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OFFICIAL JOURNAL OF THE INDIAN FEDERATION OF PRINTING TECHNOLOGISTS

Vol. V

AUGUST 1957

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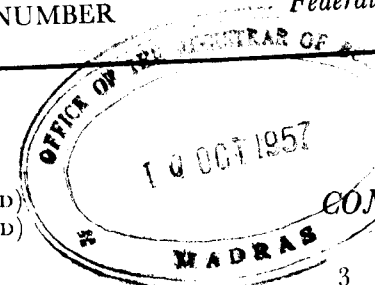
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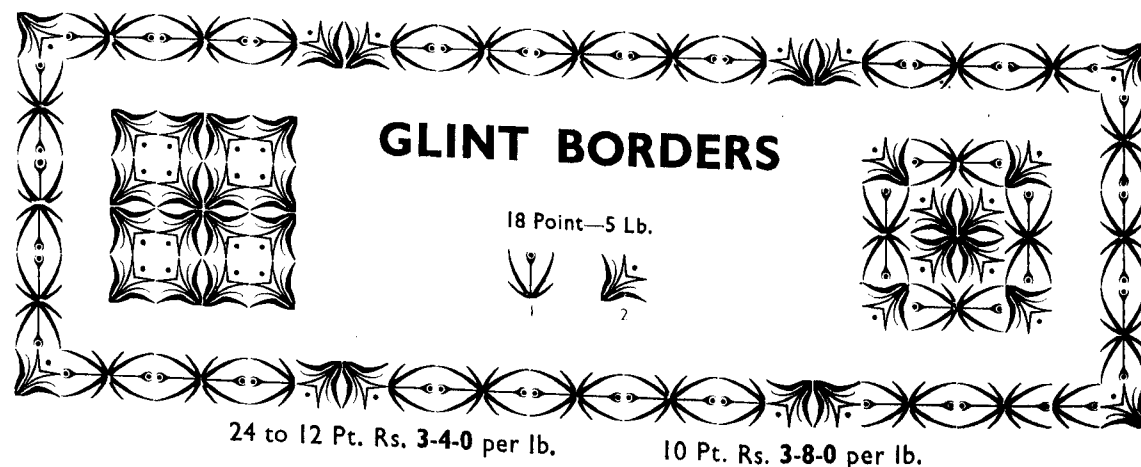
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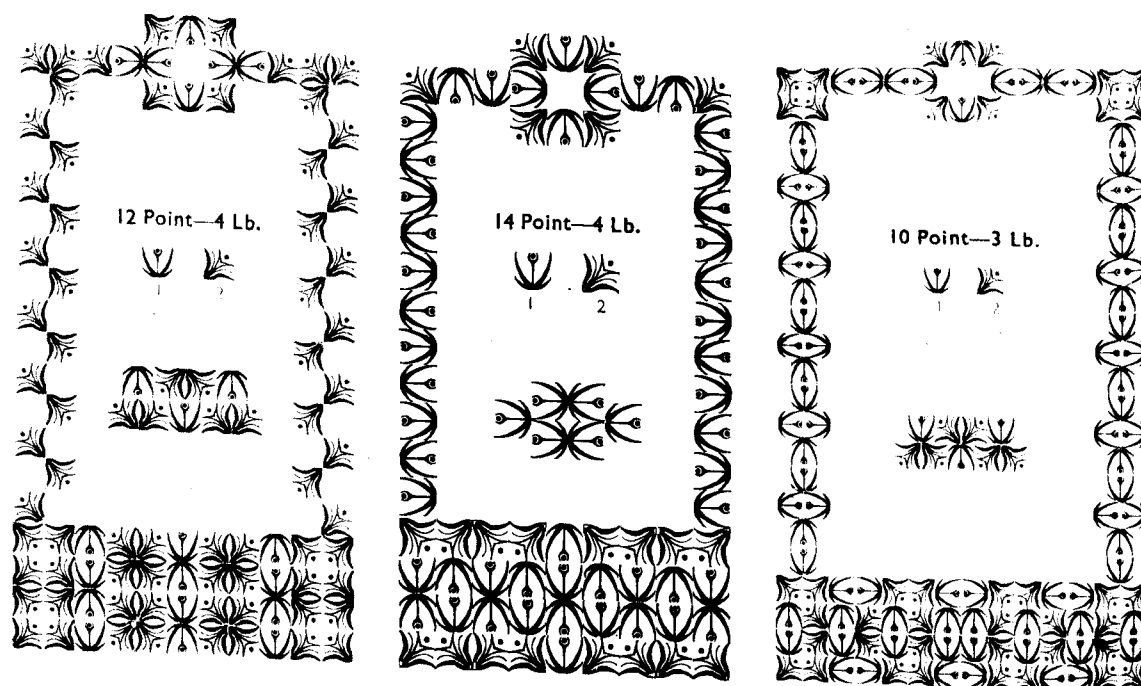
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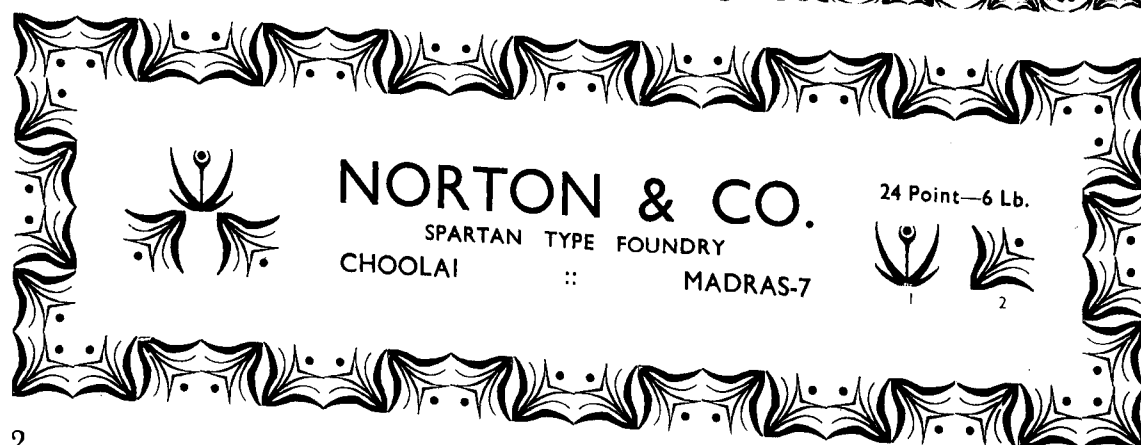
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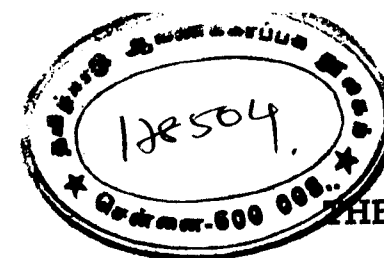
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THE FOURTH MILESTONE

