for an air conditioning plant, whenever one can afford it, even small presses can have it with profit. Temperature and moisture changes affect the materials used by the big and small printer alike. Even

wood-mounts change as wood furniture does. Both are susceptible to atmospheric changes.

In allowing weather to change in your pressroom, you are introducing many variables likely to disturb your quality.

Among the variety of equipment available for air-conditioning purposes, some are merely for cooling the air. Others are for controlling humidity automatically. Some others perform the complicated job of cooling, heating and humidifying.

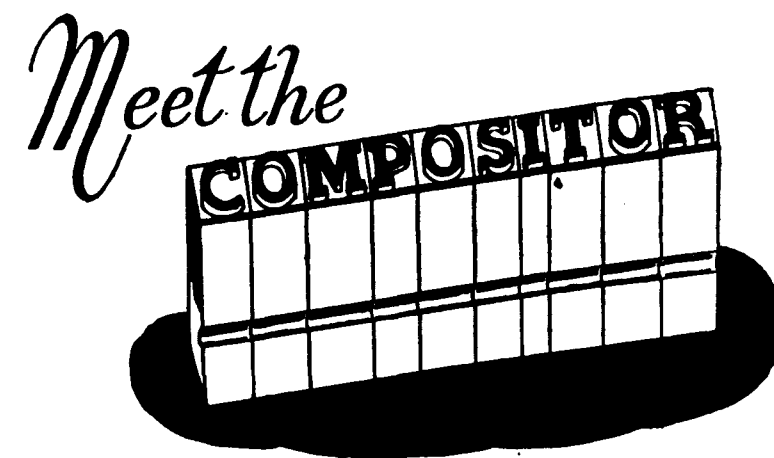
By installing air conditioning equipment the process of gumming is made easy. Static electricity is eliminated, during press feeding and delivery. The time required for conditioning paper can be considerably reduced. Printers' ink is no longer affected due to weather variations.

Good register in multi-colour can be guaranteed even if a lot of time is allowed to lapse between the printing of one colour and another. Ink misting or ink flying is also considerably reduced. Above all, the workers will work better in a comfortable temperature and agreeable humidity.

A temperature of 78 degrees and a RH of 48 per cent are considered ideal by experts for the printing plant.

In an offset printing plant and process engraving and developing rooms, air-conditioning can bring in many benefits. Quality of plates is improved, colour register is controlled, wastage of stock is eliminated. Make-ready time and machine standing time are naturally reduced.

Among the printers in the city, many have gone in for air-conditioning to improve the quality of their printing and control it. One of the leading printing plants to introduce air-conditioning is "The Hindu". The Imperial Tobacco have long since installed an air-conditioning plant.



By

SRI S. GIRI

There is no one in this world who has not heard about the Compositor. This personality of the printing press is brought before you in vivid verbal sketch by our expert writer-printer, well known for his pithy prose

SHAKE HANDS

Everyone of you have shaken your heads when you read a mistake in print. But none of you have shaken hands with the Compositor. This article throws light on the person behind the printed characters you see. You may be a famous author. But you could not have become famous but for the compositor who has set your works. And you, who are a famous scientist, could not have mastered the sciences or written research volumes except with the co-operation of the comp. But the politician may think the platform, the radio, the film and other modern media are enough to boost his party during elections. No, he is wrong. Who would think of printing his lengthy verbiage in the next day's newspaper, unless the comp starts the ball rolling by setting it. The historian cannot write lengthy manuscripts and hand it over to the next generation, but gives to the comp who sets and gives it for printing. Thus I can go on catalogue. But this is not a

catalogue and printing is no merchandise to be bought at the corner shop nor the comp a salesman.

HONOUR OF LABOUR

"In labour lies honour" says a Latin proverb. The comp is the personification of this saying. There is no one inside the Printing press who labours more and gets paid less than the comp. Any printed page will prove the truth of this statement. Take your morning newspaper. How many letters does a page of it contain? Have you ever cared to figure it out? A page-ful contains on an average more than 11,000 words. This is roughly the population of one of our towns. The labour of picking (or typing) each, caring for each, correcting many of these and making all into a readable whole may readily be imagined.

There is another thing to be said about a printed page. What all you see inked (and what you can count) is only half the story. What all is blank is also the comp's job to fill in. This is not reading

between the lines, but spacing between words and lines! Don't you see a blank between each pair of words: the comp has to put a piece of metal called thick space. Do you see some blank at the beginning of a para and at the end of it: the comp has to put some quads to fill the blanks. And every printed page should begin even and end even, except the beginning and ends of paragraphs. It is his job to maintain this square, even appearance. The space between printed lines, the blank between paragraphs, the white space at the top, all these are filled up by what are called leads, clumps, quotations, furniture and other blanking material.

CLEANLINESS AND GODLINESS

If clean men are God's men, the comp is the devil's man! He is always dirty, his hands always full of grime, printing ink smeared all over his face (why not?). But those who serve men serve God. By this definition, the comp is the greatest *Bhaktha* alive. He cannot also lie about the sizes of the type, spaces used or about the letters used. For instance he cannot say he has used 10 pt. if in fact he has used 11 pt. The point is 1/72 of an inch and too small to be visualised by the layman. But still, for the comp, the difference of one point is big enough to upset a page of matter and throw out of alignment many a letter. He cannot insert a "C" and lie that he has inserted an "O". For truth will tell immediately! In many professions, considered honest by modern standards, one can lie without being found out (that is, immediately). But the comp cannot but tell the truth. In printing there is no such thing as tolerance. All his implements are hard facts and cannot tolerate the merest abuse.



The Shivaji Couple: Sri Koteeswara Rao son of the founder of Shivaji Press, Secunderabad, with Sow. Visalakshi

STOCK IN TRADE

What qualifications go to make a good compositor? What qualities do you expect in an ideal typesetter? If you want the best compositor in your press, what requirements do you insist on for him? In short, what are the stock in trade of the compositor? The compositor should be a mathematician, scientist, literateur, engineer, artist—all rolled into one. Considering these requirements he is available for almost a song! He works in front of a pair of cases. These wooden frames are the receptacles in which are thrown innumerable characters in equally innumerable boxes of innumerable sizes.

Has any one thought of how many characters are in one pair of English type cases? The answer will shock the boldest of people. To start with, he has in the upper case 98 boxes and in the lower case 53 boxes. He normally deals with more than 150 characters. A pair of cases generally hold more than 4,000 characters from which the compositor selects at random and sets letter by letter, word by word,

line by line into pages and chapters and parts and finally into a book.

He deals with not only the 26 alphabets. For him there are various kinds of alphabets: Capitals, Small Capitals, Italics, Bold, etc. There are the 10 punctuation marks: Comma, semicolon, colon, the period, exclamation mark, interrogation mark, the hyphen, the apostrophe, the parenthesis, the brackets, the dash and the brace. There are the diphthongs, the ligatures the accented letters, the fractions, the sectional (reference marks). The compositor should be thorough in identifying type sizes. These types have parts too: A type has its face, beard, shoulder, body, belly, back and feet, complete. Each type has an identifying mark called nick. A good compositor should identify a type face with the help of the nicks. The sizes range from 1/12 of an inch to one inch or more. The type face has thin strokes at ends called serifs. These serifs are indications about the name of the face. The compositor, if he is good, should be able to name the face by a look at the face with its serifs (or without them).

LIFTING FEAT

Can you lift 600 small types at a time? Yes, the compositor does accomplish this feat and what is more, without upsetting any single letter. This is known as emptying a stick. Stick is the tray wherein he assembles all the type. After the stick is full he empties it on a larger tray called the galley. Sometimes the pessimist calls him a "galley slave." After the galley is full, he fixes the matter in the galley and pulls a proof. When the proof is corrected, he has to correct it in the galley. Correcting galley matter is the worst punishment one can think of giving to any man. Such a drudgery as driving out a word at the end, and re-justifying the whole line cannot be found anywhere. The word justification has a new meaning for the compositor: It means making two things equal. It may be making a line in the stick being brought to the measure of the stick. All lines should be of the same tightness as otherwise there will be trouble during emptying, during pulling proofs, during lock up and during printing too. This is because of the unequal length of lines resulting in bad lock up. The compositor is called upon to set a large letter by the side of a small letter. This is also called justifying. If we set a rule against a type line that is called justifying rule with type. Therefore the compositor should know proper justification. Otherwise there is no justification for his living as a comp.

He may be asked to judge how many pages a manuscript will make. This in printing office parlance is called "casting off." A bit of arithmetic is necessary for this. What size of type can we use to fill up a given space?

(Continued on page 27)

ELECTRONICS IN PHOTO - ENGRAVING

By

Mr. JUDSON A. V. HYATT

Vice-President, Fairchild Graphic Equipment Co., New York

Can you imagine a thousandth part of a hydrogen atom? That is the Electron. More minute than the minutest hitherto known to science or scientist, Electron and Electronics perform the impossible in industry. For the printer, electronics corrects colour, checks register, scans engraving plates and does many other useful things. In what follows, an authority on Electronics throws some light on the work done by research institutions for the benefit of printers. This is the second and concluding part.

RCA in conjunction with R. R. Donnelley Company, has announced that their prototype model scanner is being completed for use under R.R. Donnelley sponsorship. Plans for production of this equipment have not as yet been formulated. The RCA machine accepts a set of uncorrected separation negatives which have been made with standard filters. These separations are scanned by a cathode ray tube as corrected continuous tone, four colour, separation negatives. The corrected separations are produced one at a time in approximately fifteen minutes each.

This technique of pre-separation has an advantage in some applications. Composition of copy can be performed in the pre-separation stage to greatly simplify the overall problem of producing a page of colour work. It reduces the number of pieces of film being handled when several pieces of colour copy are used in composing a page.

Next is colour scanner, which has been used already for internal commercial production. This is the NEA-Acme Scanner developed by the NEA Service, Inc., Acme electronics Division. This machine accepts colour transparencies or opaque originals and produces colour corrected continuous tone separation positives or negatives in

either three or four colours. All of the separations are made simultaneously. A unique part of this machine is the simplicity of the computer. To the present time, this machine is being used for an ROP colour subscriber service. Plans for marketing this machine outside the NEA-Acme requirements have not been formulated.

The Rudolf Hell Company has announced a colour machine which engraves a finished letterpress plate in plastic or metal and has three prototypes in use in commercial installations. In the United States, this line of machines is known as the Engrav-A-Plate and is distributed by the Consolidated International Equipment and Supply Company. At present, this engraver produces a maximum size plate of 6" x 8" and produces engravings to same size as original copy although equipment for enlarging and reducing has been announced. Simplification is obtained in using only two electronic channels in the computer for colour correction instead of the usual three channels in all other equipment.

The Rudolf Hell Company is also designing a machine for rotogravure application. This machine is similar in system to the RCA machine. The input to the machine is a set of three uncorrected separation negatives which can be taken from

a composed page through separation filters. These three separations are scanned and a set of three or four continuous tone, colour corrected, transparencies are produced. Change of size is obtained in subsequent use of these separations. The Hell colour scanner utilizes mechanical scanning rather than electronic scanning as with the RCA machine.

A colour scanner based on the cathode ray tube type scanning is being developed by the J. F. Crosfield Company in London, England. The machine is different from the RCA method of cathode ray tube scanning in that only one cathode ray tube is used. This single tube performs the scanning operations and the reproduction operation by utilizing a half-silvered mirror. An original colour transparency is scanned with a cathode ray tube. The transmitted light impinges on three photo-multipliers, which feed a signal into a computer to modify the intensity of the scanning beam lens in the cathode ray tube. The final product is a colour corrected, continuous tone set of separation negatives in three or four colours. Change of size is accomplished in the later screening operation. An alternated form of this colour correction system is one which scans a set of uncorrected separation negatives as obtained from separation filters. This type of approach was designed to make it possible to handle reflection type copy and incorporate the possibility of handling a composed page.

A machine similar in basic principle to the Crosfield scanner is the Hunter-Penrose Autoscan. In this machine, only reflection type colour copy is accepted. A scanning light illuminates the copy and some of the reflected light is picked up by a set of three photo-multipliers which feed into a computer to modify the scanning light intensity for colour

Anything in Blocks

TRI-COLOUR, HALF-TONE & LINE

ALSO

COLOUR BLOCKS

FROM

COLOUR TRANSPARENCY

WRITE OR PHONE

Estd. 1890

Phone: 3202

M. C. APPASAWMY CHETTY & CO.

14, JONES STREET

::

MADRAS-1

correction. The machine differs in design in that the principal part of the optical system is a large copy camera. As the copy is line scanned on the copy easel, it is reproduced line by line on film in a cassette or magazine. Change of size is obtained at this stage. It produces one separation at a time. Screening has not been incorporated into this machine as yet, although it is a possibility. The Hunter-Penrose scanner has a very distinct advantage over other machines in that the problem of resolution and registry has been very greatly minimized. Because the scanning and reproduction of the image is done in the conventional type camera, only a small part of the photographic information is carried by the computer. In all other colour scanners, the colour correction information, as well as the complete photographic information, must be channeled through the computer.

This system represents a great advantage in registry and resolution.

The Miehle Printing Press Company has recently resumed research work on its basic colour facsimile system. Their empirical method was patented in 1951 as the result of experience gained in their previous operation of a process colour platemaking plant.

Recent experimentation by Miehle has verified the reliability of this electronic approach to assure high fidelity in the separation and correction of colour. They are presently investigating the application of the principles to a practical system that would produce fully corrected separation directly from opaque or transparent copy.

The Miehle approach to the colour scanner problem is unique in that a prism is used to replace the colour separation filters. This prism

is interposed between the scanning light source and the copy being scanned, so that any part of the spectrum can be selected for the scanning operation. This technique has the advantage of much better control over the filter characteristics.

Edward Belin of France has designed a colour scanner with its original application for textile printing, although it is also being used for conventional colour correction. In this machine, prisms are used to separate the light reflected from the copy into the various colour bands. Apertures select the desired colour bands for given separations. This machine, known in the United States as the Consolidated Belin Scanner, is now being introduced by the Consolidated International Equipment and Supply Company. According to information received from this firm, the machine can handle

(Continued on page 29)

Thrills in a Second-Hand Bookshop

By

MR. GEO. P. V. MILLER

In this article the author surveys the thoughts and thrills in a second hand bookshop. He views the shop as a shrine of knowledge, a meeting ground of religions, the crossroad of races and nationalities, a mausoleum of authors and our readers are sure to share the thrills

It is said that all the best books are necessarily second-hand. But it is not uncommon to see in practice that many, aware of this fact and despite their inner urge, have an aversion to visit second-hand bookshops. This attitude is evidently because they do not or will not comprehend what a charming adventure and a hidden joy awaits one in the dreamy, and stuffy atmosphere that awaits them there. That apart, one experiences a thrill not usually got in a new bookshop where books in their varied and attractive coloured covers are neatly arranged, displayed and even classified.

The very haphazard manner in which books are dumped in a second-hand bookshop, some thrown helter skelter in cases, Homer, Dante and Plato, lying cheek by jowl with Shakespeare, Dickens or Marie Corelli, some scattered all over the floor with such strange bedfellows as Goethe, Cervantes, W. W. Jacobs, Guy De Maupassant, R. L. Stevenson, Earnest Hemingway and others tied in untidy bundles, as if the spirit of authors would spirit them away, stirs your emotion. It is an experience not obtained, even remotely, in a new bookshop where the works of acknowledged literary masters and the puerile efforts of struggling authors of all

ages are neatly arranged, catalogued and priced with all the methodical efficiency of this modern, progressive commercialised age.

SPIRITS OF AUTHORS

Be what it may, the spirits of the authors, treated as they are in a second-hand bookshop, seem to touch you mentally and spiritually that you are perforce sympathetically drawn to them. You become so absorbed as an explorer in bookland that you wander around in a reflective daze, forgetting for the nonce the existence of yourself and the outside world. Here, in truth, lies enchantment and glamour, a soul-stirring literary world of fantasy.

When there is a surfeit of new books, good, bad and indifferent—by known and unknown writers intermingled with reprints of better known works of mature vintage, daily filling the shelves of every publishing house and bookshop, what need is there, you will probably ask, for second-hand books. But a visit to a new bookshop will invariably reveal that there is a tendency for discriminating readers, young and old, to select a well-known work in preference to one which is "modern".

This choice for older works bear out the advice of a sound but surly

critic who said, "when a new book is published read an old one." It also shows that while there is a good market for old favourites, readers prefer waiting for new prints of them rather than paying a visit to second-hand bookshops because they are either non-existent or if existing are not as many as one would like them to be.

NOT WORTH READING

There is no doubt that some have an aversion for second-hand books. They feel that they are out of date and not worth reading, much less owning. But when it is remembered that one of the boasts of men of letters is that their success was due to second-hand books which had been put to ignoble uses by others, you realise that they knew that all the best books were, without a doubt, second-hand.

Naturally, then you wonder why people pass a second-hand bookshop without as much stepping in to see what they can "pick up." It may be because they feel that there is nothing suitable for them. It may also be due to their innate prejudice that "after all they are only second-hand stuff".

But when you visit a second-hand bookshop you realise that it opens a vista of bookland. Its varied collection symbolising not only thoughts, periods and events of the ancient past but also of the recent past and the present, helps you to eschew your inherent prejudice. You subconsciously begin to feel that you have missed one of the good things of life, a visit to a second-hand bookshop, where there are books offering you all the glamour, thrills, incidents, fancies, facts, reasons etc., as in the Arabian Nights Entertainment.

To the book-lover and collector of works out of print or difficult to obtain, a second-hand bookshop is an unexplored mine. Here

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through

THE
PAPER MARKETING NEWS

81, MINT ROAD

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Phone : 263257

FORT, BOMBAY—1

INDIA'S LEADING JOURNAL ON
PAPER, BOARDS, STATIONERY
AND
THE GRAPHIC ARTS INDUSTRY

unexpectedly you can pick up, for a mere song at times, some good "finds" which grow scarcer and scarcer as the years roll by.

LITERARY SHRINE

A second-hand bookshop is literally a literary shrine. It inevitably draws its devotees, it would seem, not to worship but to breathe the musty air which pervades the entire place and gives it an atmosphere of antiquity.

Its worshippers, though seemingly in search of a "find", stand for a while in obeisance and drink deep of the historic past which pervades the entire atmosphere.

Enraptured with the atmosphere they seem to get into the spirit of the past and unconsciously become reminiscent. Obsessed, as it were, the older, at any rate, quote some ancient philosophy, thought or idea which can well be an antidote to this sick and troubled world of ours.

Apart from the associations a second-hand bookshop creates, it is also a meeting place not only for bibliophiles but also for students and casual readers. It is a place, too, where all barriers of caste, class and religion, so pronounced today, are broken. It is a place where forgetting your own importance, you discuss books and unconsciously strike up a bond of friendship which endures.

A second-hand bookshop is a place where, at times, much to your surprise, you retrieve the book you lent which had gone beyond recall. It is also a place where quite accidentally you come upon the name of some of your friends, casual or sincere, which in its wake brings pleasant or morbid memories. It may be the means, too, of tracing some dear friend whom you have lost sight of, or renewing friendship which was broken and which time has healed.

ADVANTAGE OF BARGAINING

Second-hand bookshops offer a good hunting ground for those who are unable to buy new books owing to prohibitive price. Whether a critical, casual or voracious reader, you are able to pick up your choice with the added advantage of bargaining.

They offer great scope to those who believe that libraries are not made, but grown. You could, with judicious selection, at much less cost and in a few years, surround yourself with books of your own choice and make your library a place of happiness, character and personality. There is such a variety, old and modern, that you are in a quandary as to what to select. It is doubtful whether a new bookshop offers such a varied collection and at so competitive a price.

It is a pleasant thing, no doubt, to be left a library. But more often such a collection does not appeal and create in you the feeling that "they are mine and I am theirs." This is because they are not an expression of your individual taste.

Buying your own books symbolises your taste, but second-hand books in particular creates an individuality and a history. They tell you why and when you got them

and the price you paid for them. It may be a chance conversation with a friend, an appealing passage casually seen or a fine moral gleaned. A source of inspiration, or an incentive for greater achievement.

WASTED HOURS

Though your intention might have been to look for the book of your choice you involuntarily look at something else, perhaps an arresting title, a significant passage casually seen, a soul-stirring book about which you heard or read about, you are momentarily lost in a maze of thought. A realisation that you are in the presence of the spirits of authors long dead, forgotten or in old age—but whose works still live, and living, take hold of you. You begin to live with them for a while and the result is that your emotions are stirred.

You are in a fix as to what to select. You begin to think of the wasted hours. May be also of your journey's end. You heave a sigh knowing that you had opportunities but you let them slip by. You arouse yourself from your reverie. You not only take the book of your choice but something more. You resolve to make up for what you have lost and to come again. Why? Because there is romance in a second-hand bookshop!

FAMOUS SCIENTIST WAS A BINDER

We all know that Michael Faraday (1791-1867), the English scientist, invented the electro-magnetic theory of light. From his discovery we have today the dynamo, the motor, the transformer, the telephone. But none of us know that the famous scientist was at first apprenticed to a Binder. As a bookbinder he got many books on electricity to be bound. Faraday, not only bound them, but also read them well. Thus he gained interest in electricity and became the inventor of many things.



F. & D. BROWNLIE

EFFECTS OF FLUFFING

A report recently published by the Printing, Packaging and Allied Trades Research Association surveys the problem of fluffing, and is based on an investigation into the effects of fluffing on the various printing processes together with the factors influencing the degree of fluffing experienced. The study was carried out by the circulation of a questionnaire to about 400 member firms, then by works visits and finally by examining fluff samples. Future work will be on a more detailed analysis of fluff samples, investigations of printing conditions that may influence the degree of fluffing, and the development of a suitable fluff tester.

IN OFFSET

The investigation confirmed that offset lithography was the process most affected by fluffing, and the degree of trouble depends on the nature and standard required of a job. Thus a paper giving trouble on one job may be quite good for less exacting work.

IN LETTERPRESS

In letterpress work, fluff trouble is almost entirely confined to printing on very loosely-made papers such as antiques and featherweights, and on long runs of bank paper. The bulkiness of the paper appears to govern the degree of fluffing on antiques and featherweights, that

important part in fluffing. It was found that esparto, straw and hardwood fibres have a pronounced tendency to pick preferentially from papers in which they are incorporated. Most cases of fluffing investigated have been on papers containing 50% or more of these fibres in the furnish.

Another interesting point brought out is that fluffing troubles sometimes arise on one side of the sheet only. This is caused by the fact that loading, which may lead to fluffing trouble when it rises above about 10%, has a pronounced tendency to concentrate on one side of the sheet, usually the felt side. A paper having a loading of 18% can have 10% in the wire and 25% in the felt side, says the Report.

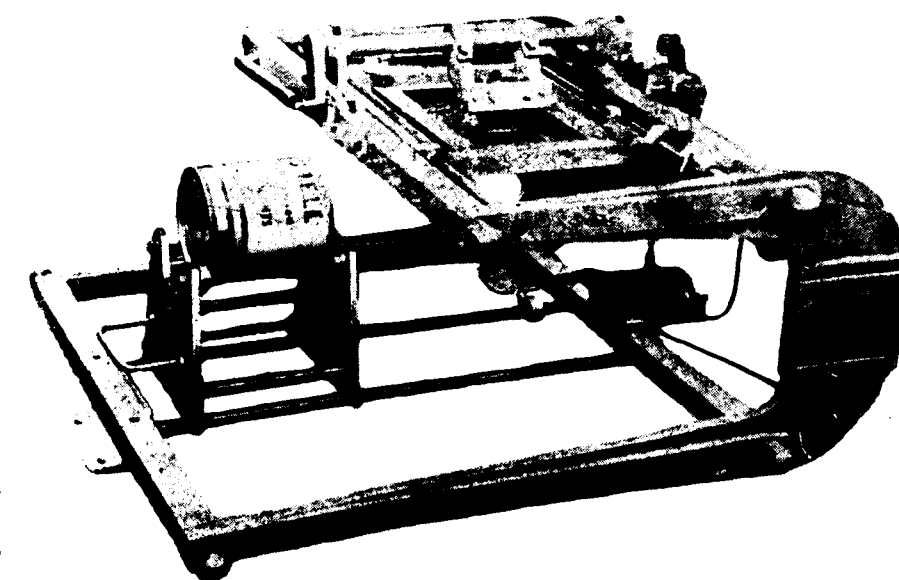
CARTONS

As regards cartons and box boards, experiments showed that fluffing was almost invariably caused by flakes detaching from badly cut edges, or by fibres being removed from the back of the board, by friction at the feed, or by tacky ink while standing in the stack between printings.

Laboratory tests have shown that paper composition plays an

A PAPER PROBLEM

The properties of a paper which give dimensional stability, opacity and good printing quality will tend also to give a fluffy paper. Therefore, part of one required property must be sacrificed to obtain another. The Report states that the best method of obtaining all the properties required in the base paper together with a good



Rondec Cylindrical Screen Printing Machine

surface, would appear to be by surface-sizing, usually with starch. In short, fluffing appears to be very much a paper problem, and to quote from the Report:—"Printing conditions which could influence fluffing are being investigated. The possibility of collecting loose fluff before it reaches the blanket (in offset lithography) could be considered, and this could be done most easily with a vacuum brush. A brush which only stirs up the fluff, without collection, appears to be more of a hindrance than a help.

RONDEC SCREEN PRINTER

Specially designed for printing on any type of rigid cylindrical container in metal, glass or plastic, and particularly suitable for the branding of partly printed litho containers is the Rondec silk screen cylindrical printer, made by Gayler & Hall Ltd. The semi-automatic Model No. 102 will produce 600-900 impressions per hour on any type of rigid cylindrical container, including cosmetic containers, paint tins, bottles etc., within the range of $\frac{1}{4}$ " to $4\frac{1}{2}$ " diameter up to 9" in length.

Using the silk screen process, the machine is simple in design and principle, and need only be operated by unskilled female labour. The change-over of printing one size container to another size is done by merely changing to the appropriate carriage, and approximately three minutes is all that is required to change over the printing screen.

All the frames are silk covered and fitted with stencil, so that they are immediately ready for printing, and any style of design can be incorporated for faithful reproduction within the maximum type area of $3\frac{1}{2}$ " x $4\frac{1}{2}$ ", including print size down to 6 point. The quality of print always remains constant and is equal to litho finish and cannot

be affected in any way by climatic conditions. Operation of the machine is from any compressed airline with a pressure of 30 lbs. per sq. in.

A larger machine, Model 303, is also available, suitable for printing on 5-10 gallon drums, and 2-5 minutes after printing the drums can be filled, thus eliminating the problem of storage space due to large variations in products.

LITHOTEX REPRO UNIT

The latest addition to the wide range of photo-mechanical equipment made by Pictorial Machinery Ltd., a subsidiary of the Monotype Corporation, is the Lithotex repro-unit, which has been specially designed for the production of lithographic plates for the small offset type of machine. Camera, retouching desk, whirler and printing down frame are all included, the complete unit being delivered in a specially constructed packing case which serves as a bench and sundries storage cabinet after installation.

The camera will make first-class line negatives and, by using a modern "screen included" film half-tone negatives can also be produced. A 13" Wray lens is fitted, and the range of enlargement and reduction is obtainable by fixed positions to certain scales between 1:2 and 2:1. The ground-glass focusing screen is part of the dark slide, which enables sizing to be extremely accurate if intermediate scales are required. Copy lighting is by six 100-watt lamps of standard pattern.

By removing the black backboard from the copyholder and swinging down two supporting arms, a retouching desk is available for negative spotting and touching up. Illumination is provided by the

copy lamps, only one being required on each side.

Pushing the camera carriage to its foremost position reveals the simple hand-operated whirling tray. The plates up to $14\frac{1}{2}$ "x $17\frac{1}{2}$ ", are held on to the rotating base plate by simple moisture adhesion, and coating is carried out in the normal way, and drying is carried out by a hand air-drier supplied as part of the equipment.

In printing down, two pieces of $\frac{1}{4}$ " plate glass are used to obtain required contact and, although the weight and surface of the glass provide excellent vacuum properties, two pressure clips further ensure adequate contact during exposure.

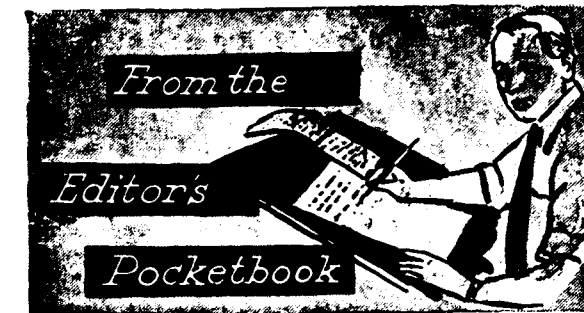
For exposing, a tungsten-ballasted mercury vapour lamp is used, which is economical to run, extremely clean in working, and has an intensity equal to that of an enclosed arc lamp. (See *Printindia* September 1956, Page 29.)

BARYTA SPECIALITY PAPER

A new paper with many applications in the printing industry, although primarily developed for the photographic trade, has been introduced by Wiggins Teape & Co., Ltd., known as Baryta, this is a wood-free paper made from chemical pulp which is then coated much in the same way as art paper but with a white precipitate of barium sulphate. The object of this coating is to provide a smooth white surface which will give the maximum contrast to anything printed upon it. The name "baryta" is derived from barium sulphate which is a heavy white precipitate formed when sulphuric acid is added to a solution of barium salts.

This quality of maximum contrast enables a first class pull of text or other letterpress matter to be obtained, better than is possible

(Continued on page 29)



GOSS ROTARIES LEAD THE REST

Some of the Madras weeklies with a six figure circulation still print on flat-bed letterpress machines. They have found keeping the deadline hard, thanks to the many two-colour formes and the total number of pages per issue. One or two of these language weeklies have been regularly giving out their formes to other city presses for printing, being unable to cope up with it themselves. No doubt their presses work two or even three shifts, i.e., round the clock. Still, the enormity of the total number of impressions per issue makes it impossible for them to execute the same single-handed.

In these days of speed, these weekly publishers have not thought of fast auto-fed machines with large area. But they can go one step further and instal a rotary magazine press which will ease the bottleneck in magazine production.

GOSS ANSWER TO BOTTLENECK PROBLEM

The famous Goss Printing Press Co., USA have successfully solved the newspaper production problems including that of colour which the advertisers very much hungered for. Now they have come to the rescue of the magazine publishers.

These are the days of rising costs. The primary concern of every publication is how to reduce production costs and increase net profits. The features of Goss Magazine rotaries are: speed, dependability and low maintenance.

The world's fastest magazine presses printing up to 1500 feet of paper web per minute, about 20,000 copies per hour. Whereas sheet-fed flat bed machines, even if automatically fed cannot cross the 5,000 copy line.

VERSATILITY

The capacity of Goss magazine rotary presses ranges from 32 page machines to 196 page ones. These may be monochrome or multi-colour. All the time high quality is maintained along with high production. The maintenance of quality is assisted by

such latest devices such as automatic electronic register controls, jaw collecting type or former folders and wire stitchers.

Abnormally long runs are withstood without stoppages or shutdowns by the Goss magazine rotaries. The net output is increased by reducing the unit operating-costs, which again is due to advanced design and dependability.

Large diameter impression cylinders and solid steel forged plate cylinders extend close to press frames. These give maximum stiffness and minimize deflection. Precision pre-loaded bearings assure uniformity of impression and dynamically balanced rollers and cylinders, including large impression cylinders and folder cylinders, improve printing quality.

INKING ARRANGEMENTS

The inking unit is independently driven and gives uniform shaft loading. This reduces paper wastage by permitting driers to get up to heat on start up before printing. Power fluctuations are minimised by balanced oscillation of drums and rollers. The most discriminating judge of highest quality printing will be pleased by the advanced Goss design which gives the finest ink lay. Closely-spaced fountain keys provide finest colour gradations.

Goss web-aligning devices and motorized compensators provide continuous side and back-up register. The basic design permits application of the electronic eye. The flexible folding blade assures an accurate fold at highest speeds, while the laminated flexible jaws allow unbalanced signatures to be run side by side.

ACCESSIBILITY & MAINTENANCE

Maximum accessibility throughout the press affords convenience in webbing up and in making ready. Goss design facilitates routine maintenance. Automatic lubrication allows high speed operation and reduces maintenance. This assures the adequate amount of lubricant for each vital part, with minimum attention by operators.

Supplements and circulars may require frequent changes of logotypes and addresses. These are provided for in the Goss Non-stop Imprinter. Thousands of changes on each run are thus made possible. For consistent superior quality, executives prefer Goss magazine Presses. Their outstanding performance at high speeds and greatest efficiency are proved by production records of magazine establishments which have installed Goss Presses.

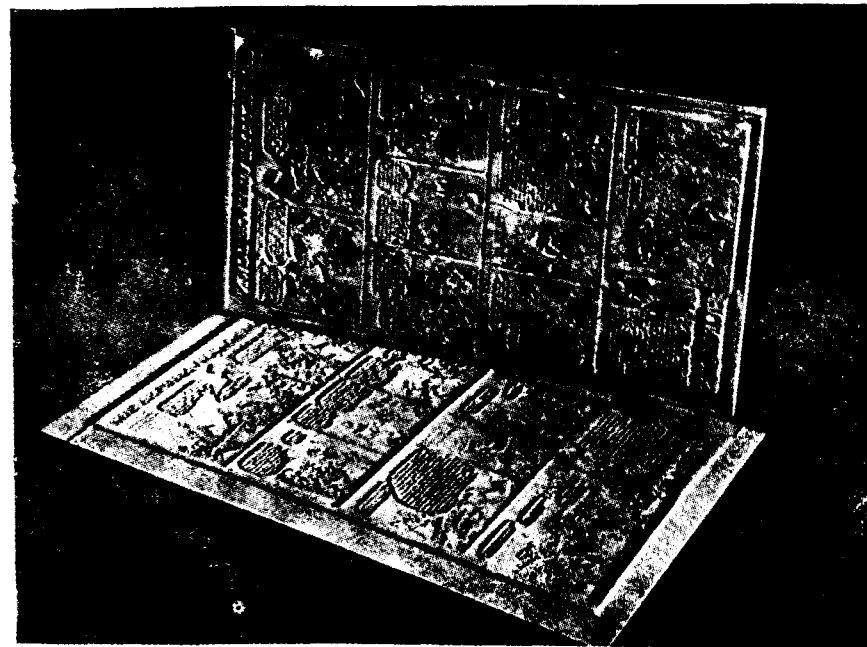
The language weeklies of Madras and other Indian cities can now seriously think of cutting down

their operational costs and increasing their output by installing a custom-made Goss magazine rotary. This is the only answer to their production problems which have been evading solution all these years. With increase in circulation and in the number of pages, publishers of magazines are at a fix as to how to bring out their magazines in time. They are now sacrificing much of the get-up which is obtained by multi-coloured pages and advertisements. All these are offered by Goss Rotaries.

METAL BOX COMPANY OFFICIAL HONOURED

Mr. Donald Spalding, printing Manager of the Metal Box Company of India, Ltd., was presented with a Rolex Oyster watch in token of his having completed 20 years' continuous loyal service with the company, at a function held recently, in the canteen gardens of the company, Tondiarpet. The presentation was made by Mr. H. Chiswell Jones, Chairman and Managing Director of the Company. Mr. F. W. Rankin, Technical Director of the Metal Box Company Ltd., London, who is on a short tour of India, was also present.

Presenting the watch, Mr. Chiswell Jones traced the progress the Company has made from a humble beginning 24 years ago, and said that he and his fellow Directors would do everything in their power to see that the Company's young men were given ample opportunity to display their talents.



Stereos made from Darvic Sheets.

Mr. Rankin conveyed to the employees the greetings and best wishes of Sir Robert Barlow, Chairman of the Metal Box Company, London, and congratulated everybody concerned for maintaining the factory tidy, clean and technically efficient.

Workers in the Printing Department garlanded Mr. Spalding and presented him with a silver vase.

WAGES IN USA GOVT. PRESS

The Government printing Office of the United States of America recently called for hands in the press. The call included proof-readers, Lino operators, Mono operators, printers etc. The circular reveals the wages offered in the Government Press of the United States.

A compositor or proof-reader will be paid on an entrance pay scale of 2.93 dollars (Rs. 14) per hour. This works out to more than 56 rupees per week or Rs. 2,500 per month. Readers may kindly compare the wage level in the printing industry in India. A compositor is paid no more than Rs. 80 inclusive of cost of living allowance per month. Even assuming that senior hands are paid Rs. 100 a month on an average, the *Indian worker gets only a mere twenty-fifth part of his American counterpart.*

DARVIC PVC SHEET ICI

One of the important products with many industrial uses is Darvic PVC Sheet. This is manufactured by the well-known firm of Messrs. Imperial Chemical Industries Ltd.

On Page 29 of *PRINTINDIA* December 1956, we have reviewed at length the many characteristics and uses of this product. We reproduce here a photograph of stereoplates made from Darvic Sheets. The important qualities of printing surface made from moulded Darvic Sheets are absence of wear upto 7,50,000 impressions, ease in manufacturing Darvic stereos, robustness and durability of the surface. The quality of print produced by Darvic stereos are superior than that of metal ones and there is no shrinkage at the time of moulding. Further particulars can be had from Messrs. Imperial Chemical Industries Ltd., Madras-1.



CALCUTTA ASSOCIATION'S SUCCESS

The Calcutta Association of Master printers, sometime back represented to the Government of India, regarding exemption from excise duty in respect of waxed paper. The Secretary in a letter to the Editor, *Printindia*, informs of the association's success. The Government have now exempted the above item from the levy of excise duty. We reproduce below the Government communication announcing the exemption:—

"It has since been decided that 'waterproof paper' other than waxed paper is not liable to Central Excise duty. The Government of India have also exempted 'Waxed Paper' from the Excise duty leviable thereon subject to the condition that it is proved to the satisfaction of the proper officer that the indigenous paper used in the manufacture of 'waxed paper' is duty paid."

All printers, print-users, paper dealers and paper buyers will welcome the above measure which gives great relief. When one remembers that the resulting exemption has been brought about by proper representation of the accredited representatives of printers, i.e. "The Calcutta Association of Master Printers", it proves that there is nothing that cannot be achieved by united, concerted action through Printers' Associations.

The matter of import restrictions on printing machinery, increase in

import levy, taking off newsprint from OGL and other matters which have created hardship for printers and which hamper progress of printing industry, will we hope, be taken up with the Government by the Printers' Associations and achieve the same measure of success. Bengal, as usual, leads the way.

PRINTING CONFERENCE & EXHIBITION, 1957

The venue of the ensuing Printers' Conference & Exhibition has long ago been fixed as New Delhi. But the dates had to be finalised considering the forthcoming elections, during which the world's greatest democracy goes to the polls. The Delhi Printers' Association who will play the hosts have fixed April 2, 1957 as the opening day of the above deliberations. Mr. G. Kapur and Mr. A. Kumar will be the secretaries in charge of the arrangements. The leading manufacturers of printing machinery from all over the globe will display their latest machinery and equipment. The Exhibition this year at India's Capital will be a grand show and a great event too.

UNIVERSITY CENTENARY EXHIBITION

The University of Madras are celebrating the Centenary, on completing a hundred successful years of education. As part of the Centenary Celebrations an interesting exhibition has been arranged. The Regional School of Printing which has completed 32 years of useful service in the cause of the

Printing Industry in India has a well decorated and interesting stall. Various illuminated slides showing the evolution of Printing machines, Monotype and Linotype, as well as Original Heidelberg automatic machine at work are displayed in this stall. Items of packaging which is a new course started in the Regional School of Printing recently are also displayed here. The Regional School of Printing Stall has attracted much attention and spectators thronged throughout the opening hours. The University Centenary Exhibition is held at the Engineering College Ground, Guindy and will continue for a fortnight.

Among distinguished visitors who appreciated the R. S. P. stall are Sri B. Ramakrishna Rao, Governor of Kerala and Sri C. Subramaniam, Minister for Education.

PICTURE TRAVELS 11,000 MILES IN 24 HRS

Lasse Hall won the Olympic Modern Pentathlon. This is sports news. Within 24 hrs. of this event, the champion's photograph was reproduced in a Stockholm daily "Dagens Nyheter." This is printing news!

Pentathlon is a contest consisting of five exercises: wrestling, discus throwing, spear throwing, leaping and running. The winner's photograph in colour was transmitted to a European paper for the first time. The picture was transmitted from Melbourne, Australia, to Stockholm, Sweden, a distance of over 11,000 miles. The following time table of this super-speed reproduction of colour photo will be interesting to Indian readers, who are generally surprised to see the previous day's local events pictorially reproduced in the next morning's dailies.

2-45 a.m. Picture taken near Melbourne

7-00 a.m. Film developed, dried, two pictures selected, colour separated, paper prints from negatives made.

11-15 a.m. Transmission of picture started over frequency modulated short-wave radio via London, Amsterdam, Hamburg and Copenhagen.

4-30 p.m. The 3 part pictures ready as photo prints in colour laboratory for estimating in a colour analyst.

5-00 p.m. After re-touching they were ready for reproduction. Meanwhile a second picture was received from Melbourne which was found to be better than the first.

5-40 p.m. Second picture ready after re-touching, photo-engraving started.

8-45 p.m. Three-colour blocks are ready, test proofs approved, matrices hot moulded, stereo plates pre-registered, routed and nickel plated.

10-00 p.m. Yellow plate ready

10-30 p.m. Red ready

11-00 p.m. Blue ready

1-13 a.m. Printing started

By morning, the champion's picture in beautiful colour appeared in 3,47,100 copies of the Stockholm daily "Dagens Nyheter."

This is perhaps the first time that a picture in colour was reproduced so quickly at such a distant place. Truly, this is a feat in the race against time and the Swedish are to be commended.

GOSS ROTARIES TOP WORLD'S BEST

In Madras most of the dailies have Goss Rotaries, with a colour

unit. "The Hindu" pioneered into the colour field, first in India. "The Indian Express" followed suit, to be further followed by the language papers "Swadesamitran", and "Andhra Patrika."