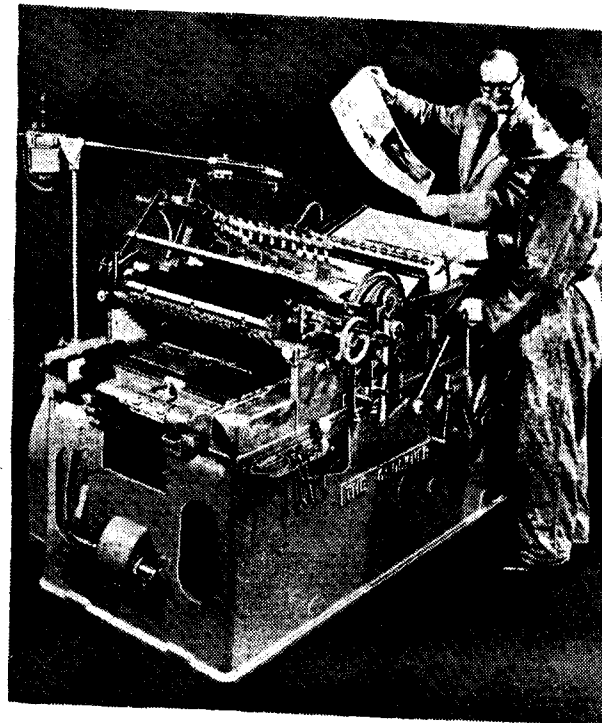
A previous editorial, and down the years, many such, have dealt with a theme which now may be continued with a slightly different twist. A journal such as the PRINTECH has many different functions: to stimulate the study of the technical problems of the art and craft of the industry; to keep members informed of matters that concern their progress and rightful place in the industry; to give advertisers a platform from which they can appeal to the technical interests of their customers; and finally and most important too, to give a lead and to forge cohesion among members scattered all over this vast country of ours.

Such an official monthly journal represents the mind of the supreme executive body of an association, just as that body endeavours to speak with the collective voice of the members, and so there are many times when the voice of the journal may speak with authority. All the impetus to progress, however, is not centred either in a body of elected members or in a representative journal. Much of it lies in the individual members.

The one thing which is needful to set the Association off to another year of progress is the determination among members that, if there is a place for it in the graphic industry of our country, it must set itself to perform all the functions for which it is constituted, so that it becomes of real benefit to its members and to those who should be within its ranks. Therefore every member should see that all technically qualified personnel enrol as members, and take an active interest. We must eliminate the question "Of what use is it to me."