Recently A. Mc Ewan, Managing Director of the Goss Printing Press Co., revealed that since the II World War more Goss units with colour have been installed throughout the world by newspaper establishments. There has been an increasing demand for presses capable of printing colours. For good newspaper colour printing, a first class rotary machine is vital; worn or badly designed machines give faulty register, excessive vibration and cylinder deflection causing a lot of trouble. The effects of cylinder and roller bounce are very bad. Even with the most precise electronic instruments absolutely perfect register could never be guaranteed, Mc Ewan said, on a newspaper rotary, because of variations in temperature. However, a modern rotary press ought to be able to register to within half a dot.

NEW EDITOR OF PENROSE ANNUAL

Every year's Penrose Annual is a record of the best in printing and allied industries. R. B. Fishenden had been the editor of Penrose Annual for 21 years and died recently after beginning the work on the 51st volume (1957). This year's volume will be in the nature of a commemoration volume to late R. B. Fishenden and will be completed by a committee consisting of associates of the late editor. This includes such veterans as H. M. Cartwright, Mrs. Beatrice Warde (of the Crystal Goblet fame), R. S. Hutchings, Anthony Bell, etc.

The 52nd Volume to be published in 1958 will be edited by A. Delafons, editor of "Coal", the

coal board magazine, and former editor of *Caxton Magazine*, *Modern Lithographer* and *Offset Printer*.

TYPE HEIGHT AROUND THE WORLD

The height of type, block, rule, border and other printing surface materials have been, it is said, standardized long ago. Yet, what a variety of type heights we see below in the countries of the world.

Argentina	Australia
Burma	Canada
China	Columbia
Costa Rica	Cuba
Ecuador	El Salvador
Guatemala	Honduras
INDIA	Japan
Malaya	Mexico
New Zealand	Pakistan
Panama	Paraguay
Peru	Philippines
Puerto Rico	Santo Domingo
South Africa	Tasmania
United States	Uruguay
Venezuela	West Indies

All .918"

Austria	Czechoslovakia
Denmark	Egypt
France	Sudan
Germany	Greece
Iceland	Israel
Latvia	Madagascar
Morocco	Norway
Poland	Portugal
Sahara	Spain
Sudan	Sweden
Switzerland	Turkey

All .928"

Other Countries vary between .918" and .990"

Didot height	23.56 mm. (.928264")
English "	23.30 mm. (.91802")
American "	23.32 mm. (.918808")

1 mm. = .0394 inch

PRINTINDIA

Meet the Compositor (Continued from page 16)

This is also the compositor's job to find out. Experience counts a lot in the composing room.

HIS STYLE

What is the style of indention, capitalization, abbreviation, heading, leading, notes, etc., adopted in the press? The comp has to find out and adopt that style, known as the "Style of the House." If the author insists on a style of his own fancy, "the style of the work" as it is called, is to be followed. Uniformity has to be maintained in a book as regards word division, spelling, indention, captions, chapter heads, etc.

There is a signboard somewhere in a southern town which asks the man who spits at a public place to clean it with his own hands! The compositor is asked to do some similar things daily: Whenever he commits a mistake knowingly or not, the mistake comes home to him to be corrected by himself. The philosophy of fate, the truth of cause and effect cannot be brought out more effectively than in the life of a compositor.

WORD SPLITTING

A word can be divided, but not at any place you like, in any way it pleases you. As proofs of bad divisions here are a few howlers: To-get-her (Together), Fat-her (father), (Mot-her), Babylonian, re-quire, knowl-edge, tougher, etc. The compositor should know the rules of word division, punctuation, indention, spacing, imposition, etc. His duty does not end by merely setting the matter. He has to read the worst hand-writing. *Famous authors and writers are famous for their bad, illegible handwriting.* But for the ingenuity of the compositor,

the fame of these authors would have been ead before it was born. The comp has to know all about proof-reader's marks. (Many authors do not know anything about the proof-reader's marks. They use their own new set of marks, known only to themselves and the comp has to bear the brunt of the author's childish fancy.)

SPELL IT OUT

An author can slip in spelling (or blissfully be unaware of the correct spelling). But the poor comp has to be thorough with it. Even good grammar will be of help. Abbreviations and contractions have to be elongated by him while setting. Foreign words have to be set in italic. If in a large-sized heading a mistake is committed, they would nearly hang the proof-reader and murder the compositor.

VARIETY—THE SPICE OF LIFE

The compositor has not only to do with a variety of sizes from the tiniest needle like six point (or Nonpareil) to the giant 72 point. These assortments of type look like a family having children from the age of 6 to 72! But he has to contend with a room-ful of type faces. Imagine a big mammoth election meeting addressed by Nehru. (Not in Gujerat, for there will be disturbances at those meetings!) If any one asks you to identify and name every man, woman and child, how would you feel? The compositor is in a similar predicament in the composing room. All types in the room is to be called by their Christian names. Yet, the compositor accomplishes the impossible. He recognizes every one of the type faces: Aristan (Script), Bodoni (Modern), Centaur (Classic), Dom Casual (Modern script), Elzevir (good old face), Futura

(Sanserif), Goudy (Old face), Plantin (old style), Rockwell (square serif) etc.

ENTER THE ARTIST

You want to build a house. Do you start straightaway with bricks, cement, wood, iron and what-not? You prepare a plan, draw up an estimate, list the materials and then call competent engineers to begin building as per plan. Planning to print is the job of the comp. This plan is called "Layout." The arrangement of type lines, their size, face and form are given. The decoration or border round it, the illustration, everything goes into the plan. The comp has to execute the job as per plan with the available materials in the composing room. An artistic perception is called for here to set graceful advertisements, to attract the eye of the readers. A good layout in the hands of a bad comp is like the flower garland in the hands of a monkey. A bad layout in the hands of a good compositor will emerge as best as possible. The comp gives shape to the urge of the businessman and the design of the artist is given a concrete form by him. The appropriate selection of types and the artistic presentation of the same is called display setting. No one has come out with any machine which replaces the job compositor. He still reigns supreme in the Job room.

SPEED AND MORE SPEED

In these days of speed, the hand compositor is becoming fast a relic of the past, bullock-cart age. But in a bullock-cart country like ours, the hand compositor is still much in evidence. His days are not so easily ended. For the poor press-owner, he represents the sweated labour. His wages are lowest in the labour world. Perhaps, curiously enough, that

is why he continues to be in existence. Once the hand compositors make themselves costly, the machines will be preferred to the trouble-making men! Machines do not ask for leave nor demand wages, nor bonus, nor want to strike, go for arbitration, ask inconvenient questions. Machines, when their time is out, they stop for good. But man plods on, till the inevitable takes over.

WAGES OF VIRTUE

For all the virtues of truth, honesty and labour, the compositor in these parts gets a pittance of 20 rupees to start with. Older and abler men get about Rs. 80. The Central Govt. Presses pay him Rs. 125 per month. The high watermark is reached there! The compositor slaves at the composing frame standing for eight hours a day. He lifts heavy galleys, heavier formes, works in dingy

ill-lit-corners, looks at dirty types, scratches the dirt on the type face to find out whether it is c or o, 6 or O and scratches his head of unkempt hair about an illegible line in the manuscript. He has a room-ful of types, spaces, quads, quotations, leads, clumps, furnitures of all kinds, rules of many varieties, locking up materials, cases of varying kinds, and many other things like the rule cutter, mitreing machine, imposing surface, proofing press etc. He employs all of them to earn his bread. No other man has laboured so much for so little!

THE FUTURE

If anyone says that hand-composing is to be abolished by an ordinance or a bill of the legislature and composing machines will take its place, he is indulging in a nightmare. True, the machine-age has come, but in an impoverished

economy like ours, there is a growing demand for cheap labour. What other cheaper labour can any one think of than our patient compositors! If anyone says there is no future for the compositors, I make bold to say they are wrong. There is a future for everybody. For good things a future is always assured. Hand composing is not a bad thing. Therefore there is going to be a future for hand composing and hand compositors. But what sort of a future it is going to be, time alone can tell. If the compositor in addition to being a mathematician, linguist, grammarian and an engineer, is also an astrologer, he only can tell! We can sing with Alfred Tennyson,

Machines may come
Machines may go
But the Compositor
Goes on for ever!

In the manufacture of Printing Inks

EQUIPMENT IS ALL IMPORTANT

THE FINEST INGREDIENTS AND SCIENTIFIC KNOWLEDGE
ARE WASTED IF THE MACHINES ARE WEAK OR OLD.
ONLY POWERFUL MILLS CAPABLE OF PRECISION GRINDING
CAN PRODUCE A REALLY GOOD INK

AND THIS IS THE IMPORTANT FACTOR IN

GANGES INKS

THEY ARE PRODUCED ON POWERFUL GRINDING MILLS OF THE
MOST MODERN TYPE. THE RESULT IS THAT THE PRINTER GETS

THE BEST QUALITY IN INDIA

Electronics in Photo-Engraving (Continued from page 18)

transparencies as well as opaque copy, can enlarge and reduce, produce positives as well as negatives, and can turn out screened separations in addition to continuous tone separations.

In preparing for its colour system, Fairchild has developed a unique device known as the Photo-Screener. The effect of the Photo-Screener is to convert the SCAN-A-SIZER from a platemaking machine to an electronic halftone camera. It composes a screened negative dot by dot, rather than by the conventional method of an overall exposure through a screen. Its output is a dot by dot light exposure on film rather than engraving on a plastic printing plate. Through its built-in electronic controls, this electronic halftone camera is expected to produce better quality screened negatives than can a standard camera.

This electronic camera, or photo-screener, will be of great value in high quality colour work. At the present time, one of the difficult problems in colour work is lack of uniformity of emulsions and in the variations in the processing of continuous tone films. Temperature, time of exposure, and film characteristics must be checked and controlled very closely for uniform work. With the Photo-Screener, it is possible to go from original copy to a screened negative or positive in one step. The dot laid down by the Photo-Screener is of variable area and constant density and goes on a high contrast film. This operation bypasses the continuous tone film with all its attendant processing control problems.

Fairchild consequently will have several variations of two basic

models of colour equipment. One machine will scan colour originals, transparent or opaque, and produce letterpress printing plates directly with automatic change of size. This machine will be the SCAN-A-SIZER modified to incorporate an electronic colour computer. A three-colour ROP version of this model will be the first Fairchild colour equipment to be marketed. The second basic model will combine the SCAN-A-SIZER with the Photo-Screener. A machine will then be created which will accept original colour copy, transparent or opaque, and produce, to size, a set of colour corrected, screened negatives or positives in either 3 or 4 colours. In both of these machines one plate or separation is made at a time. In summary, it is the plan of Fairchild to combine in one operation the functions of colour separation, electronic colour correction, size change, and the production of either a finished halftone plate or a screened film image.

I have presented to you a panoramic survey of electronic equipment and services. Some of these are now available and are being displayed. Others will be available in the not distant future. Here is the result of millions of dollars in research by an impressive line-up of blue chip organizations—in England, Crosfield and Hunter-Penrose; in France Belin; in Germany, Dr. Rudolf Hell; in Switzerland, Elgrama; and in the United States, Time-Life, NEA-Acme, Radio Corporation of America, Miehle and Fairchild Graphic.

I sincerely believe each of you who is interested in the competitive future of photo-engraving and the letterpress process should acquire personal understanding of this evolutionary electronics programme.

Commence now to think of electronics as one of the new tools you will need to meet the challenges of your competitive future.

A half century ago, photo-engraving stood almost alone in visual communication to a large audience. Today, television, movies and slide films form graphic arts' giant competitors. The tomorrow of photo-engraving rests in your hands. We in electronics research can only tell you of our work.

The accompanying chart on page 30 gives a comparison of all of the colour scanners with the planned characteristics of each.

From Our
London Correspondent

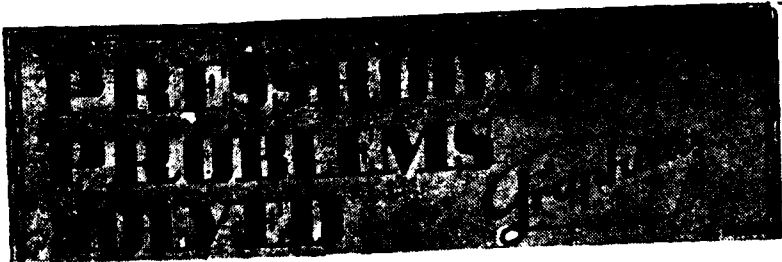
(Continued from page 22)

with even the best art paper. It is, however, too expensive to be considered seriously as a substitute for art paper for normal runs of work, and in the letterpress process the chief advantage is its suitability for camera copy. There is a blue whiteness which throws into hard relief the black of the type pull, and the barium sulphate coating has an absorbency which allows a perfect evenly inked pull to be taken from a letterpress proofing press. It is also ideal for making line blocks enlarged from original blocks since the block-pull is sharp and clean.

Another good property is transparency, due to the fact that the body of the paper is exceptionally pure, and if exposed to strong light it will be noticed that no blemishes can be observed. Because of its transparency in strong light, it can be placed in a contacting frame and any letterpress pull or black ink drawing can be contacted to negative film without the delay and expense of camera work.

ELECTRONIC COLOUR SCANNERS

	Preliminary Separations Required.	Transparency Original Copy.	Opaque Original Copy.	Letterpress Plate Produced.	Continuous Tone Negative Produced.	Screened Negative Produced.	Change of size.	Separations Produced Simultaneously.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Time-Life		x			x			x
2. RCA	x				x			
3. NEA-Acme		x	x		x(a)			x
4. Fairchild		x	x	x			x	
a. Plate								
b. Film		x	x			x(a)	x	
5. R. Hell		x	x	x				
a. Plate								
b. Film	x				x			x
6. Crosfield	x	x			x(a)			
7. Hunter-Penrose			x		x		x	
8. Miehle		x	x		x			x
9. Belin		x	x		x(a)	x	x(a)	
(a) either positive or negative.								



In these pages "Graphicus", an expert in the printing and allied industries, solves month by month Pressroom Problems of the printers. All questions may be addressed to "GRAPHICUS", C/O PRINTINDIA

133. Q. We have a battery of platen machines of various sizes. Now they are run by foot or treadle power. If we connect them with electric power, do you recommend individual motor? Can't we do with some sort of shafting, overhead or underground? I would be much obliged for the valuable reply on these points.

A. The modern trend is to fit individual motors on all machines, this practice has been found to be far more satisfactory and economical than the use of shafting.

134. Q. In the New Year we are shifting to a more commodious building of two floors. I wonder whether you could help us with a rough plan of arranging our composing, machine and binding shops as well as our reading room, stores and administrative section. We are about 100 in all. Thank you in advance.

A. Not having any details of the size of your building or the land capacity of the first floor of course it is difficult to advise you. I would suggest putting all offices on the first floor in front of the building. Any other space on this floor goes to Reading Department and Light Binderies. Unless recommended by a good Architect do not put machine and your composing department on this floor. On the ground floor work your departments from Composing through the Machine room and so to a convenient position for passing work to the binders and despatch department which latter should be near a doorway connected to a road or driveway.

135. Q. We are printing a cover on a stop cylinder machine. A slur has developed on a

solitary line at the back cover. Impression, inking i. e., roller setting, packing, locking have been double-checked. Please throw light on the cause of the slur. I am enclosing a specimen print to help you diagnose the defect.

A. The trailing edge of the paper is fouling the blocks. The print sent to me is an offset print and may be the wrong one. However, this has plate marks similar to the result of slur on a letterpress machine, so the mistake is understandable. If these marks appeared on a similar type of letterpress print it is because the trailing edge of the paper is fouling the blocks. As the paper is lifted round the cylinder to the delivery, this can be overcome by inserting type high rules on either side of the blocks in the direction of the bed run to point on the trim, which rules should extend in length beyond the trailing edge of the paper. In view of the width of the sheet in question, if this does not completely overcome the slur due to possible paper sag, either turn the block lengthwise on the bed and use the same material described above to avoid a slur or support the edges of the paper, clear of the blocks by means of two cords from under the feed board round the underside of the cylinder to some convenient stationary part of the machine; with a little ingenuity they can be taken up round the cylinder.

136. Q. We have a very long run of label work. The labels are of three colours and have to be punched to round shape. We would be obliged if you could advise us on the most economical way to print them, the easiest way to punch them.

A. Depending on the machinery at your disposal and the length of the run it may be necessary to duplicate your three colour blocks up to 10,000 Nos. Print from the original one up and make a duplicate for every 10,000; after that up to the maximum sheet size printable on the machine you propose to use. If the blocks are line blocks, good stereo duplicates would probably serve your purpose but if halftone, electros are necessary. When mounting the blocks ensure it is done in such a way as to afford maximum economy in the use of the paper and also that the printed labels can be cut into strips with two labels across the width to facilitate punching. It is assumed you are using a vertical pressure punching machine with a steel punch. Do not punch more than 50 to 75 strips at one time or the punch may slide out of register on the bottom sheets and ruin the work. It is of course essential to maintain the most accurate register when printing.

137. Q. A lot of baggage cards are to be eyeletted and strung with twine. I shall be grateful if you could indicate any mechanical contrivance for these two operations. The number runs to million cards per month.

A. Machines are available for this type of work and any first class machinery dealer could help you in regard to the best type of machine to serve your purpose. As to whether it is essential to buy a machine will depend on the price of the machine and the running costs in relation to output and the comparative cost of using semi-skilled labour and simple hand operated eyeletters.

138. Q. As a trade composing house we get many setting jobs, display and tabular work, no book work. Stocking all type faces and rules to suit individual preferences is well-nigh beyond our scope. I do not know whether you could help us with any machine suitable for setting job work and statements with or without rules.

A. The machine which would appear to suit your purpose would be a Ludlow Display and Type Caster. I should say if your regular Machinery Dealer cannot help you, please write to the Editor for the address of the makers or their agents.

139. Q. The storing of paper during the cold weather is annoying us quite a lot. The paper gets wrinkled, the edges curl. I would be happy to know from your vast experience here and in the continent of any simple method of storing a lot of reams of paper of all kinds and boards too.

A. Your problem is not unusual and the cause of it is humidity attacking the outside edges of the ream and causing uneven expansion of the paper at that point. The only way to overcome this is to air the paper regularly so that the whole sheet becomes subject to the same expansion. This process involves a lot of work but apart from air conditioning, Humidity Control in your stores is the only way of overcoming your trouble.

140. Q. In this weather my machinemens spoil quite a number of sheets while feeding and in delivery also. Mis-register, set-off, creased sheets are all due to bad feeding and/or delivery. Is this a regular winter feature in all presses or are we having something special here? Please help.

A. Your trouble is probably due to the effects of the production problems. Your ink may have something to do with it and that the ink used in the hot weather would stiffen during the cold months thus causing set off as the paper will not absorb the ink quickly. I have no idea from the question where your Press is located but if your area is really cold in winter unless your Pressroom is heated no doubt your Pressmen suffer from numb fingers and find it difficult to feed the sheet accurately.

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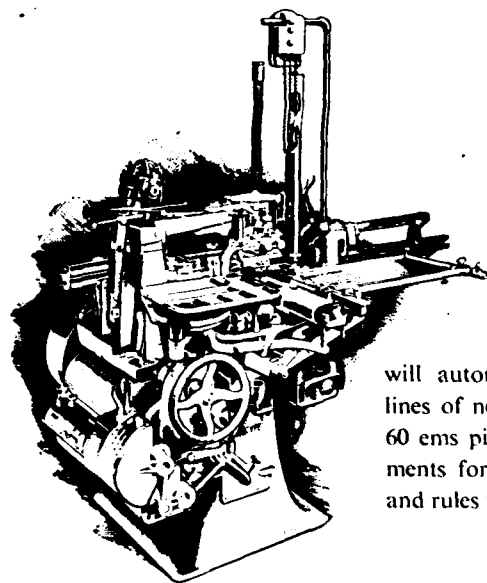


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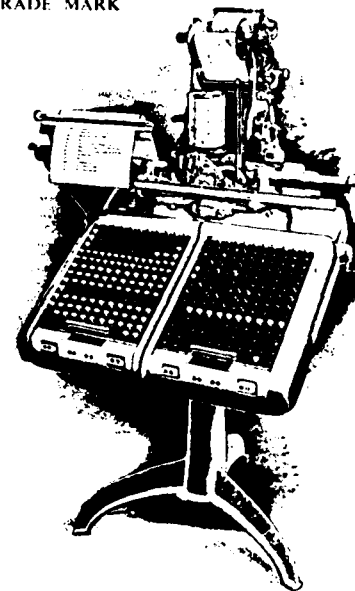
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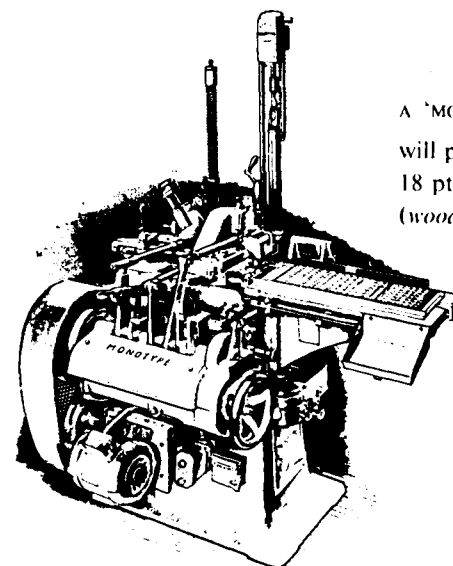


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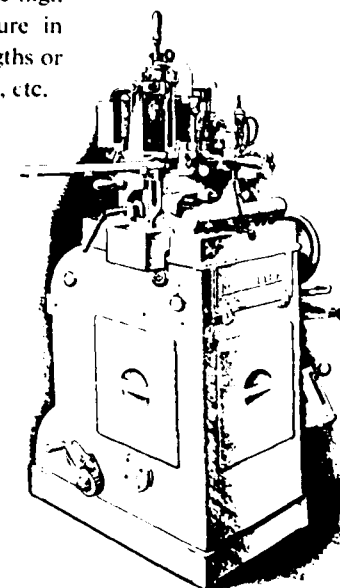
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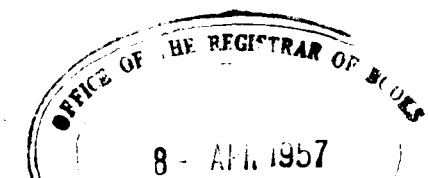
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In this issue

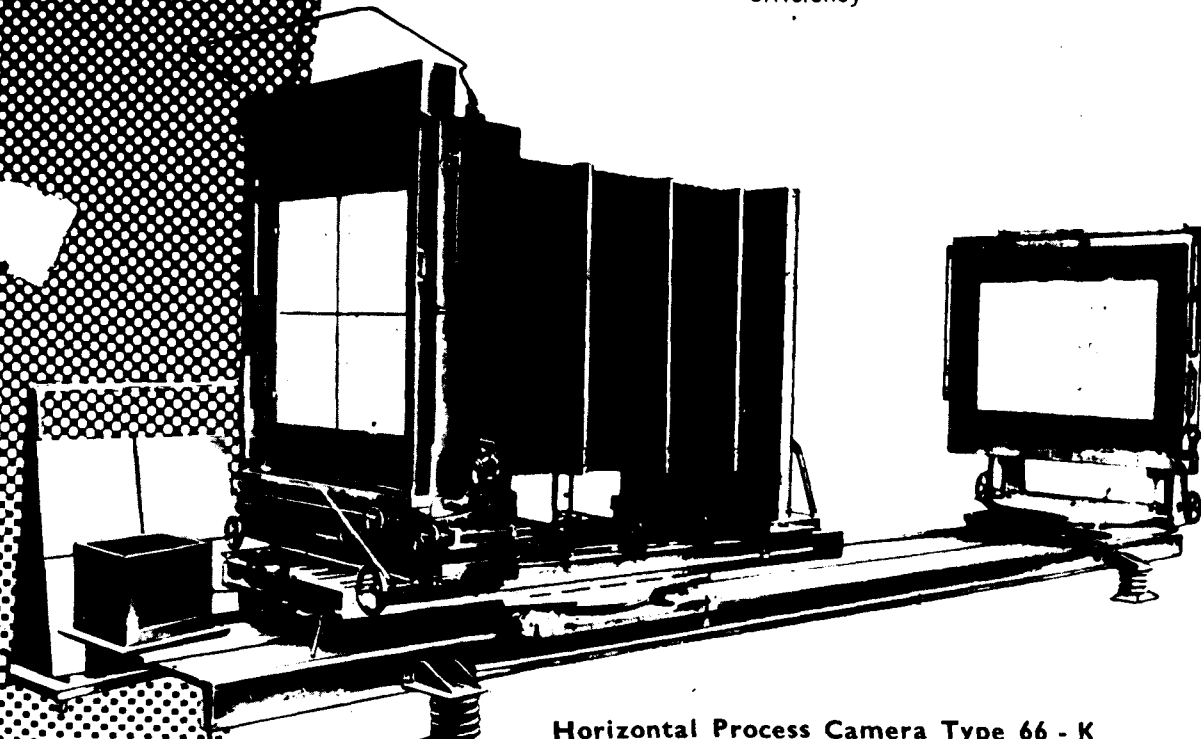
- ★ Human Material: Re-imported!
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- ★ Regional Printing Associations
- ★ Hickeys and Spots in Litho Work
- ★ Printing Process Blocks
- ★ Overlays Why & How
- ★ From the Editor's Pocket-Book
- ★ Regular Features

From Our London Correspondent
Modern Machinery and Equipment
Pressroom Problems Solved
News & Views etc. etc. etc.

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EDITORIAL

Human Material: Re-imported!

A few years ago, a young man appeared before the General Manager of a Bombay printing establishment asking for employment. He had returned from foreign shores and flaunted a few testimonials. He was promptly employed and after some months he was sent out, as unsuitable for any technical job inside a press. The foreign returned youngster took up many a calling including that of machinery manufacturer and in all of them it was proved beyond a shadow of doubt that he was a square peg in a round hole. The moral is that foreign training can only improve existing talent and experience. In this it is like a zero: If added to one, it represents a higher value; If there is no *one*, it remains a simple zero of no value.

There are today many bewildered young men returned from foreign lands. All of them are either un-employed or unhappily employed. A few may claim to be satisfactorily employed, but their employers do not share their satisfaction. The large number of un-employed foreign-returned print-technicians has not deterred more people from going to Europe or USA for a brief while and return, expecting to turn, night into day or vice versa.

What made us choose this subject for the editorial of this month is the abundance of useless human material returned from UK/USA and the increased number that is being shipped to foreign ports to be re-imported after a brief interval.

The days of foreign domination are over. The days of State domination under the guise of nationalization have begun. The days of English language are also being hastily ended, rather abruptly. But the days of love of English dress, English food, English music, English dance, English customs and English manners are not yet fortunately over. But there are hardly many Indians who have emulated the English character,

its thoroughness, its business principles, its organizational greatness, its civic consciousness and other good English traits. It is an Indian trait to be too ready to slavishly imitate whatever we find bad in foreigners, leaving to the winds their good points.

The tobacco from Andhra, the coffee from the valleys of Assam, the tea from the Nilgiris, the cotton from our plains are imported into foreign countries and are re-imported after processing, refining or in some way changing their appearance. Such re-imports are more liked than the original products imported from India. Same is the case with human material imported into foreign lands and re-imported with a few slang words assumed accents and an artificial air.

The man who returns from his foreign study begins to curse the Indian weather, dislikes Indian food, blames his Indian parents and perhaps divorces his Indian wife. Whether he gets a true insight into his subject or not, he definitely gets a false sense of values, out of proportion to his origin and up-bringing as well as the conditions prevalent in his motherland. He wishes himself born in an alien country, and gets disgusted with all things Indian.

With such a state of mind, he embarks on his job hunting and perhaps succeeds in landing a job with a fat pay cheque. Whether he finds his job to his liking or not, all others around him in the press or factory develop a discord, if not outright hatred for him and soon he is on the way out. With a few goings-in and comings-out, he is disillusioned. The foreign mist before him clears. He gets the true picture of his motherland. All foreign bias has gone.

But there are many whose necks have become stiff, thanks to stiff collars and ties, which are totally unsuitable for the tropics. Such re-imported material still retain their dreams of Piccadilly, Bond St., Waterloo Station and other

land marks of London. They are oblivious of their re-import. By refusing to open their eyes to the realities they suffer till the inevitable end. Incidentally they make many dents on the fabric of the industry.

There is the London-returned who is ashamed to talk in his mother tongue. Another is always taxi-minded and even for a few yards of travel will hail a taxi and give the driver a handsome tip, reminiscing of his London days. Such false prestige has cut deep into the domestic economy of the average Indian. We don't know whether the foreign training has done him any good. But it has shattered all his sense of values, put a false colour into everything, over-estimating his capabilities and belittling those of others.

Looking at all these waste of human material, let us see what could be done. There should be a rationalization of all foreign training in printing. If A has a pull in the Home Ministry and can wangle a foreign scholarship on Colombo Plan, we should also see whether he would usefully spend his days in London and on his return whether he can use the acquired knowledge for the progress of industry.

The Government which talks of conserving foreign exchange is blind about spending on foreign travel. We should encourage more foreign travel into our land than the other way out. Wherever the individual is deserving and the national interest demands it, there can be no objection in sending one for foreign training in Graphic Arts.

Another undesirable feature about foreign training is the subject for which an individual is selected. We send one to specialise in "Printing" which may mean anything from Letterpress Printing to Silk Screen, Collotype and Gravure included. It may also mean mechanical composition, machine work, process engraving and all subjects under the main head Printing in the Encyclopaedia Britannica! Such generalisations for a costly foreign trip do more harm than good. These have resulted in a person claiming to have specialised simultaneously in Linotype and Monotype, Ludlow and Intertype; Letterpress flatbeds and rotary erection; process engraving and litho platemaking and also offset machine-work. We are yet to meet a genius who has mastered all the above, but there are many foreign trained men who claim to have specialised in everything. It is time we call off such a bluff.

Again, there are many subjects in which it is worth sending a few of our young men to specialise in UK, Europe or USA. So far, none has gone for training in Commercial Art, Typographic Layout, Lettering Techniques, Display etc. None to my knowledge has been sent for specialising in Binding or Packaging.

Thirdly, some minimum general educational qualifications should be laid down for those who aspire for foreign training in Graphic Arts. No purpose will be served by sending one for foreign training who could not complete his high school. A basic degree in arts or sciences or commerce should be prescribed. In rare deserving cases, under-graduates may be allowed. In no case should a Matric failed or III Form passed influential man be sent on a Govt. Scholarship in Printing. It should be realised that basic general education is a hard necessity. Without this foundation, the superstructure of advanced technical knowledge is a waste, as a fort on sand.

At the present moment, foreign scholarships are doled out to relatives and influential people only. It should change to selection of those with merit and with a good educational background. There appears to be no system in the choice of subjects and any subject is chosen at random. The urgency with which a vacancy has to be filled is another bad feature. All these has resulted in indiscriminate shipping of human material of doubtful value for training which does not interest the person and which may turn out to be not useful for the industry too. We know of cases where an Engineer trained in tools manufacture in USA is doing everything but tools making. Another trained in USA in Visual Education arrived in India to find that there was no vacancy for his qualification. A post was hastily created to get out of the difficulty. There are many examples to prove that (i) no proper selection is made before sending technicians abroad; (ii) there is no co-ordination between the training and the industrial branches; (iii) many foreign-trained hands are either unemployed or are not happily employed.

The Graphic Arts Industry is a highly technical industry. A man's technical attainment in this cannot be brought about by a few months' training abroad. All ambitious young men think that a trip abroad is a short-cut to top jobs in printing. Such an aim is ridiculous, considered from the point of view of the present labour shortage and the absence of practical people. The

City & Guilds Examinations are a challenge to such pseudo-technicians. When one is looking for a man to fill a position of authority, who understands the work in various departments, who can solve the day-to-day problems by his intimate knowledge of the correct procedure and the purpose of various processes, the City & Guilds Certificates are very valuable. Technical Examinations and a pass in them are as important as practical workshop experience, but the practical tests are given relatively an unimportant place. Certificates and diplomas are proofs of a candidate's knowledge of the basic principles. No doubt, a practical work test is also included to test the degree of practical skill. However, mere technical knowledge does not make a man a good craftsman. The conditions in which practical tests are conducted such as the limited time, the accommodation, the equipment and materials available are such that even the best workman cannot show his ability in the test. Only after a man has settled down to the workshop conditions, his ability will be evident.

It may now be clearly seen that the mania for foreign-returned technicians is only a passing fancy and will not deliver the goods in the long run. Wherever such re-imported human material is at the helm of affairs, it needs very efficient and able subordinates to prop it up and make it retain the position. Invariably, such people are mere showboys and function as figureheads, if it could be called a function. The time is ripe to make it clear here and now that any material, human or otherwise, cannot and will not improve in its value by crossing oceans a couple of times. On the other hand, such material might have lost some of its substance during such sojourns. The only way to reorganise the industry is to have efficient men in theory, practice, technique and administration. Our vision should not be narrowed down to miss valuable material, only because it has not been re-imported.

While selecting a Principal for the Regional School of Printing, Madras, we hope that the Government will consider a high general education plus technical qualification in addition to teaching experience and executive and administrative ability. They should not be carried away by merely a foreign Diploma without any background of a Collegiate education or teaching experience. The last two are essential for the Head of a large training institution such as the Regional School.

IT'S QUALITY FIRST—WITH

Raja BOOK BINDING CLOTH!

"It looks superior—it is superior!"

That's why "Raja" is specified by the Government of India and various State Governments.

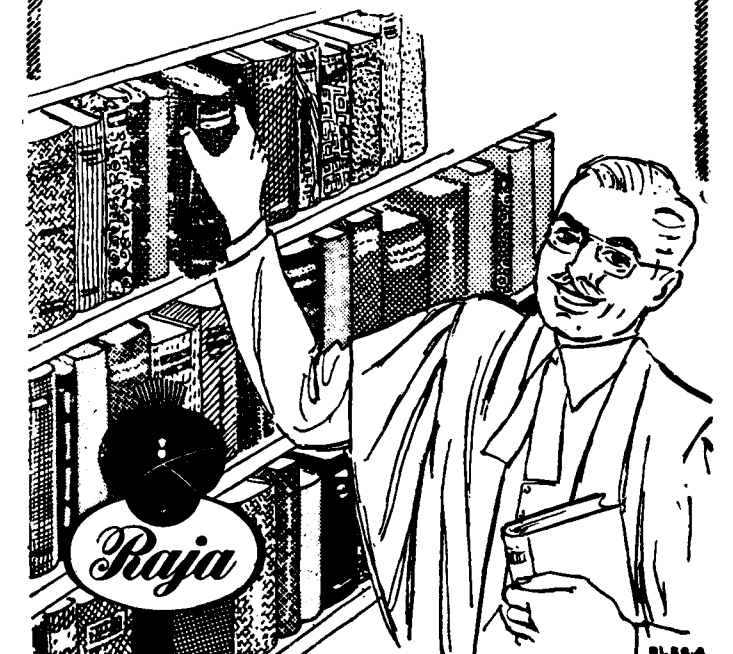
Made by people who *know* and *care*, "Raja" bookbinding cloth retains its first-day look indefinitely, wears better, does not easily tear or perish.

Numerous assorted attractive shades. Embossed and plain.

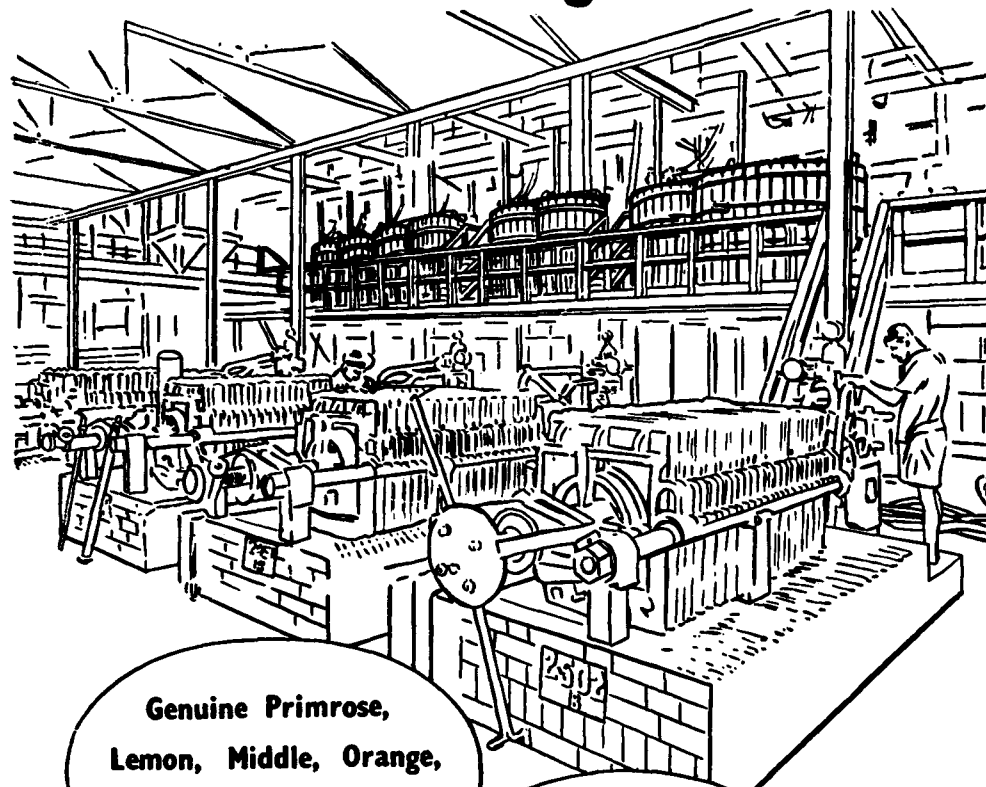
Sample-book on application. Why not contact us, today?

Other "Raja" products: Plastikloth, leather cloth, oil cloth, waterproof cloth.

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Quality Materials for the Paint and Printing Ink Trades



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Layouts AND Lettering

By

Sri RAMAKRISHNA NARAYANAN

Every kind of production requires planning. Printing is no exception. A well-printed work is only a well-planned print. In this monthly feature, outstanding pieces of publicity matter will be reviewed. The healthy criticism offered in these columns is only with a view to improve the quality of typographical arrangement as well as choice of type

JOURNALISTS' WAGE BOARD

The members of the Journalists' Wage Board having finished their sittings, which took them all over India, will be shortly presenting their report to the Government of India. This report is likely to be discussed before the new Parliament after the Elections and a lively debate can be expected. Both the managements and the journalists are bidding their time to hear the Parliamentarians and to see the legislation. If one may hazard a guess about the legislation, a comprehensive enquiry into the structure of newspapers in India from the bottommost rung to the top may well be called for. The journalists form but one part of the complex structure of the present-day newspaper industry. It is natural that the structure as a whole needs looking into and overhauling where necessary.

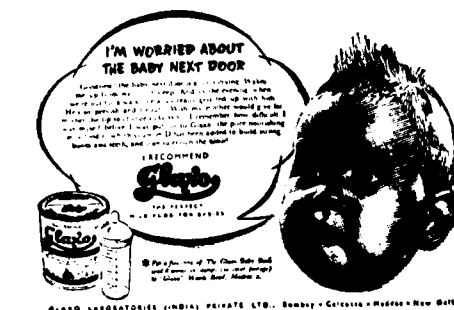
PRESS COUNCIL

While the Press Council in India is in its formative stages and has

many tasks to perform with the State, the general council of the Press of the United Kingdom established in July 1953, consists of 25 members, all from the newspaper industry, and is financed by the constituent bodies. It is worth noting that no subsidy is received from any other source, including Government.

OLD PHOTO & FALSE NEWS

The printer has the ultimate responsibility of justifying what he prints. The recent news item about *Washington Post* printing a fake photo of refugees allegedly fleeing



Sironach's splendid series for Glaxo

Kashmir and its apology the next day come as a shock to Indian readers, who knew the ways of Pakistan but not that of the USA. This underlines the need for caution and vigil on the part of all those concerned with the production of newspapers and other agencies which purvey news all over the world.

A British poet wrote that "child is the father of man". There is no end to what a child may do. With all the guide books of experts the child still remains an enigma. The up-bringing of children all over the world may vary, but the fundamental problems of tackling the young remain the same.

The gentlemen and ladies of tomorrow have to be nourished well. For this, the modern age has provided processed foods. We of the Indian sub-continent are familiar with Cow & Gate, Dumex, Glaxo and Ostermilk. The advertising agencies have efficiently handled the publicity of these products. Here are a few examples:—

GOOD OLD GLAXO

Two 5" x 4" advertisements are reproduced here. Formerly, 10" x 2 cols. were used to tell a story the moral of which was to use Glaxo. In the two selected here, the general pattern is the same, viz., the type selected and the quality of illustrations as well as the address and the trade mark. The illustration is of scraper board, the subject being the baby. The headline is of brush-stroke as is the border, which points to the illustration at the right. A Glaxo tin, plus a feed bottle, round off the elements used.

The first headline reads: "I'm worried about the baby next door" is in dry brush, uneven caps, reminding us of children's handwriting. The whole copy appears to emerge out of the baby's mouth into which, the baby food should



enter. The illustration of a baby's head depicting worry occupies a third of the total space. The main text set in Baskerville continues the concern about baby food, finally ending with "I recommend" in 10 pt. Gill Sans Medium Caps and the "Perfect Milk Food for Babies" in 6-pt. with the Trade Mark "Glaxo" in Bold hand-drawn script. Three lines of Baskerville Italic tell about a free copy, and the address line in Gill Sans Medium inter-spaced concludes this good publicity piece.

The second advertisement of Glaxo says: "I'm head over heels in love" in dry brush script and purposely badly aligned Capitals. None would miss the heart-shaped O in "love." Enclosed in the oval brush border is the copy, explaining about the qualities of Glaxo and ending with the usual recommendation. The illustration is a typical head over heels baby with diaper and all complete, its expression suggesting satisfaction. The same scraperboard drawing, the same Glaxo tin and feeding bottle, four lines of Baskerville and the rest.

Others in this series are titled "Careful! Mind you, don't spill any!" and "I'm watching the clock!". The credit for these highly effective publicity pieces goes to one of the leading agencies of Bombay, viz., L. A. Stronach. The only suggestion for improvement, if we can make, is a change of type for the words "I recommend". A script would better suit

the wording than Gill Sans Medium Caps.