I take the opportunity of placing on record our appreciations and thanks to the advertisers, donors and well wishers for the cooperation extended to us and I am sure that they would continue it in larger measure.

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LAUSANNE

FROM

1st to 16th JUNE 1957

THE eyes of the world's printers were focussed on Lausanne, Switzerland, when Graphic '57, the international exhibition of the printing industries and allied trades attracted more than 400 exhibitors and filled 20 halls with the latest machines and equipment that the world's manufacturer had to offer. Graphic '57, held from June 1-16, was generally accepted as one of the best designed ever. The exhibits, additional to those of the machinery, were not just after-thoughts; but were carefully planned as integral parts of the exhibition. There was an historical poster show, a display of books and incunabula and another of Swiss advertising and graphic art. In the history of printing exhibition there was an item of particular interest to every visitor. This was the first cylindrical press, made by Koenig and Bauer in 1814 for printing The Times.

The International Graphic Alliance (A.G.I.) had its own pavilion, and one of their most striking exhibits was "Portrait of an Age." There was also a pavilion of scientific research, organised by UGRA, the association for the promotion of research in the printing trades. Graphic '57 was distinguished by the concurrent of holding of 9th International Congress of Master Printers under the

Chairmanship of H. Wyss, President of the Swiss Society of Master Printers. Leading printers from all over the world attended the event. Below Printech features some of the exhibitors with details of their stand.

LINOTYPE MACHINERY LTD

Two New-Style Presses with Magnesium light alloy bed

LINOTYPE and Machinery Limited devoted their entire stand at Graphic 57 to the display of two sizes of their New-Style (CR/3) Miehle two-revolution letterpress printing machines. The No. 3 size takes a sheet of 32½" x 45½" (813 mm x 1,156 mm) and the No. 4 a sheet of 26" x 40½" (160 mm x 1,029 mm).

The latter machine, normally capable of a speed of 3,300 impressions per hour, will be fitted with an entirely new light alloy type bed of magnesium elektron. This bed raises the maximum speed of the No. 4 press by over ten per cent to 3,650 impressions per hour.

The new bed is not yet in full production, but Linotype and Machinery Limited plan to use the opportunity afforded by the exhibition to obtain the opinion of the many printers who visited their stand. Given a favourable reaction; it is stated the bed will then be installed

AUGUST 1957

2

PRINTECH

5

in a British printing office and after a comprehensive field testing period, put into production.

Both machines on the L & M stand incorporate a number of post-Ipex developments designed still further to improve the performance of the new unit. These include...

Bar-operated Side Lay.—The side lay is

now operated by an oscillating bar moved by a cable. The cable remains in exactly the same position at all times even when the side lay is shifted from one side of the press to the other or adjusted to suit varying sheet sizes. Hence there is no distortion in the cable and none of the variation to which cable distortion can give

rise if improperly set.

Sliding Guards.—Guards that are completely efficient in themselves yet do not impair the efficiency of the operator in the slightest degree are the aim of L & M designers. This aim has been realised in the effectively simple guards over the chain delivery. Though they screen the chain along its entire length, the four panels of which the guard is composed may be slid along in a horizontal plane (in principle, in the same way as bookcase panels) to allow generous access at any point from cylinder to pile.

Robust Back Stops.—Another example of L & M thoroughness is the pair of back stops over the feeder pile. These have been strengthened and redesigned independently of the separator box of which they were previously a part.

Baffle Plate.—A baffle plate, originally designed for use on the feeder with extra light-weight stock, has been found to be most effective with other weights of stock in guiding the sheets over the leading roller and on to the feed board tapes. It has, therefore, been adopted as an 'improvement' and will be incorporated in future presses.

The earlier changes in design which have earned the press the title 'New-Style' include, the roll-back feeder which when unloaded may be effortlessly cleared of the bed to give the compositor or minder complete access to the forme.

Another feature is the provision for continuous loading by which, if desired, paper may be fed in continuously at one end of the press and the printed sheets removed from the other without interrupting production by stopping the press to stack or truck away stock. L & M claim that with this New-Style unit, actual output more closely approximates to the advertised speed than is the case with any other press on the market.

Moreover, any variation in the speed of the unit has no adverse effect on register since the swinging grippers ensure registration at all speeds by securing a smooth transfer of the sheet from feed board lay to cylinder. The

chain delivery ensures that the sheet is under gripper control during the whole of its journey from cylinder to pile. There are no tapes, no rubbing on the printed image, and no problems with poor stock.