YOU CAN'T DO WITHOUT DUMEX

The Dumex people are using a first class catchword in their advertisements. "Give them Dumex and see how they grow". This only equals the famous slogan of Burmah-Shell, "Fill up and feel the difference". Six months back, a new series was introduced in addition to the usual ones.

Whatever one may think of astrology and the Zodiacal signs, for an Indian background, no better subject can be found than the Zodiac.

A feature of all these 7" x 3-col advertisements is a dotted rule panel with a half-tone illustration at the right. The baby is reproduced in full and not merely the head alone or the bust. The piece begins with the line "If you were born under the sign of" set in the famous typeface Bembo Italic in sizes varying from 12 to 18 pt. for each member of the series. The appropriate Zodiacal sign is (in this case Libra) portrayed to the left in the beginning. The word Libra in hand-lettered angular text-like letters follows. The qualities of men born under Libra are given in



Straight talk on straight backs

three well-spaced centred lines, in 8-pt. Times Italic.

What follows is about the baby food in 8-pt. Times Roman in poetical indentation. The words "Give them" and "See how they grow!" are in Cartoon Lower Case, with the word DUMEX in Gill Heavy. A broken China at the right extreme takes the place of a fine tail piece. This series on DUMEX with its appropriate copy and apt illustrations are the work of Keymers, Bombay.

INSIST ON OSTERMILK

The direct approach is used by OSTERMILK, another popular baby food. The copy is also straightforward, emphasising the qualities of the food and the results of using it. The 6" x 3-col. feature, a Western mother and a child in arms. To the right of this illustration are the words "For a straight back and sturdy limbs" in Gothic Bold Condensed Lower Case and "Give your baby this pure milk food" in Gothic Condensed Lower Case. These and a tin of OSTERMILK are in an oval panel. The main text is set in 9-pt. Times Roman followed by the word OSTERMILK in Rockwell Heavy and "Nearest to mother's milk" in Gill Sans Roman. To the right is "A helpful hint to mothers" in 8-pt. Times Roman forms a square.

(Continued on page 34)

The Wet Collodion Process of NEGATIVE MAKING

By

SRI BIMAL C. DUTTA

Manager, Map Reproduction Offices, Survey of India, Dehradun

This well known authority here deals with the time-honoured method of preparation of wet plate negatives in a lucid interesting style, all his own. This is the second in the series from the pen of B C D

THE SILVER SENSITISING BATH

This is made by dissolving 4 ozs of pure silver nitrate (Ag. No. 3) double re-crystallised, in 43 ozs. of distilled water in a large clear glass bottle. Let it stand in the sun or the light of the arc lamps for a few days. (This is called "Sunning" the bath). Then add a few drops of 10% potassium iodide, from 5 to 7 drops (minimum) to each 20 ozs. of solution. A precipitate forms, but dissolves in shaking. Filter well through cotton wool in a large glass funnel, then add 1 to 3 drops of pure nitric acid to every 20 ozs. of solution, test with a strip of blue litmus paper which should turn pink if sufficient acid is present, carefully add acid drop by drop, if necessary until this colour is obtained. The strength of the silver solution should register 40 grains of silver nitrate to each ounce of solution. This is checked by an Argentometer. Now the bath is ready for use.

SENSITIZING

Raise the dish at one end, allow the silver solution to settle at the opposite end, gently lower the plate as far as possible but without allowing fingers to touch the fluid, then lower the dish and at the same

instant go the plate, so that a smooth wave of solution flows evenly and without a pause over the entire surface of the plate. Rock the dish gently during the three minutes which are usually necessary to sensitize; take care that the plate does not become uncovered especially during the first minute, or marks will show later. A deep yellow safe light is used during the operation. To lift the plate from the bath, a silver hook known as a silver-bath hook is used. Nothing else should be dipped into the bath to raise the plate. Raise the plate slowly till resting on the top long edge,

steady it with fingers at left corner, slide right fingers down the right hand end and lift the plate so that the silver drains from the bottom left corner into the dish. When the drips cease, rest the edge of the plate on the blotting pad and wipe edges and back with soft tissue or blotter and place in a dark slide, thick edge upper-most, first placing a clean strip of blotting paper on the bottom bar of the slide. Make sure the plate is centred and firmly held between bars and that it is fully in contact with plate clips, or it will be out of focus. Insert back gently and place slide in the camera. Avoid shaking and jarring as this causes dust to settle in the plate. Making sure that the lens is capped, draw the shutter of the dark slide (pull screen lesser into position if making a half-tone negative) set the lens diaphragm to the correct aperture and give the required exposure.

It is convenient to base all exposure times on a correctly exposed test negative at the same size as the original. Then if all other conditions (lamp distance, diameter of stop, materials, quality of original etc.) remain constant, exposure will vary with each change of size according to the table given here.

A table of Exposure Ratios for Line and Continuous Tone Negatives.

4	times size equals	6.25	of the same size exposure
3	"	4.0	"
2	"	2.25	"
	Same size equals	1.0	(unity)
$\frac{1}{2}$	"	.76	"
$\frac{1}{3}$	"	.72	"
$\frac{1}{4}$	"	.56	"
$\frac{1}{5}$	"	.44	"
$\frac{1}{6}$	"	.39	"

Example

Supposing the exposure at 'same size' for good black line drawings on pure white card is found to be, say 60 seconds, then exposure for $\frac{1}{2}$ size (linear) will be:

60 times .56 equal to 33.6 seconds
or 34 seconds (or 60 x .56 = 33.60)

If it is desired to change the size of the lens aperture (diameter of the stop) then the exposure time will vary as follows:—

When changing to the next larger stop, the exposure is halved; for next smaller stop it is doubled.

DEVELOPMENT

Wet Collodion developer is made by dissolving ferrous sulphate crystals (apple green in colour and free from rust and white powder) in water, then adding glacial acetic acid and also some methylated spirit (industrial alcohol) if working with a well-used silver bath.

Ferrous sulphate
(Iron sulphate) 3 ozs
*Glacial acetic acid 2 to 3 ozs
Industrial spirit 2 to 3 ozs
Water upto 60 ozs

*In hot weather, the proportion of acetic acid may be increased a little bit.

Ferrous sulphate is the reducer, which precipitates the silver nitrate

to form blackened metallic silver; the acetic acid is the restrainer enabling development to be kept under control, otherwise the precipitation would be almost instantaneous over the whole negatives. The alcohol (methylated spirit) is to prevent the aqueous developing solution from being repelled by the spirity film when the plate has been sensitized in an old bath, which has become changed with alcohol from the collodion.

During development, the plate is held by the thick corner, in the left hand, just sufficient developer to well cover the surface, is flowed in one even quick flow from a developing cup or beaker so as to spread instantaneously across the entire surface of the plate, beginning at the corner next to the left thumb. Any pause in the flow will cause clear-cut marks to show of uneven density. The developer should be retained on the surface and as little as possible allowed to escape into the sink, as it is quite useless to

apply more developer. The free silver nitrate on the surface of the plate is precipitated by the ferrous sulphate and is attracted to and deposited on those portions of the film which have been acted on by light and now have a dull grey appearance.

More and more silver is deposited as development proceeds, and the plate should be gently rocked in different directions during the 18 or 20 seconds which is the normal development at 65° to 75°F. temperatures. Exposure should be calculated so that maximum development is obtained in this time. In any case, development should never exceed 25 seconds. This form of development is known as "acid development" as distinct from the "alkaline development" of Dry plates, in which plates must be soaked in a dish of developing solution so as to cause the gelatine to swell and absorb the reducer. Too great a quantity of ferrous sulphate developer would dilute the free silver nitrate on the wet collodion surface and so cause a weak deposit and a thin image.

FIXING

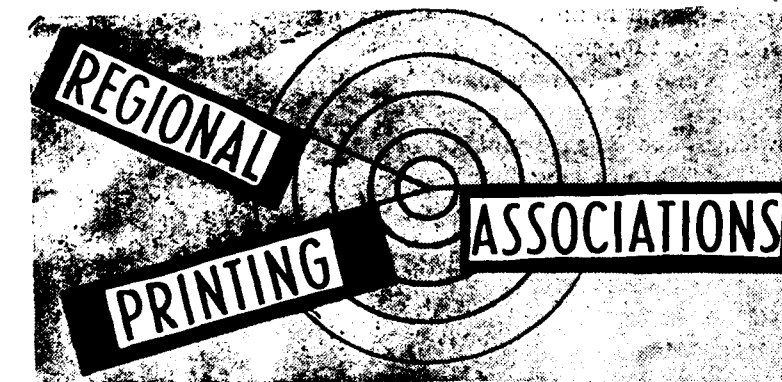
The plate is now washed under the tap for fully one minute, to remove the developer, and is then flowed with a 10% solution of potassium cyanide (deadly poison) until all the cream coloured unaltered silver iodide is dissolved from the portions not affected by light, then wash again for one minute, the back of the plate is then sponged over to remove any dirt, drained, and then flowed with an intensifying solution. Hypo-solution may also be used alternatively as follows:—

Sodium hyposulphite 1½ ozs.
Potassium metabisulphite 19 oz.
Water 30 ozs.

Insufficient fixing gives stains and will cause fading of image at a later stage.

(To be continued)

PRINTINDIA



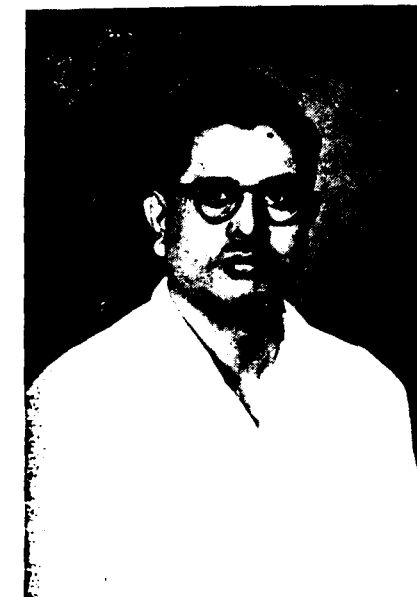
Printing has helped awakening of mankind. It has encouraged association of people. But the printers themselves need awakening, and require associations for the progress of the industry on which depends progress of mankind. The various annual conferences of printers are ample proofs of the awakening of Indian printers to the need for healthy association to achieve results.

THE HYDERABAD STATE PRINTERS ASSOCIATION

1. Shri A. P. Nagan, Partner, O-mania Printing Works, Rashtrapathi Road, Secunderabad.

As the Vice-President, Hyderabad State Printers' Association, he has taken keen interest in bringing round all the printers under the banner of the Association. He is a member of the Governing Council, A.I.F.M.P., for the last four years.

"PLANNING WITHOUT FEARS"



Sri A. P. Nagan

2. Shri J. R. Bardapurkar, Manager, Jai Hind Press, Narayana-guda, Hyderabad.

As the General Secretary, Hyderabad State Printers' Association, since its inception in 1953, he has devoted his valuable time and energy for the growth of the Association. Due to his efforts the association stands on a sound basis. He is a member of the Governing Council, A.I.F.M.P.

3. Shri Puli Mallikarjun, Proprietor, Muiki Press, New Bhoiguda, Secunderabad.

Starting his career as an apprentice in "The Hyderabad Bulletin Press" in 1924, he served in N. S. Railway Press for 11 years, and started press of his own in 1947. He is the Joint Secretary, Hyderabad State Printers' Association and Member Governing Council, A.I.F.M.P. He is the live wire of the association. His unbounded energy and enthusiasm has contributed much to the growth and stability of the association.

4. Shri G. Narayana Rao, Proprietor, Laxmi Art Press, Gowli-guda, Hyderabad.

Began his career as a worker in a printing press, started a

press of his own in the year 1944. His amiable nature and calm working has helped very much the growth of the association. He is the Treasurer, Hyderabad State Printers' Association, since its inception and a Member, Governing Council, A.I.F.M.P.

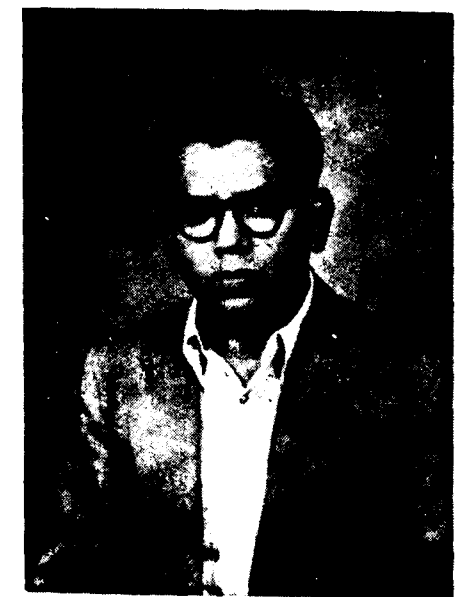
SECOND WEST BENGAL PRINTERS' CONFERENCE

The Second Annual Session of the West Bengal Printers' Conference was held on Sunday the 13th January 1957 at the Nadia District Board Hall, Krishnagar under the presidentship of Sri S. N. Guha Ray, Honorary Secretary, Calcutta Association of Master Printers.

Presiding over the exhibition, Shri Gossain said that they should go ahead keeping a watchful eye on the decency of the produced materials. He also appealed to the printers to produce really beautiful things and try their best for the industry's all-round development.

A large number of delegates from different districts of West Bengal attended the Conference. Amongst the distinguished visitors were

"THE PILLAR OF STRENGTH"



Sri J. R. Bardapurkar



Dr. Kurt Werner, Director, Maschinenfabrik GOEBEL, West Germany, manufacturers of rotary and gravure machines seen with Sri R. N. Shani, Director, Printers' House, and Sri Biswas, Manager, Government of India Photo Litho Press

Shris Nrishingha Prasad Sarkar, Vice President, Nadia District Congress Committee. Jagannath Majumdar, M.L.A., Fajlur Rahman M.L.A., Manmatha Pramanick, Secretary, Nadia Dist. Congress Committee, Sudhindra Chandra Moulik, Chairman, Krishnagar Municipality, Father Augustine, Manindra Kumar Biswas, Nani-gopal Chakrabarty, Bangshi Chetlangia, Jnan Chandra Mukherji.

Srimathi Ila Pal Chowdhury, M.P., Chairman of the Reception Committee, welcomed the guests and delegates to the Conference and invited Shri Asoke Sarkar to inaugurate the session. She urged the Government to exempt the printing industry from the purview of the Sales Tax. If not possible, at least all kinds of books should be exempted from the payment of the tax.

The growth of the industry would be hampered if the number of official and semi-official printing presses increased. In these days of unemployment the Government should not adopt any policy that might cause further deterioration in the situation.

"THE LIVE WIRE"



Sri Puli Mallikarjun

Sri Asoke Sarkar in his inaugural address, said that the printers could rightly be proud of their role of popularising the various branches of knowledge and science among the people. But too many difficulties were standing in the way of their fulfilling the responsibility. In West Bengal alone he said there were over two thousand printing presses investing a capital of about rupees two and a half crores. Over a lakh of people were employed in the industry. But unfortunately the industry was now in a moribund state and most of the presses were maintaining their existence with great hardship. The reasons for this unfortunate state of things were mainly harmful competition within the industry, mounting cost of printing materials, scarcity and high prices of Printing machinery etc.

At present almost all the official or semi-official institutions had their own printing presses. Books, forms and other things which were printed in these establishments could be done at a much less cost in the non-official presses. He requested the Government to get their printing jobs done as far as possible by these non-official presses. In his way a lot of wastage of public money could be avoided.

Sri Dwarakanath Dhar, chief guest, pleaded for "co-existence" among the printers to avoid the "calamity" ahead of them mainly due to their "suicidal competition".

Sri Dhar also urged the Government to consider the case of West Bengal before setting up a factory for manufacture of printing machines. He also criticised the import policy of the Union Government restricting the import of superior quality of foreign paper and board which would ultimately tell on the quality of printing.

"THE BINDING FORCE"



Sri G. Nurayana Rao

Sri. Sailendra Nath Guha Ray in his presidential address deprecated the cut-throat competition among the printers throttling the very industry. The problem he said could be partially solved if the non-profitable and small-earning organisation took to the co-operative system.

Referring to the place of printing industry in the First Five Year Plan, Sri Guha Ray said that the Union Government had decided to establish in all five regional printing schools. Two such institutions, one in Calcutta and the other in Madras, had already been set up. Within ten years, the boys coming out of the regional schools would bring about revolution in India's printing industry, he hoped.

The Government of India, he continued, had decided to set up a Central Institution to carry out researches in this industry. In view of the fact that in the whole of India the largest number of printing presses were in Bengal and every year Calcutta had been

THE FINEST OFFSET PRESS

SIZES

FAVORIT

14 x 20"
18 x 24"

PARVA

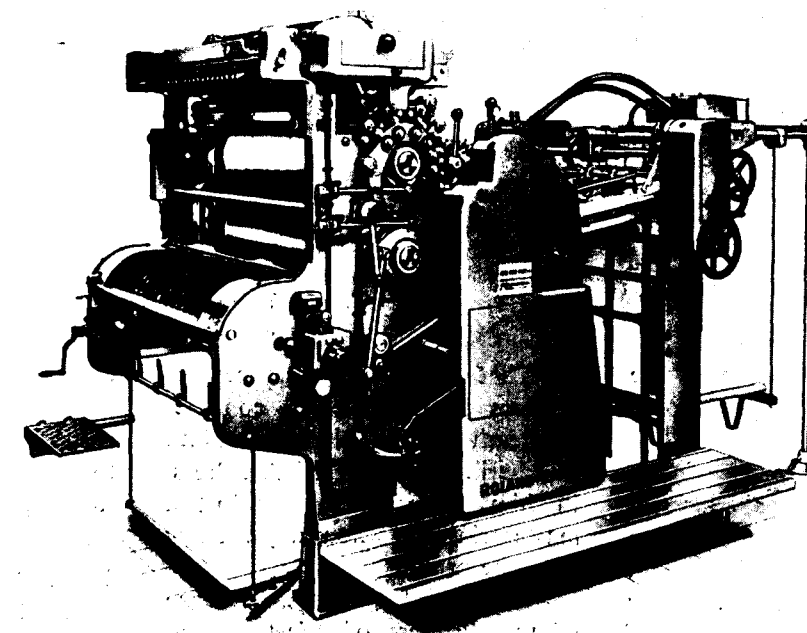
19-11/16 x 27-9/16"
TO
24 x 36"

REKORD

Single
and
Two Colour
25-5/8 x 38"

ULTRA

Single, Two
and
Four Colour
30-5/8 x 42-1/2"
TO
43-1/4 x 63"



A ROLAND PARVA

The first Roland Press was built in 1911, and by 1956 about 5,000 Roland Presses have been delivered all over the world. The figures speak for themselves about the success and popularity of Roland. The Offset Printer looks upon Roland not only as a quality machine but also as the biggest Money-maker in his business.

SOLE AGENTS

INDO-EUROPEAN MACHINERY CO. (PRIVATE) LTD.

Khaleeli Mansions
35/3 Mount Road
MADRAS-2

Sambava Chambers
Sir P. M. Road
BOMBAY-1

Kutchha Ustad Dagh
Chandni Chowk
DELHI-6

Jajodia Mansions
5 Bentinck St.
CALCUTTA-1

ROLAND

topping the list of India Government's printing awards the proposed institute should be set up near the printing school at Jada vpur, he said.

So far, the Industrial Finance Corporation and the State Industrial Finance Corporations had not come forward to aid the printing industry. But that stage was no more and now like other industries the printing industry, too, could get long-term loan from these organisations. Shri Kali Prasad Basu, Secretary, District Association of Master Printers, Nadia, who had sponsored the Conference, thanked the President and the assembly.

RESOLUTIONS

The following are some of the resolutions unanimously adopted by the Conference :

"That this Conference of the Printers of West Bengal expresses its sincere condolence at the sudden death of Dr. R. B. Fishenden, Editor of Penrose Annual, whose loss to the Printing Industry of the world will be difficult to fill.



Sri D. N. Dhar delivering the Welcome address. To his left are Sri A. K. Sarkar and Sri A. Chakrabarty

"That this Conference of printers of West Bengal condole the death of Shri Narendra Nath Mukherji, Founder of Art Press. In him the country has lost a masterprinter of whom any country could be proud.

"Resolved that this Conference of the Printers of West Bengal expresses its sincere sympathy with

tornado-stricken districts of Nadia and Murshidabad and requests the authorities to take immediate steps to alleviate the distress of the suffering people."

"That this Conference of West Bengal Printers fully supports the draft Indian Standard Paper Sizes as prepared by the said institution and recommends to the Government the early adoption of the same. This Conference is of opinion, that the adoption of the International Paper Sizes in India will ultimately lower the cost of production of paper in the country and will benefit the mass of the people."

"Resolved that this Conference of the West Bengal Printers requests the Government of West Bengal to collect Sales Tax on Paper, Board, Printing Ink, Printing machinery and other printing materials at source which will stop leakage in collection of the tax, and will save the dealer of paper and the printer from avoidable uneconomical expenses."

"Resolved that this Conference of West Bengal Printers views with great alarm the present policy



Executive Members of Hyderabad State Printers' Association

of the Government of India in restricting the import of superior quality of Paper and Board which has resulted in great scarcity in the market and is reacting severely on the Printing Industry of the country as the production capacity of the latter has increased greatly due to the Five Year Plan programmes."

"This conference also draws the attention of the Government to the harmful effect on the printing industry caused by the restriction put on the actual users on the import of printing and allied industrial machines, their spare parts as also on photographic goods; this shortage in spare parts has resulted in stoppage of some of the machines."

"This Conference also notes with apprehension that quotas have not been fixed by the Joint Chief Controller of Imports, Calcutta for almost all the machinery importers resulting in the stoppage of import of Synthetic Rubber Rollers, essential parts of machines etc. which has put the printers into serious difficulties."

"This Conference requests the Government of India to follow a liberal policy in allowing import of Paper and Art Board to the Established Importers and allow both the actual users and established importers to import all items required for the Printing Industry."

"This Conference requests all Government, Semi-Government self-governing bodies and public institutions in different districts of West Bengal to give priority to the printing establishments in their respective areas in the matter of entrusting their printing work for execution."

"Whereas it is regretted that in many cases the tenderers to the Government departments for their printing work are not duly notified by the authorities concerned as to the date and time for opening the Tenders, this Conference urges upon the Government to ensure that the opening of the tenders before the tenderers or their authorised representatives should be made a condition of the tender. The officer opening the tender and the tenderer or his agent should both sign all the pages of the tender."

"Whereas a large number of Muffusil Printing Presses once engaged mainly in the printing of periodicals published from the Districts are now facing extinction

(Continued on page 33)



Sri Guha Ray, delivering the Presidential address to the West Bengal Printers' Conference. To his right is Srimathi Ila Pal Choudary



The West Bengal Conference Hall packed with delegates and other printers listening with rapt attention

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Hickeys AND Spots IN Litho Work

By

MR. ROBERT F. REED

Photo Offset Problems need intelligent and immediate solutions. Hickies and Spots are two such troubles and their solution is dealt with in this article by an American expert in offset lithography

"HICKIES" AND SPOTS

In a lithographic job, defects such as "hickies" and spots in the printed work are most destructive of quality, as shown by studies made by the Lithographic Technical Foundation, 131 East 39th Street, New York, New York. Prevention is all important. This involves care in the manufacture and handling of ink, careful press washups, and good housekeeping around the press.

Hickies are small spots of more or less solid ink surrounded by white rings. Under magnification, they look somewhat like doughnuts in reverse, although they are not always round. After their first appearance, they repeat on sheet after sheet in the same places and increase in number as the run progresses. They are caused by solid, more or less ink-receptive particles that are stuck to the blanket or plate, and which are not transferred to the paper or dislodged by the forme rollers. It takes a washup to get rid of them but, unless their source is removed, they start coming back as soon as the run is resumed.

White or light spots in the work can be caused by particles or fibers

stuck to the blanket or plate. They differ from hickies only in that, instead of being ink-receptive, these particles are water-receptive.

The main sources of particles that cause hickies and spots are ink and paper. But a dirty press, a dirty ceiling, or bad rollers can also supply particles of foreign matter.

INK PARTICLES

Most hickies are caused by ink skin (dried ink). Great care should be taken to prevent the skinning of ink, either before or after it is put on the press. Sources of ink skin may be as follows:

1. *Ink Manufacture.* Ink ingredients such as vehicles, base inks and driers can dry and form surface skin. If any such skin should get into the final ink, grinding would only break up the larger pieces and scatter particles of skin through the entire batch of ink. Such particles would cause hickies.

2. *Handling of Ink.* When ink is mixed for the press, great care should be taken to prevent any skin from getting into it. In fresh kits or cans, the ink usually is covered with a disc of oiled kraft paper. When this is peeled off, the surface of the ink

is left clean and free from skin. However, there may be some skin around the edges and this should not be disturbed while removing the ink. In case only part of the ink is removed, the remainder should be smoothed and levelled with a broad knife. Replace the oiled paper disc carefully, making sure that it contacts the entire surface and leaves no air pockets to form skin. If this is not done, ink will be wasted in removing the skin when the remainder is needed later.

3. *Improper Press Washups.* In washing up the press it is important to remove all the ink from the fountain and clean it thoroughly. Even though the main body of ink is stirred or agitated during the run, it tends to dry around the edges and on the under side of the blade. Any such accumulation of skin or dried ink eventually gets mixed with the ink and produces hickies. Another source of trouble is the accumulation of dried ink at the ends of rollers. Such ink is not removed by machine washups. It dries days or weeks later. Eventually it becomes dislodged, gets into the ink, and causes hickies.

This type usually can be recognized by its shape and appearance. The spot inside the white ring has an irregular shape and sharp edges. The edges also are slightly denser than the centre, and it is soft and pliable, with no fibers present. The only solution is to wash up the press, discard the ink, and mix a fresh, skin-free batch of ink.

PAPER PARTICLES

Paper is second to ink as a source of hickies. It can produce both hickies and several kinds of spots. Knowledge and experience are necessary to identify the defects in paper that cause them. These defects are as follows:

1. *Paper Dust.* When paper is slit and cut to sheet size in the mill, a certain amount of dust is formed. Some of this dust is likely to get between the sheets and remain there. In most mills, some attempt is made to get rid of this dust by means of compressed air or vacuum, but they are not always completely successful. Spots caused by slitter and cutter dust can be any shape from that of individual fibers to that of slivers.

2. *Picking of the Paper Surface.* Small areas of surface fibers or coatings are sometimes picked, generally in the solid areas. These stick to the blanket or plate and produce hickies or spots that repeat sheet after sheet. These spots may be any shape.

3. *Lint and Fuzz.* Slitting and sheeting of paper sometimes set free individual fibers that get trapped between the sheets. Lint, however, usually is due to fibers being loosely bonded in the paper surface. It is usually worse on the wire side than on the felt side. These fibers are pulled out of the sheet by the ink, but they quickly become saturated with water, refuse to take fresh ink, and leave white images of themselves in the printed work. They are, of course, most apparent in solids.

4. *Holes in the Paper Surface.* Holes resulting from air bubbles in the fiber finish when the paper is made or bubbles in the coating slip when the paper is coated are deep enough to prevent the blanket from depositing ink in them. Spots due to such holes occur on only one sheet and do not repeat.

PARTICLES FROM OTHER SOURCES

Hickies can also be produced by particles of dust or dirt falling from a dirty ceiling, or dislodged from a dirty press or disintegrating rollers.

Ceilings should therefore be cleaned and painted at regular intervals. Press members should be cleaned at least once a week. They must be kept free from oil or grease that can accumulate dust and non-offset spray or powder.

Fiber-shaped spots can be caused by shedding dampener covers. These have the same appearance as spots caused by lint or fuzz, but are generally much longer, since the dampener fibers are cotton. Newly covered dampeners can cause them if they were not thoroughly washed before they were installed on the press. Old dampener covers may become rotten and shed fibers.

("Hickies and Spots—What to Do With 'Em", by Robert F. Reed, *Printing Equipment Engineer*.)

OFFSET REPRODUCTION COSTS ARE REDUCED BY IMPROVED METHOD

An improved method of making paper plates for offset reproduction, involving the ability of light sensitive plates to hold an electrical charge, has made it possible to save time and money where engineering drawings, bulletins, special reports, and documents have to be reproduced quickly, accurately, and at low cost. The Chrysler Corporation, Detroit, Michigan, which uses the process, reports that up to 55,000 copies have been made from a single plate and that it is also practical for reproducing as few as a dozen copies. Employees can be taught to operate the equipment in a few days.

Invented by Chester Carlson, a New York patent attorney, the process was developed by Battelle Memorial Institute, Columbus, Ohio. In 1944, Haloid Corporation, Rochester, New York, took out licences on the process and is now leasing (or selling) the equipment.

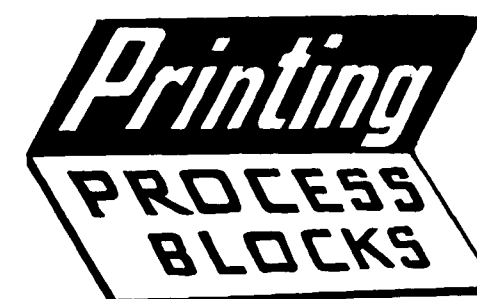
The Xerox plate is mounted in the back of a camera and given a positive electric charge to make its photo-conductive selenium-coated surface light sensitive. The plate is then exposed to the lighted drawing or copy. Effect of the exposure is to bleed off the electric charge on the plate except for those areas which were light, shielded by the dark, non-reflecting lines of the drawing or image. Thus, the image remains as a positive electric charge on the plate.

Development of the plate follows. The plate is placed in a tray containing a dark, resinous development powder. As the tray is rocked the powder is cascaded over the plate. The negatively charged powder adheres to the positively charged areas of the plate. Thus, the powder adhering to the plate forms a slightly raised image of the original copy. All development on the plate is carried out under ordinary light using a plate holder to mask the sensitized plate.

A paper master is then placed over the plate. The master receives a positive electric charge which causes the electro-statically held image formed by the powder on the plate to transfer to the paper. After transfer of the image, the operator strips the paper master from the plate. At this point the image is held in place only by the static charge and may be cleaned or removed from the plate. To make the master permanent, it is placed in the fuser unit. Heating elements dissolve the resinous elements in the powder image on the surface, causing them to impregnate the fiber of the paper. To produce duplicate copies, the paper is mounted on the cylinder of the offset duplicating machine.

If necessary, a duplicate master can be made quickly from any

(Continued on page 26)



By
"DAWSON"

Pictures come to life when printed well. They are lifeless when printed not so well. How to print blocks and how not to, are detailed in this interesting article by an acknowledged expert in letterpress technique

Good qualities make a great man. Good materials go to make fine printing. Accurate and well manufactured plates, appropriate quality of paper of the proper finish and furnish, substance and size; suitable ink and a machine-minder experienced in halftone work will certainly result in a good print.

ART PLATENS

The machine-man should be an adept in make-ready procedure and have a natural aptitude for matching inks. The machine selected should be of adequate inking power and ample impression strength. For halftone printing, presses like the Victoria, Colt's Armory, Emil Kahle, Original Heidelberg and other art platens are necessary. Light platens are only a substitute and not a good substitute at that. Drum inking with a good number of rollers, reciprocating riders, large diameters of rollers, geared inking on cylinders, pyramid inking system are necessary. The modern tendency is to have pyramidal inking system eliminating the ink table. The length of the press is also cut short without any loss in efficiency and the floor space requirements are also lessened. Individually and independently driven rollers of good composition, synthetic, plastic or rubber rollers

may be used depending upon the speed of the press. There should be no vibration, bad level of bed or tympan, cylinder, etc. Having assured that the machine used for halftone colour printing is mechanically sound and structurally suitable for such work, we should proceed to the next item *i. e.*, packing.

PACKING

Among the three kinds of packing to suit the nature of printing surface, hard packing is essential for halftones. The lesser the number of sheets, the more solid will be the packing. Of course, the very purpose of having a few sheets in the packing is to allow removal for placing overlays and patched up sheets. Making certain that the correct thickness of packing is maintained, proceed to inspect the plate.

THE PRINTING SURFACE

Having dealt with the machine we come to the next important element, the plate. Wood mounts create difficulties during printing. Improper height, bad level, rocking, weakspots, projections around, warping, out of square base, etc., are some of the familiar irregularities experienced with wooden mounts. Metal mounts are preferable for these reasons. The plates are fastened to metal mounts by a

two-way tape or adhesive tape on both sides. Patent mounting bases such as the wood cored mounts, having wood and metal alternately are also used. The plate is nailed to the wooden strips while the metal strips give more stability to the block. For easy shifting of the position of the plate, it is lightly nailed at points forming a triangle.

Overlays may be of hand-cut or mechanical ones. Areas which do not print properly after makeready are levelled up with tissue paper. Some pressmen do the setting up behind the forme rather than below the packing on the tympan or cylinder. The top sheet is slightly moistened to make it taut during long runs.

ORDER OF COLOURS

It is usual to print the yellow plate first, then the red, then the blue and lastly the black. But printing the blue first has also certain advantages. An even tone can be obtained if blue is printed first, but if yellow is printed first uniformity of colour cannot be maintained throughout the run. For some jobs, black is printed first then yellow-red-blue. The black forme forms the key plate and determines the position of the other plates. Thus the black should not be allowed to stand out alone. Where there are no progressive proofs from the engraver the best sequence will be to print black-yellow-red-blue. The blue can be used in correcting any colour deviations which might possibly have occurred while printing the first three colours.

DRIERS

Although what is called wet-on-wet tri-colour printing is adopted nowadays without allowing any time between one colour and another, it is essential to allow at least twenty-four hours between one colour and another. Driers should be added carefully. The first three

colours should be printed only with a base drier. Otherwise the succeeding colour will not lie flat on the preceding one, *i. e.*, it will not take the next colour. A surface drier or a half and half mixture of both surface and base driers can be used for the final colour. The sheets should not be allowed to stick together. For the convenient removal of stacks, a cardboard should be placed on the delivery board to prevent shifting of sheets. Further, more than a few sheets should not be stacked.

When a spray gun is used, a very thin film of spray should be used, as otherwise there will be difficulty in printing the next colour on the surface which has been rendered rough by the spray.

PAPER

Only fine enamelled stock or real art paper should be used. 120 or 133 screen halftones print on such paper nicely. The smoother the surface of the paper, the finer the screen should be. Copper plates

print better than zinc. Copper has a better texture and is not affected by heat during blockmaking. Further it is more durable for long runs. Electros print better than stereo duplicates where originals are not used. Properly cut paper to square and size, free from curls give best results. If one side only is to be printed, use the right side, although both sides may appear to be the same and evenside papers are now manufactured by the twin wire system.

INK

Use standard tri-colour inks from reputable manufacturers. Some printers use one colour from one manufacturer and the others from another to get best results. This may not be necessary in many cases. The same brand inks used by the engraver for progressive proofs should be used for best results. Tricolour inks are transparent and non-fading. Use ink straight out of the can. Doctoring, modifying or interfering with ink is

a risky job. The ink thus gets diluted and loses its brilliancy when doctored. The ink manufacturers usually recommend certain makes of varnishes, driers and pastes and only these give satisfactory and troublefree results.

TEMPERATURE

On each stack of printed sheets place about 20 sheets for spoils to prevent the bottom sheets from wrinkling, curling and otherwise, get affected by weather changes. If the paper store and pressroom do not have the same humidity, it is essential to keep the stock exposed to the machineroom atmosphere for some time say a few days prior to starting printing. Temperature and humidity in the pressroom should be constant. Otherwise the paper will stretch or shrink or curl. These in turn cause faulty register. A temperature of 70 to 80 deg. F. with 40 to 50 per cent humidity is considered ideal. Some machine-men register to the edges of plates. When the edges are slightly out, they are quick to remark. "Oh, it is out of register." This judgment from edges is wrong. Some important spot of the picture should be selected, such as the face, eye, mouth, hairs, etc. If the halftone dots of various colours fall one on another properly, then the block is in register.

Many tri-colour prints are spoiled due to bad handling. By set-off, smudging, finger-marks etc., disfigure the otherwise good printing. Sometimes blocks are over-etched or under-etched and the most careful make-ready and expert attention will not make it alright. While cleaning also, rough brushes are used or foreign material adhering to brushes injure the block irreparably. If special training is given to machinemen on handling colour jobs all will be well.



By

SRI S. GIRI

There are still machine-men in this country who have not heard about overlays. Their number is becoming less. But, one should pity those having heard, think that overlays are a waste of time. Our pressroom expert details here the purpose of overlays and the proper process of overlaying. Next time when you see a badly printed halftone, think how an overlay could have improved it

PRINTING PICTURES

Printing halftone blocks is difficult enough. One has to care for the innumerable dots collectively and singly. More skill is called for, more time and more care. A machine-man is judged not by his printing a type forme, a rule forme, a line-block forme, a line-block and matter forme or all the above mixed together. But if he can produce a good halftone print then his future in the machine room is secure. This shows that a machine-minder is as good as his halftone print or as bad as that. Pictures are printed to be admired and appreciated. If they are not properly printed their purpose is defeated. It is here that overlays have a part to play.

NECESSITY FOR OVERLAYS

Halftones are reproductions of continuous tone photographs or other originals. The proper rendering of the various degrees of tone in the original photograph is helped

by the halftone dots. But in printing, only an overlay will help correct inking of halftones.

It is true that it is possible to get a few copies from a new halftone without any use of overlay at all. But a little extra pressure is necessary to get the results even for this limited run from a new plate.

But our runs are not always small and our plates are not always new. When the number of copies increase, the uniformity in result is absent. Excess pressure tells on the highlight dots and the plate wears fast.

An intelligent adjustment of pressure according to the weight of the tone is called for to get good reproductions and to save the plate from undue and early wear. If it is found that, say 100 lb. pressure to the square inch is necessary for solids then

Semi solids would need	75 lb.
Mid-tones	50 lb.
Highlights	25 lb.

Only by the use of overlays this varied requirement of pressure could be met with. Without overlay the solids would require far more pressure than highlights and will not print well with 25 lb. per sq. inch. And highlights will wear soon if 100 lb. pressure is applied on it. Hence the need for regulation of pressure.

The reasons for the use of an overlay can be summarised thus:—

1. Overlay prevents wear on highlights of the block; it lengthens the life of the block.

2. Overlay brings out the tonal values of the plate properly. For the proper development of the tonal values, overlays are therefore necessary. Contrasts in the continuous tone photographic original are maintained in print only because of overlay, as equal pressure is exerted all over the forme by platen or cylinder and only overlays can regulate the pressure.

3. Overlay helps the plate to give off the ink to the paper, according to the gradation of tone.

The rollers give an equal amount of ink all over the plate, but the solids require more ink and the highlights far less. Too much ink on the highlight will fill in the block and produce smudgy printing. Too less ink will make the solids print grey and unsatisfactorily. Correct inking also indirectly prevents set off. A correctly inked block never creates problems such as picking.

If a forme is examined after an impression, it will be found that the highlights have some ink left in the plate, due to there being not much pressure, whereas in the solids there will be practically no ink, as the overlays squeeze out from the plate all the ink.

UNDERLAY

Before touching on overlay, it is better to understand an underlay.



Visitors throng at the Mathematical Exhibition Lecture Hall, Monotype House, London

If you abolish wooden mounts, you automatically abolish underlays. Till then we have to contend with underlays. Underlay is the layer of paper or cardboard, pulpboard or other substance given under the mount to correct unevenness or the shortage in height of the block. Block consists of the plate on top with the mount at the bottom, both of which together should make .918 inch, i. e., type height. As the machine is manufactured to print from a surface of this height, as all the inking units are to suit this height, it is essential that all parts of the forme should be of uniform height. Low portions will neither get ink from the inking system or impression from the impressing surface (platen or cylinder). Therefore, underlaying is purely a corrective process. If the block is perfectly type high, there is no necessity to underlay it. Warped mounts may rock. A new block when tested may be perfect in level and height. But after exposure to atmospheric changes, the mount may shrink, swell or unevenly warp and become untrue, and low to paper. As the top of the wooden mount is protected, the bottom is most affected by weather changes and hence the warping. All mounts should be tested with a straight edge for squareness and level.

When it is found necessary to increase the height of the block so as to bring it to proper type height, underlaying is resorted to. Blocks that are under type high cause wear and necessitate over packing. Consequently they result in slur and other imperfections. The underlay should cover the whole of the base of the mount. Before underlaying, the block is tested on a level surface such as the imposing stone for rock and if rocking, the base is brought to a level by sand-papering or planing.

Then sheets of sufficient thickness should be pasted underneath to bring the block to type height. It is enough if paste is applied from corner to corner. If too many sheets are pasted, the underlay may not be solid and may swell or curl. The lesser the number of sheets or boards, the more solid will be the underlay. The underlay may be cut about a thick lead less on all the four sides. This will avoid the underlay getting under the neighbouring type or blanking material or another block and creating work-ups, stoppages and other annoyances.

PACKING AND PRESSURE

Packing is the resilient substance consisting of sheets of paper and cardboard and on cylinder machines, cloth. This is essential to give proper impression and to protect the type, blocks etc., from undue wear. The nature of the packing depends upon the nature of the printing surface and also the quality of paper too. While the quality of packing may be hard, soft or medium according to whether the forme is of halftone blocks to be printed on Art paper, worn type matter, stereos, or mixed matter and block, the quantity of packing is regulated according to the cylinder collar on the cylinder machines. There is no such guide on platen machines for the quantity of packing although on automatic platen machines, the packing is generally about 3 points. On Clamshell machines where the platen and bed move, over-packing results in slur as one part of the platen tends to meet the forme earlier than the other.

Readers may feel that packing has nothing to do with the subject of overlays. They are mistaken. Overlays are sheets or other substances placed in the packing to give additional pressure. This pressure

is graduated according to the necessity of the printing plate. Wherever more ink is necessary, more pressure is necessary, and wherever practically no ink is necessary no pressure is applied. This intelligent regulation of pressure in accordance with the subject of the picture is called the process of overlaying.

The overlay acts from behind the paper, while underlay acts from behind the forme. By proper overlaying, each detail in the block is printed properly. Each tonal value is reproduced as it should be. Only the requisite pressure is applied to each gradation of tone. Excess pressure will cause filling in and wear of dots and smudgy printing. Low pressure will not bring in all the tonal values of the halftone. Overlay is the adjustment of pressure to suit varying sizes of dots. The difference in size of dots offer difference in resistance. The fine dots in the highlights should have little pressure, the medium dots in midtones should receive moderate pressure and the closely united solid dots should have the maximum possible pressure. This adjustment of pressure is necessary in halftone printing. Without this it is impossible to achieve a good reproduction. With an overlay, the highlights will print sharp and clean, when the middletones will be smooth and grey in appearance and the solids will be in full colour. If full life of the plate is required, this adjustment of pressure is necessary between the highlights on the one extreme and the solids on the other, with the intermediate tones thrown in between in varying degrees.

HAND-CUT OVERLAYS

The hand-cut overlays are the most superior and hence the most difficult to prepare. The process calls for proper judgment of tonal values and considerable care in preparation and registering. The

(Continued on page 31)



F. & D. BROWNLIE

UNCONVENTIONAL LABEL PRINTING MACHINE

The design of the small label affixed to registered letters and packets varies little from country to country, being usually about 2" x 1". Inside a heavy rule border there is a large cipher, normally the letter "R", the name of the city, town, or village of the issuing Post Office, and a number.

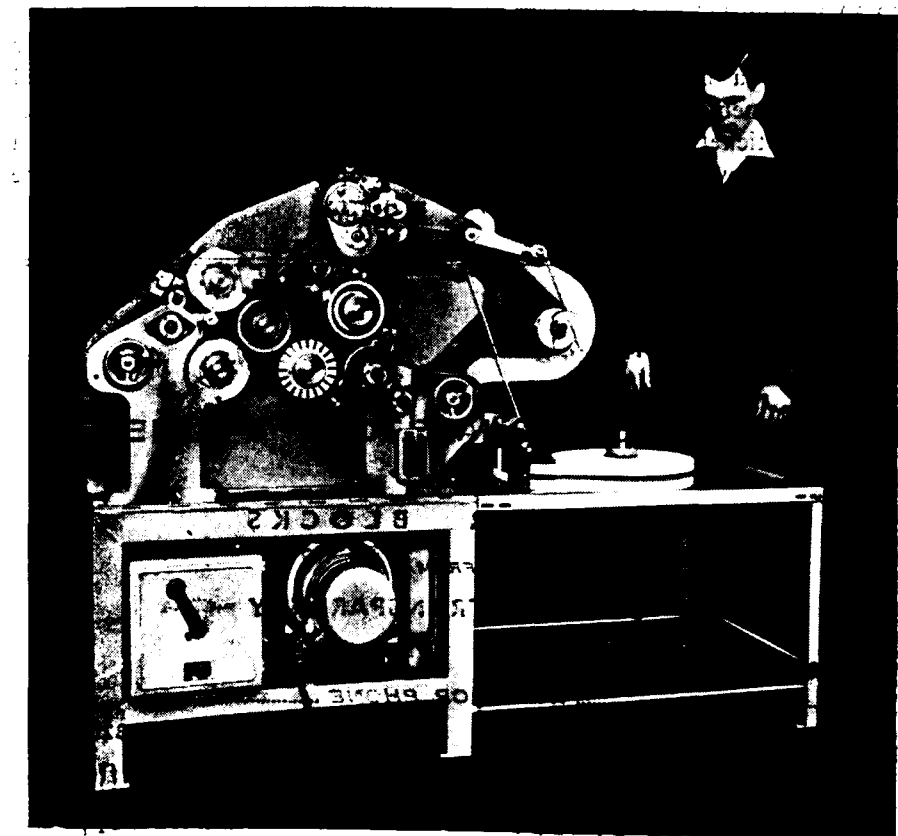
Methods of printing these labels vary from printer to printer, but whatever the method, the difference in quantities required for small towns and large cities means much changing of plates or laborious type picking for the place names in the large flat-bed formes. As there is no space for the orthodox numbering box in these small labels, this has had to be a subsequent operation perhaps combined with cross-perforating. Much time is wasted in re-setting numbering boxes say at the end of comparatively short runs, and working with large sheets entails considerable guillotining and hand-collating.

Timsons of Kettering and London have released details of a rotary machine only 6' 6" x 3' 0", which will print, number in sequence and perforate in one continuous operation at speeds—on a straight run—of more than 1,60,000 labels an hour.

The press delivers labels cross-perforated ten to a sheet and length

comparatively unskilled labour, and no trimming is necessary. When the re-reeling unit is in use, a 2" reel, the exact width of the label, is used, and when the sheeting unit is used an extra 1/4" is allowed on the reel for the stitching stub.

The reel is unconventionally mounted, and whether 2" or 2 1/4" wide, goes through draw rollers and enters the first printing unit, where the large "R" and the box rules are printed from rubber plates or curved stereos. This unit need never be altered, the matter it prints being common to all the labels. The second printing unit adds the place-name or symbol from cut down Linotype slugs fitted into slots in a cylinder, the positions being determined and the locking-up simple. The first and second units operate from the same ink duct, so that the colour must be the same.



Latest Label Printing Machine

The third unit, which can be in another colour, adds the number, and by an arrangement of rotary numbering machines round a cylinder, the numbers fall in sequence. Alternative numbering boxes are available for backward or forward working, depending on whether the labels are to be delivered in sheets or reels.

Cross perforating is then done, and if required the length perforation is added and the web fed to the cutting knives or the re-reeling unit. A spare type-slug cylinder is supplied so that one cylinder can be prepared while the other is running. Change-over only takes a few seconds, and with the resetting of the numbering boxes the press is ready for production again, stand-still time being reduced to a few minutes. No subsequent operations are necessary, there being no sorting, hand-collating or guillotining, all the operations being completed in one pass through the machine.

Although a machine essentially for Government printers, it will be obvious to ticket and label printers generally that with a very few minor alterations to suit their specific

requirements this is a press with considerable potentiality.

AUTOMATIC PARCELLING MACHINE

Wrapping parcels by hand is a laborious undertaking in the average printing works, as in industry generally, requiring a considerable amount of both time and space, and with results that are not always satisfactory from the point of view of uniformity.

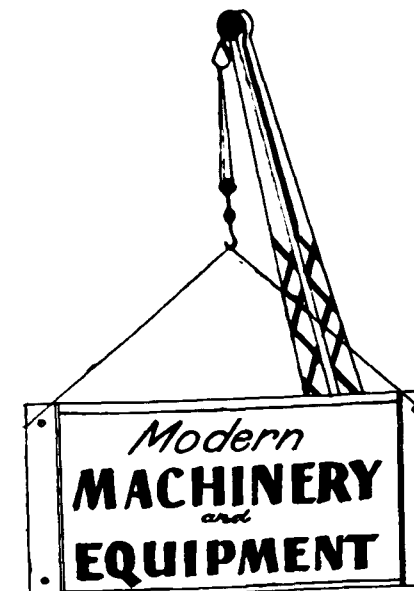
Spicers Ltd. of London have acquired the sole distribution rights throughout the world for the newly-introduced Spriggs parcelling machine, which is semi-automatic in operation and hydraulically actuated.

The packets, cartons, boxes or bags for parcelling are marshalled by the operator in front of the loading platform on the machine. The operator draws a sheet of cut paper from a stack on one side of the machine and places it on the platform against a stop, so that its leading edge rests on a gummer roller. The packets are then pushed on to the platform against a parcel guide and clamped in position by a lever-operated flap in front of the platform.

Depression of a lever starts the automatic wrapping cycle, which takes only four seconds. First the loading platform is lowered by a vertical hydraulic ram so that the edges of the table fold the right and left-hand ends of the paper upwards. The upper edge of a second horizontal ram folds the paper down over the top of the packets so that the gummed edge is uppermost, and hinged flaps on the ram head then swing inwards, making the first two side folds. The ram continues to advance and pushes the parcel under the left half of the table, which folds the other side of the paper down over the gummed edge. Pushing between two bullnoses completes the side folds and forms the end flaps, and the parcel then enters the glue register for gluing of both bottom end flaps. Finally the parcel is pushed past ploughs which fold down the top flat, and to complete the operation hinged pressure plates fold the bottom flap upwards over the top flaps and hold them in place. The last pair of pressure plates can be heated and thermostatically controlled to dry off the glue, so that the parcel is securely sealed by the time it emerges from the machine. In the meantime, the ram returns to its starting position, allowing the loading platform to rise again.

The advantages claimed for this machine are the elimination of expensive gummed tape, total enclosure for cleanliness and ease of operation, and small installation space required, say about 7 ft. by 3 ft., depending on the exact parcel size. The machine is driven by a 2 H. P. electric motor, normally from 3-phase supply, and the motor drives a pump mounted inside the hydraulic fluid tank, which has a capacity of 20 gallons. The machine is available in various sizes, the standard model, for example, accommodating parcels up to

(Continued on page 28)



NEW H. P. AUTO STEP AND REPEAT PROJECTOR

As reproduction processes have advanced, and the demand for multiple images printing down from litho plates or cylinders, as in gravure, has been looked to for the production of high numbers of small printed units, usually in regular patterns on large sheets, the step and repeat projector machine, for the production of multiple image negatives and positives has become more necessary, and has found its place amongst the equipment of the larger houses, especially those concerned with packaging.

Step and Repeat Projectors have hitherto been operated by hand, the movement being carried out in a darkened room, the tedious operation of constantly re-setting the position of the large plate in the dark room, reading of small figures of necessity poorly illuminated, and usually in a red light has prompted the design of a fully automatic step and repeat projector, more in keeping with modern times.

To satisfy these requirements, Hunter-Penrose Ltd. of London, went into production and can now

offer a step and repeat fully automatic projector, shown for the first time at IPEX, which has a range of magnification 2.5 diameters down to point 4 diameter, with a maximum unit transparency, 1" x 10". The plate carriers can be whole plate, half plate, quarter plate, or specialised sizes if required, and the maximum multi plate size is 40" x 30".

Illumination is by means of 4-125 watt 2,000 candle power, mercury vapour bulbs (with silvered reflectors, diffused surfaces, and supplied complete with auxiliary gear). The focussing of the unit negative on to the plate is made by a superior precision all-British designed automatic system, scaled in magnification to 0.001 diameters through the range mentioned above. The automatic focussing has both fast and fine adjustment, capable of being operated both from inside and inside the dark room, and the unit negative can be orientated through 360° within its carrier and its image caused to move laterally, or rise and fall by controls from inside the dark room at the focussing screen. A 20" x 16" removable focussing screen is located on the fixed central axes, and the unit negative registered against the fine datum line etched in glass for simplicity. The illumination is cooled, actinic and economical, and is adequately diffused before reaching the unit negative. The lens diaphragm control is designed for remote operation and easy access. High quality bellows are used between the negative holder, and the lens and dark room wall.

The step and repeat unit is operated by a fully automatic electrical control unit governed by charts carrying punch holes. The charts, when punched, control the electrically driven screws, which move the carrier to any desired position.

The machine prints any pattern automatically without attention, and stops after a pre-determined number of exposures, or alternatively at the end of the pattern on the chart. An integral light meter controls the duration of the exposure, forming part of the sequence of operations. By using the push button control, any individual prints in the pattern can be "missed", and the two movements of the image can be driven to any position for a second design to be interwoven with the first one. The projector will expose an image in any position on the multiple negative, and provision is made for manual operation. The multiple plate rests in three point register lays, and likewise the unit negative can be laid in three point register lays, ensuring uniformity between multiple negative results. The design of the apparatus is such that the machine can be kept free of "back lash" throughout its working life, and automatic working can be commenced at any part of the design layout.



Sri Kanu J. Mehta, B. Sc. (Hons.), of M/s. Bharat Varnish Mfg. Co., Bombay who left for United States on 27-12-56 for higher studies in Paint and Varnish Technology.

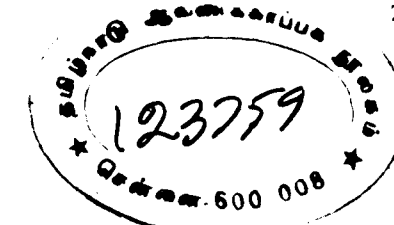
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Estd. 1890 Phone: 3202

M. C. APPASAWMY CHETTY & CO.
14, JONES STREET :: MADRAS-1



Hickeys and Spots in Litho Work

(Continued from page 18)

good copy. If corrections are necessary, the drawing is first copied on the Xerox plate. Before the plate content is transferred to the paper master or before fusing, the part to be changed is wiped off. The master is then completed and the changes are drawn or typed on the master.

Each operator controls three or four pieces of equipment. In order of use these are: (1) Processor, (2) camera, (3) fuser, and (4) tone tray.

Up to 100 reproductions can be made during the life of a plate. The plates are not re-coated although this could be done, if

desired. Experience has shown that if plates are used continuously they tend to "fatigue." It is, therefore, advantageous to rotate the plates, permitting each plate to rest after use.

Fully automatic offset machines will feed 6000 sheets of paper per hour. Allowing for plate changes, it is not unusual to turn out up to 4500 pages per hour from a single machine. Half-tone screens are not always necessary but may be used if desired to give excellent reproduction quality in a report or document. Chrysler also uses this method to reproduce office forms, departmental reports (which can be reproduced without retyping) and confidential reports.

In addition to standard cameras for reproducing drawings up to 12 by 18 inches, a camera has been

devised for reducing larger drawings to a maximum negative size of 36 by 48 inches. In this setup, an entire "dark room" is part of the camera. The lens is mounted in the wall of the room. While an operator on the outside mounts a large drawing under glass, the operator inside the camera room focuses the camera, makes other necessary adjustments and takes the picture. Complete facilities for developing the Xerox plate are installed "inside the camera." This equipment is very flexible and can be used for any drawing that is too large or too bulky to handle in a standard duplicating or reducing camera.

"Method Cuts Costs of Reproducing Vital Industry Papers," by W. G. Patton, *The Iron Age*, 12 May 1955, p. 103.

Dear Mr. Printer,

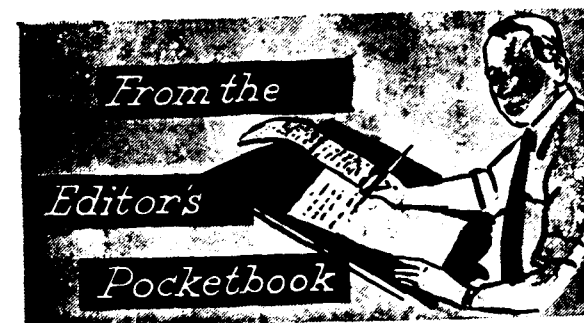
Have you any DRYING trouble?

When printed sheets do not dry, it could be due to any one of the following reasons:

- Paper being too acid or too absorbent or a combination of both.
- Over reduction of Ink (possibly to remedy picking).
- Use of wrong REDUCERS.
- Incorrect selection of ink for a particular paper.
- Insufficient drier in the ink.
- High Humidity.

IT PAYS TO CONSULT YOUR INK MAKERS. THEY CAN SELECT
THE RIGHT INK FOR YOU TO SUIT THE JOB AND THE PAPER.

Yours for Service,
The Technical Department,
**RAINBOW INK & VARNISH MFG. CO.,
(PRIVATE) LIMITED, BOMBAY-7**



ABOUT PATRA

Patra, the central research organisation for the printing industry, has large and well-equipped, laboratories at Leatherhead, Surrey. Staffed by over 80, its purpose is to help improve efficiency and quality in the industry and it does this by supplying printers with the latest information on developments in processes, machines and materials. It helps both the small and large firms in their day-to-day problems, and it undertakes research projects too intricate and costly for most individual firms.

Patra's job is done under the three broad headings of *Research, Enquiries and Information*.

Research.—By finding out in detail how the many printing processes work, research can often pinpoint the causes of troubles experienced by the printer, provide new and improved techniques and can give the trade better materials to work with. There are over 28 projects on the major printing processes of letterpress, lithography and photogravure, as well as the printer's main raw materials—ink, paper and board.

As a result of *Patra's* research, many new materials and processes have been developed which have helped to improve quality and increase production. Brief details of the research programme are given in the "*Patra at your Service*" booklet.

Enquiries.—Members can consult the Association on any technical problem arising in their works. Last year, *Patra* dealt with over 1,800 technical enquiries ranging from non-drying inks, picking and fluffing of paper to corrosion of printing plates and bookbinding troubles. There is a special laboratory for this work, staffed by scientists and practical printers. If any query cannot be answered in a report, then a member of the liaison staff is available to visit the firm to give on-the-spot advice.

Information.—The Information and Advisory service, backed by a well-stocked library, can supply members with the latest information on machinery,

equipment and materials. The library contains 1,800 books, 12,000 pamphlets, 4,000 patent specifications, 11,700 reports and subscribes to over 350 technical publications published at home and abroad. From these, the monthly issues of *Printing Abstracts* are compiled, which contain a complete and condensed record of the latest literature on printing and allied subjects. Over 350,000 items of technical information have been accumulated in the card index.

Liaison.—So that the Association may keep in close touch with its members, two liaison officers (one specializing in lithography, the other in letterpress) have been appointed. They make periodic visits to every member and are available to give on-the-spot advice about works' problems and methods. Each member will receive at least one liaison visit every year, but if he has an urgent problem he has only to contact the Association to fix an appointment.

HOW MEMBERS USE PATRA

Members are making increased use of *PATRA's* services: over 1,800 technical enquiries, ranging from non-drying of inks and picking of paper to wear of printing plates and warping of book covers, were answered in 1954. Library loans were in the region of 4,500, and the information and advisory section deals with many queries about processes, machines and materials. Here are some facts which show how a small cross-section of members have made use of *PATRA* in the last two years.

A large firm of letterpress periodical printers sent in 24 technical enquiries, among which were problems about book binding adhesives, the preparation of type transparencies, and printing on transparent materials. This firm asked for 931 library loans—an average of nine loans a week. Included among these were items such as "How to Maintain Interest in Work Simplification", "Principles of Colour Photography" and "Rubber Plate Manual for the Graphic Arts".

Another member has asked 20 technical questions and borrowed 128 items from the library. This member's problems included such difficulties as slow drying of a particular ink, tarnishing of bronze and odour. The library was able to help him with information on such subjects as printing from rubber plates, chemistry of lithography, and pulp and paper.

A lithographic firm mainly printing labels and cartons submitted 61 technical queries and 212 requests for literature—over one technical query a fortnight and over two loans a week.

From Our
London Correspondent
(Continued from page 24)

17" x 12" x 7" deep, and the flexibility of the hydraulic system ensures that the operator sustains no injury if his hand should accidentally be caught between one of the rams and the parcel.

The third of the interesting series "Notes on Typography", by Geoffrey Dowding, published by Wace & Co. Ltd. of London, gives some useful hints on the setting of text matter in book production, and particularly in ephemeral printing, that great variety of printing associated with the conduct of commerce to-day. In the latter connection it is emphasised that it is wise to make the reader's task as pleasantly easy as possible, especially if the text is of any length, and sensible leading will help in this.

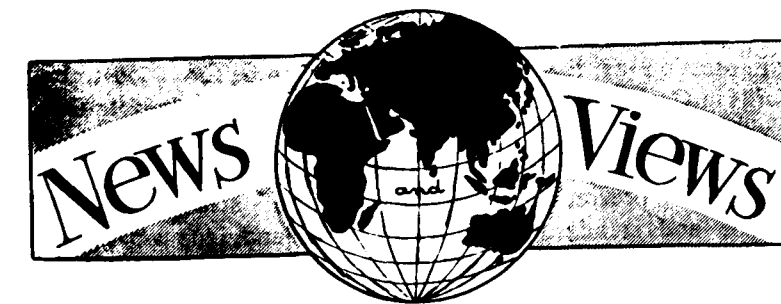
In ephemeral printing where two or more adjacent columns of text are set in the same size of type, the

leading should be identical in each column, the spacing of headings, sub-heads etc., being planned to make this possible. The positioning of individual lines will then correspond from column to column and a clean and often much stronger typographical pattern results. When text matter is arranged in double columns of the same width and the "copy" in setting makes an uneven number of lines, a slight, and often unnoticeable increase or decrease in the measure of one of the columns, provides a solution by absorbing the odd line or part of a line.

In the relatively small text space of an advertisement it may happen that a particular composition size is too large to fill the space comfortably without overcrowding the lines, and that the next size down is too small to produce anything but a weak and over-led piece of setting. In such cases the opening lines of the text should be set in the larger size and the remainder of the copy in the next size downwards in the particular type

range. The leading in this style of setting must, of course, be varied to give an appearance of even "colour" throughout. That is, if the opening matter is set in 11 point, with four point leading, then the remainder, set in 10 point, might be three point leaded. This is a purely hypothetical example and the exact amount of interlinear spacing for each size would depend on the factors mentioned above.

In the editorial type of advertisement or any other with a considerable amount of 'copy', the newspaper principle of shading down may be adopted with advantage in many cases. For example, an opening in 11 point could be followed by a paragraph in 10 point. The third paragraph might follow in 9 point and the remainder (and bulk) of the copy in 8 point. Lengthy copy can be made to look more inviting and will be infinitely more readable if this newspaper technique is intelligently used than it would be if set in one size of type throughout.



POPULARISATION OF BOOKS

The view that it was much better for a good author to depend on himself and the public than to rely on the assistance from the Government or any corporate body was expressed by Dr. C. P. Ramaswami Aiyar, inaugurating at Madras on 19th February a seminar on the problems confronting the book industry held under the auspices of the Book Industry Council of South India at 8, Victoria Crescent, Egmore.

Mr. G. V. Krupanidhi, welcoming the gathering, said the object of the seminar was to help the production of good books and make them available to the public at a comparatively low price. He said that in connection with the seminar an exhibition had also been organised where they could find books for the children besides other books published in different languages of the southern region.

Dr. Ramaswami Aiyar, referring to the growing importance of books as a vehicle of popular education, said that more books were necessary in the different languages in India if their constitution was to be worked successfully and their Five-Year Plans implemented effectively. One of the important questions facing the book industry was to devise methods to accelerate the production of good books. He was glad to find in his work on the Press Commission, that Tamil, Telugu, Malayalam and Kannada had developed in

such a way, that in addition to the preservation of their ancient literatures, they had also adapted themselves to the modern needs in the field of journalism. But, journals or newspapers could never be a substitute for good books, he added.

LIMITED SCOPE FOR GOVT. ASSISTANCE

Referring to the role of the publishers, Dr. Ramaswami Aiyar said the publishers must always try to get the right type of authors and give them the necessary help. As regards the authors, his own view was that while the Government might do something for the growth

MATHEMATICS WITHOUT TEARS



Mr. A. H. Phillips of HMSO opening the Mathematical Exhibition in London. His article in the 'Monotype Recorder' on Mathematical Printing is eminently readable

of their literature, any patronage from the Government or assistance from corporate bodies might not be very good for the authors. For instance, the Sahitya Akademi might succeed in choosing the right type of men. But it would be always better for a good author to depend on himself and the patronage of the public. Publishers should act as intermediaries and work as a liaison between the authors and the public. He welcomed healthy competition among the publishers. Pre-publication publicity for books as was done in the case of Rajaji's "Vyasara Virundu" would be of some guidance to the publishers to catch the public eye. He also advised the publishers and the authors to cultivate proper taste among the public and try to publish inexpensive editions within the easy reach of the people.

Dr. K. M. George of the Sahitya Akademi said that the Akademi proposed to translate and publish 100 world classics in different languages. The best way of tackling the problem facing book industry was to produce books on a mass scale and that could be achieved only by setting up a huge printing press, preferably in Madras.

Mr. V. Subramanyan proposed a vote of thanks.

The seminar then discussed the problems facing the book industry with Mrs. Mona Hensman in the chair.

Mr. J. M. Adam of Orient Longmans Ltd., read a paper on the selection of manuscripts and the publishers' approach to it. He said the approach to the choice of manuscript was primarily an economic one and the publisher was greatly influenced by saleability, readability, competence and originality of the author, among other things. There should be mutual confidence between the publisher and the author.

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FORT, BOMBAY - I

INDIA'S LEADING JOURNAL ON
PAPER, BOARDS, STATIONERY
AND
THE GRAPHIC ARTS INDUSTRY

Mr. T. V. Kunhikrishnan, Secretary of the seminar, then read the paper of Dr. Mulk Raj Anand on the present relations of authors and publishers in the country. He said there were only very few publishers who could make any profit of publishing creative books and in such cases the National Book Trust or the Southern Languages Book Trust could be of some assistance to the publishers. Unless the distribution of books was envisaged on a mass scale, it was not possible for a private publisher to take the risks involved in such publication. The mechanics of publishing should also be perfected with the help of trained experts.

VISIT TO HEIDELBERG

Sri P. G. Rao, Colour Cartons Private Ltd., Bombay, writes:—

During my recent tour of the Continent and the U. K., I had occasion to visit several Factories

engaged in different industries, but very few factories gave me the striking impression as the Heidelberg Works in Germany.

The visit to this Factory was first in my itinerary and naturally I had formed no previous opinion of the type and standard of the works abroad. This undertaking therefore became that yard stick for me to measure the standard of efficiency one could normally judge during the hurried visits as I had.

My wife and I were taken round these works by Mr. Fritz H. Niepert, an extremely likeable man, one who knows how to befriend people no matter from which part of the world they come. We owe to him and his charming wife in no small measure for the most pleasant time we spent in the Works City of Heidelberg. The layout of the Factory, the constructions that have been added since the war to take care

of the tremendously increasing demand and the general efficiency appeared to be too good to be true and in all the departments we visited, despite the detraction of their attention because of the presence of strange people from a strange land, the workmen with their smiles on their faces as if to greet us into their midst continued to do their job without any interruption.

It was very gratifying to hear that since the war they had absolutely no labour problem and all those engaged in that wonderful Works have only one motto and that is to make a success of what they do. It was equally pleasing to learn that the management was taking extreme care to see that the needs of their workmen are attended to promptly, thus helping build mutual confidence within the Industry, which is the surest way of success in any undertaking.

Overlays Why & How

(Continued from page 22)

first thing in the preparation of overlay is to study the picture thoroughly and divide it into 2, 3 or more tones. The object should be to retain the tonal values of the original and blend the various tones from the solids to the highlights. Bad overlaying will result in hard and mechanical breaks apparent in the finished print. The advantages to be gained by the proper use of an overlay are:—

The contrast of the picture is greatly increased and the flatness is decreased.

The maximum tonal values are brought out in their true living form.

To a certain extent the grain of the paper is pressed by overlays.

The ink applied on the plate is completely transferred by overlays.

To a great extent, overlays help to prevent set-off, as set-off is an imperfection caused by too much ink, too little pressure, etc.

Even picking or plucking which is generally traced to improper pressure adjustment, too much of tack, etc., may be minimised by overlaying.

As the wear on the highlight dots is reduced, the life of the plate is lengthened by overlaying.

All these advantages may not sound direct, but nevertheless all of them are facts.

MATERIALS REQUIRED

The following materials are required to prepare overlays: An overlay board i.e., a sloping wooden board with plenty of lighting to judge impression, ink and tone. A sharp overlay knife, a good adhesive preferably glue, as paste has a tendency to have too much

of moisture, consequently curling the stock. A clean art proof of the block, without too much of ink and moderate impression. If engraver's proofs are available all the more better. Overlay paper: This is ordinary printing paper, say 24 lb. (20 x 30) Double Crown. Take three good pulls on this paper. Cut off all margins around and keep the illustration flush. Mark the sheets as I, II and III. The first is called the foundation sheet. On this, parts from the other two will be cut and pasted in proper position. Cut out all highlights from the ground sheet. Highlights are those portions which print white or the lightest in the picture. While cutting overlays use the knife a bit slantingly so as to cut the sheet with a bevel. This is to avoid abrupt change of tones which may show in the print. The bevel will give a natural blend to the varying tones in the picture. From the

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GANGES INKS

THEY ARE PRODUCED ON POWERFUL GRINDING MILLS OF THE
MOST MODERN TYPE. THE RESULT IS THAT THE PRINTER GETS

THE BEST QUALITY IN INDIA

second sheet cut all highlights and second lights. Second lights are those portions which are slightly darker than the highlights. Transfer the other portions to the ground sheet and paste them in position. If a two ply overlay is all that is necessary, we can stop with this. Now, the solids have two thickness of paper, the semi-solids have one thickness and the highlights no thickness of paper. If a three ply overlay is called for, cut out all solids from the third sheet and paste them in position on the ground sheet. It will be observed that the ground sheet is now having nothing on highlights, one thickness of paper on second lights, two thickness on semi-solids and three on solids. Minimum of adhesive should be used in mounting the ply one over the other. Some give a tissue over the solids. Otherwise the overlay is now complete and is ready for positioning on the packing. It is usual to keep the prepared overlay inside a heavy book to bring it to proper level. This also avoids curling or wrinkling. Hold the overlay in front of light and examine that every part has received the requisite amount of pressure and none has been neglected.

The usual method of registering the overlay in the packing is by means of stabbing with a sheet still held by grippers after impression and taking these stab marks of the bodkin as guide. Alternatively the edges of each block may be pierced on the packing while a sheet is still held by the grippers after printing, and taking this as a guide for proper registration. If wrongly mounted, the results will be made and the block may give a slur and also wear soon. In mixed formes the patching up sheet should be placed later and the overlay buried deep in the packing. Especially for printing on art paper, it is necessary to keep the overlay

at the bottom, but in the case of other papers it is not necessary to bury it so deep. On stop cylinders, a miss may be taken to serve as guide for mounting the overlay in position. After mounting, cross lines may be made either way of the blocks. In case it is found necessary to move the overlays these lines will help. After moving, fresh pencil marks are made. These marks will also help, if overlays move after the work has run for some time.

MECHANICAL OVERLAYS

The history of overlay is bound up with the history of reproduction of illustrations. When wood engraving was in use, handcut overlays were the only ones used. With the emergence of the process camera and the photo mechanical art of reproduction, mechanical overlays came into existence. For most of us in India, mechanical overlays are very rarely found to be used. The cost is one factor. Where fine detail is to be reproduced, photo-mechanical process gives more accurate printing plates than hand engraved plates. Similarly, for fine detail blocks, hand-cut overlays are difficult to prepare and very experienced persons are called for. Such persons are few and demand high rates of wages. The mechanical overlay offers a solution to all these.

It is said by authorities that the earliest mechanical overlay was an etching in metal foil. The chalk mechanical overlay is more than fifty years old and has been successfully used by the trade. As it is well nigh impossible for anyone to cut by hand the minute variations in tone, the chalk mechanical overlay reproduces all the gradations of tone faithfully. When line work is combined with screen work, as in the case of

lettering in some illustrations, hand-cut overlays fail to give proper emphasis for the lettering. In chalk overlay, the lettering can be made to receive the emphasis due to it. Better print results as a consequence of the use of mechanical overlay.

CHALK MECHANICAL OVERLAY

Special overlay boards are available in a variety of thickness. The board is a sheet of paper on which has been deposited chalk. It resembles an exaggerated version of coated paper, where the coating is rather too much. The thickness varies from .005 inch to .008 inch and .010 inch. One side is stained pink to serve as a guide. Both sides are coated with chalk although the thickness of coating is markedly less on one side.

(To be continued)



Mr G. C. Hart, Production Manager of the most well-equipped Imperial Tobacco Co. India Ltd. (press) seen with Sri V. K. Sriramulu, Head of Printing Technology, Regional School of Printing, Madras. Mr. Hart is looking with much interest through the Job Sheets of the Plate-making Section of the RSP, which he visited recently.

Regional Printing Associations

(Continued from page 15)

as these local periodicals thrived on Government Sale Notices (Nilami Istahar) are unable to continue without these notices, which have practically ceased due to the Estate Acquisition Act.

And whereas the Land Reforms Act provides for certifying the defaulters under the Act, this Conference requests the Government of West Bengal to remember the condition of the printers in mind when framing rules to the aforesaid Act and to provide clauses therein requiring publication of Certificate Notices in these periodicals."

SIXTH MAHARASHTRA PRINTERS' CONFERENCE, SANGLI

The Sixth Session of the Maharashtra Printers' Conference was held at Sangli under the auspices of the South Satara Printers' Association on the 12th and 13th January 1957 under the Presidentship of Shri V. A. Patwardhan (Manager, Aryabhusan Press, Poona). The Rajasaheb of Sangli declared open the Exhibition of Fine Printing.

V. A. PATWARDHAN'S PRESIDENTIAL ADDRESS

While admitting that it was the duty of the Government to check exploitation of workers in Industrial concerns, Shri V. A. Patwardhan appealed to the Government to consider the problems of small industrial concerns in a different way. He said "In small industrial concerns, the relations of the owners and the labour were cordial and family like. If at all there were any differences between the labour and the owner in a small scale concern,

they were very temporary and comparable to a storm in a tea cup. The owner and the labour adjusted their relations amicably. The printing industry in Bombay State was a small scale one. But to such small concerns, Acts applicable to largescale and big industries were applied. In fairness, there should be separate laws for large-scale industries.

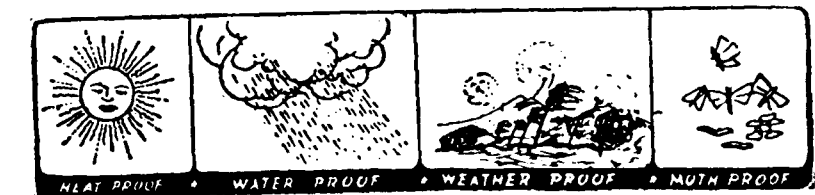
Injustice must not be done to the other party in the industry while doing justice to one particular party. The Government should enact laws to safeguard the interest of the labour but care has to be taken that such laws do not exploit printers. But unfortunately that is what is exactly happening. Government has been disregarding the small industries. These

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laws affect more the small industries than the bigger ones. The Government must therefore, use discretion in applying such laws.

Shri Patwardhan described the Minimum Wages Act as the absolute Monarch of the labour laws. Unless Government printing work is given to private printing presses, it would be difficult to execute this law. While assuring minimum wages to the labour, consciousness in the labour about their duties should have been created by the Government. In the absence of the sense of duty, there have been disputes between the owner and the labour, which have become suicidal to the industry. Shri Patwardhan appealed to the 1500 owners of printing presses to unite to redress their grievances and ventilate them through their representatives in the various legislatures. He stressed need for provision of training classes in printing industry, to train workers in composing, printing, binding and costfinding. This, he said, was necessary to meet the dearth of trained and skilled labour in the industry. He criticised the Government policy of increasing the number of Government printing presses and that *the charges of printing in Government printing presses would be dearer than in private ones.*

The Conference, afterwards passed the following resolutions: (1) A five-man Committee be appointed to find any simpler formula of cost-finding in order to check cut-throat competition in the Industry. (2) The Bombay Government should make definitions of the various categories of workers, as defined by the Minimum Wages Act, in order that there should not be any friction in the implementation of the Act. (3) A three

man Committee be appointed to suggest to Government ways and means for the codification of laws. (4) Too much restrictions should not be imposed on the import of newsprint. (5) The Bombay Sales Tax Act should not be made applicable to the Printing Industry, as was done before.

250 printers from all parts of Maharashtra assembled for the Conference at Sangli.

SIVAKASI GRAPHIC ARTS SOCIETY

The Sivakasi Graphic Arts Society celebrated its first Anniversary on the 16th February at the premises of the Sivakasi Master Printers Buildings. Sri CKAD Chidambara Nadar, Partner of the Coronation Litho Works presided over the deliberations. Sri KSA Arunagiri Nadar, one of the pioneers of Lithography in this part of the world, and Partner, the National Litho Works, delivered an interesting, illuminating and instructive lecture on the need and methods to improve the technical know-how in printing technique. He made particular reference of modern trends in Offset Techniques, the emergence of Photo-Offset and the gradual disappearance of the good old Litho Stone direct printing. He exhorted young men in the industry to keep abreast of the times and face the problems squarely and get over them. Sri P. Dharmar, Secretary of the Association proposed a vote of thanks. The President of the Society is the foreign returned technician of Coronation Litho Works Sri D C Bhaskar.

The highlight of the Anniversary celebrations was an exhibition of printed specimens of the Sivakasi Printers. Prizes were awarded to outstanding entries and the exhibition was kept open on the following day also.

Layouts and Lettering

(Continued from page 8)

The four cities are in Gill Sans Caps inter-spaced with a rule rounding off the advertisement.

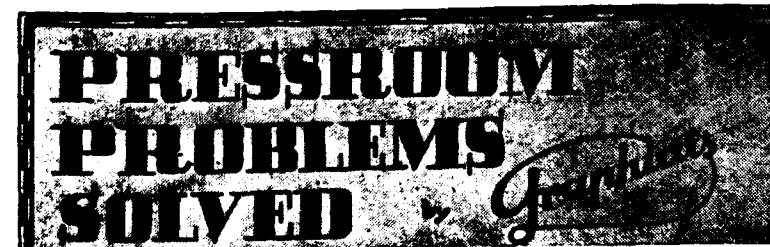
The only thing that needs pointing out in the OSTERMILK advertisement is the illustration of a Western mother with bobbed head. If it is not a Western figure, the appearance is so deceptive!



HAVE A LOOK AT COW & GATE!

The Cow & Gate advertisement 4 x 3-col. begins with three lines in Corvinus Bold Caps and Lower "That Cow & Gate Look!" Below these in Plantin 8-pt. is the main text set in left flush right asymmetrical indention with a tin of Cow & Gate tucked in to the left of the matter by indenting a few lines. At the bottom is the panel containing the words "Cow & Gate Milkfood" and "The food of Royal babies". To the right is the large illustration of a laughing baby done in charcoal. The treatment is simple and yet very effective, the elements are few, the slogan is straightforward. The Central Advertising Service of London have brought out this fine publicity piece about the popular Cow & Gate food.

The characteristics of babies are as varied as the campaigns for the baby foods. Some prefer straight off-the-shoulder stuff. There are others who react only to subtle tricks. It is true that there is no end to the possibilities of treating the problem of child food.



In these pages "Graphicus", an expert in the printing and allied industries, solves month by month Pressroom Problems of the printers. All questions may be addressed to "GRAPHICUS", C/O PRINTINDIA

141. Q. I am tackling what you technical folk would call work-ups. My lino two column slugs in a magazine often rise and blank slugs print, furnitures also rise. I am in a fix, after trying all the regular dope. Perhaps you may have something up your sleeve in this line. If so, kindly pass it on to us.

A. I suggest that your slugs be tested with a micrometer; you may find they are slightly tapered in which case it will be necessary to call in a Linotype Mechanic. On the other hand I think the trouble is caused by using worn furniture or bowed chases; unless your forme is properly and firmly locked up you will find a tendency for type, slugs, spacing materials and furniture to rise during the run. Ensure that your furniture is even and square and dispose of any damaged uneven or warped pieces, also examine all your chases to see if any are 'bowed'; if cast iron chases are bowed there is little that can be done with them except use on short runs or scrap them; if they are steel get them squared up by a competent firm of engineers.

142. Q. While printing a block, some parts in the centre do not show up in print. It is a half-tone made by a reputable firm of engravers and their proof looks quite good. The mount has been levelled and every possible thing checked. Where does the wrong lie?

A. It would appear that the centre of your block may have been weak and has given way under pressure on the run. The Block maker's Proofing Machine did not put sufficient pressure on it to cause it to sink. If you have a type high guage you will be able to check the height at the points where it is not printing. If the block is O.K. it must be due to make ready and you will find

that your Tympan Face is uneven; new packing and careful make ready will remedy this.

143. Q. I print a lot of ruled forme work. I encounter often what I prefer to call ink squeeze. The rules do not print sharp and clear. When I increase impression, it becomes a cutting rule. Is there a way out?

A. It would seem from your question that you are using unsuitable ink on a hard paper. An oily thin ink of low strength will tend to squeeze specially as there will be a tendency to run more ink. I suggest you use a first class letterpress ink of good body and high strength. The extra cost of a better quality ink will be amply compensated for by the economy in the amount used and the improvement in the work.

144. Q. We are using mono-set matter for our book-work. During corrections we have to use the usual spaces, thick, middle etc. The corrected lines always have a tendency to be out of tune with the rest, being not accurate in length. I have tried the best compositor on the job, still the trouble is there. Please throw some light.

A. I would suggest you examine your composing sticks, I have noticed in many presses old and inaccurate sticks are in use. It will pay you to buy new steel sticks. I don't think your Compositor is to blame.

145. Q. There is a small difference of opinion between me and my customer. We took a contract of blank forms to be printed. On our own initiative we stereotyped these forms and printed off to reduce machine time. Now the customer claims the stereos as his property. Where are we legally?

- A. Stereos, duplicate blocks or any other like material purchased by the Printer for the purpose of running a job is no more the property of the customer than the type a printer uses to set a job. The customer can only claim these if he supplies them or they are charged for as an extra item on his bill.
146. Q. We have a stop cylinder and two-revolution machine. To us, both give good account of themselves. There is an opinion in trade circles that one is inferior than the other. You may not be eager to be bracketed in this controversy. But as a qualified technician, do you encourage the idea that the stop cylinder idea is obsolete.
- A. This is one of those theoretical arguments that has no practical solution. Excellent work can be produced on both types of machines and the fact both types are still manufactured by reputable firms is, I feel, a good enough answer to those who maintain the superiority of one or the other type.
147. Q. A customer wants to make carbon paper. Is there a way to make it with our printing machines? What special apparatus do we require?
- A. The manufacture of carbon paper involves the installation of specialised machinery and I suggest if you are contemplating producing this item of stationery, you make enquiries with the various machinery agents who will be happy to advise and help you.
148. Q. There is a small offset press for sale. As we print generally office stationery for quite a number of firms, we think it is a good buy. Would you advocate our buying this small offset? There is a version that it is not having the printed look, but only a mere duplicating machine. I do not think this is an unbiased statement. Do you?
- A. The type of Offset Press you have in mind, I believe, is rather more a duplicating machine than a printing machine. This type of machine however can be used for quite a number of office stationery jobs very successfully. I suggest you see the machine fully demonstrated after which you will be in a better position to decide on its purchase in the light of your own requirement.

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I, V. S. N. Murthi hereby declare that the particulars given above are true to the best of my knowledge and belief.

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