Another boon to printers is the provision on the L & M New-Style unit both for single-sheet and stream-feeding. Merely by turning a lever the minder can switch at will from one to another and also, if necessary, automatically wind back the sheets to be restacked in the feeder.

In the CR/3 unit, printers will find all the well-known qualities for which L & M two-revs. are famous the world over—the same rolling power and impressional strength and the same general robustness and smooth running as their predecessors.

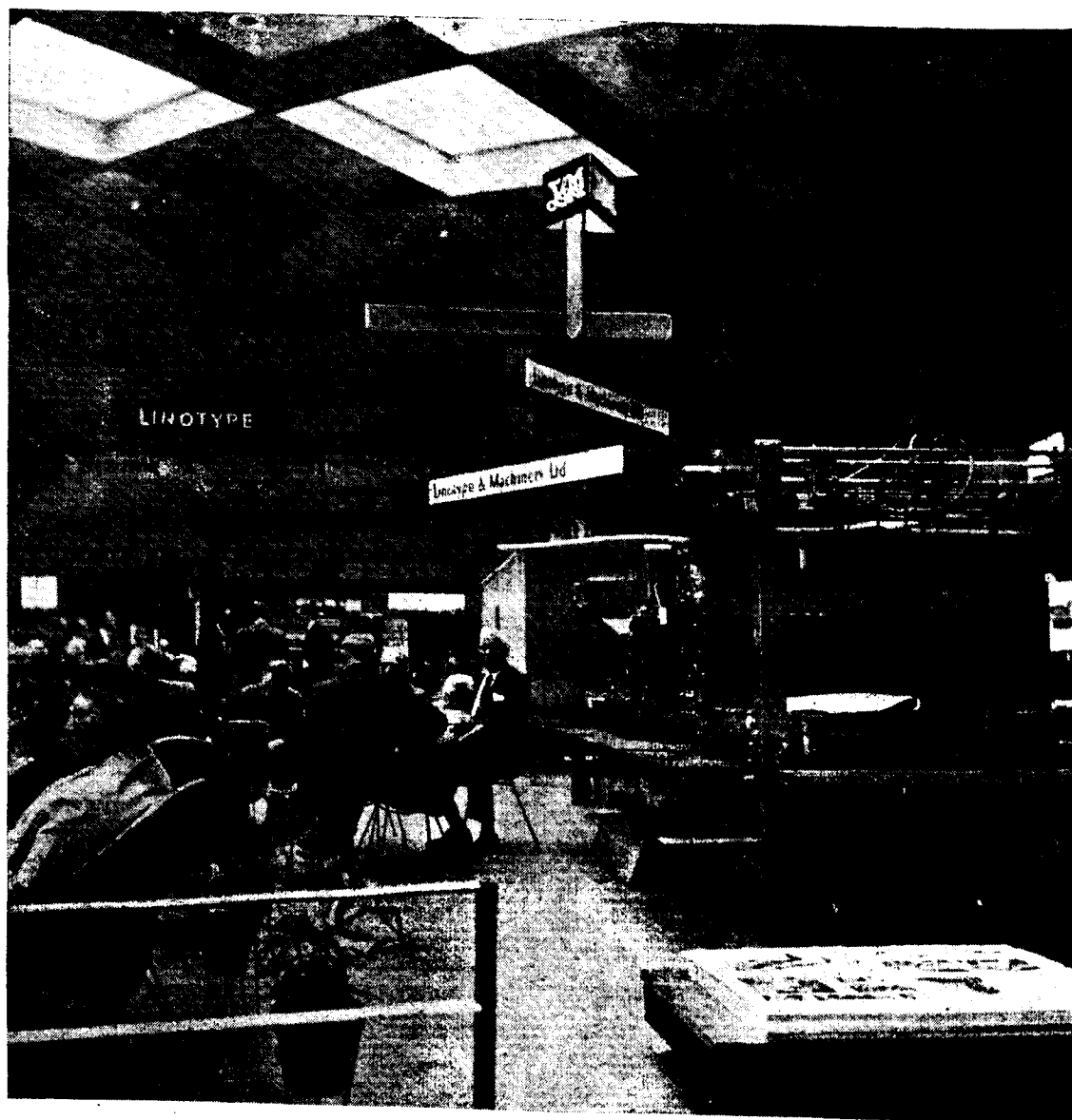
Monotype Corporation and Pictorial Machinery Ltd.

Lithotex-Dirats Powderless Etcher

At the combined Monotype Corporation and their subsidiary Pictorial Machinery stand considerable attention was paid to the Lithotex-Dirats Powderless Etcher. This machine is to be manufactured shortly in U. K. by Pictorial Machinery Ltd., Kelvin Way, Manor Royal, Crawley, Sussex.

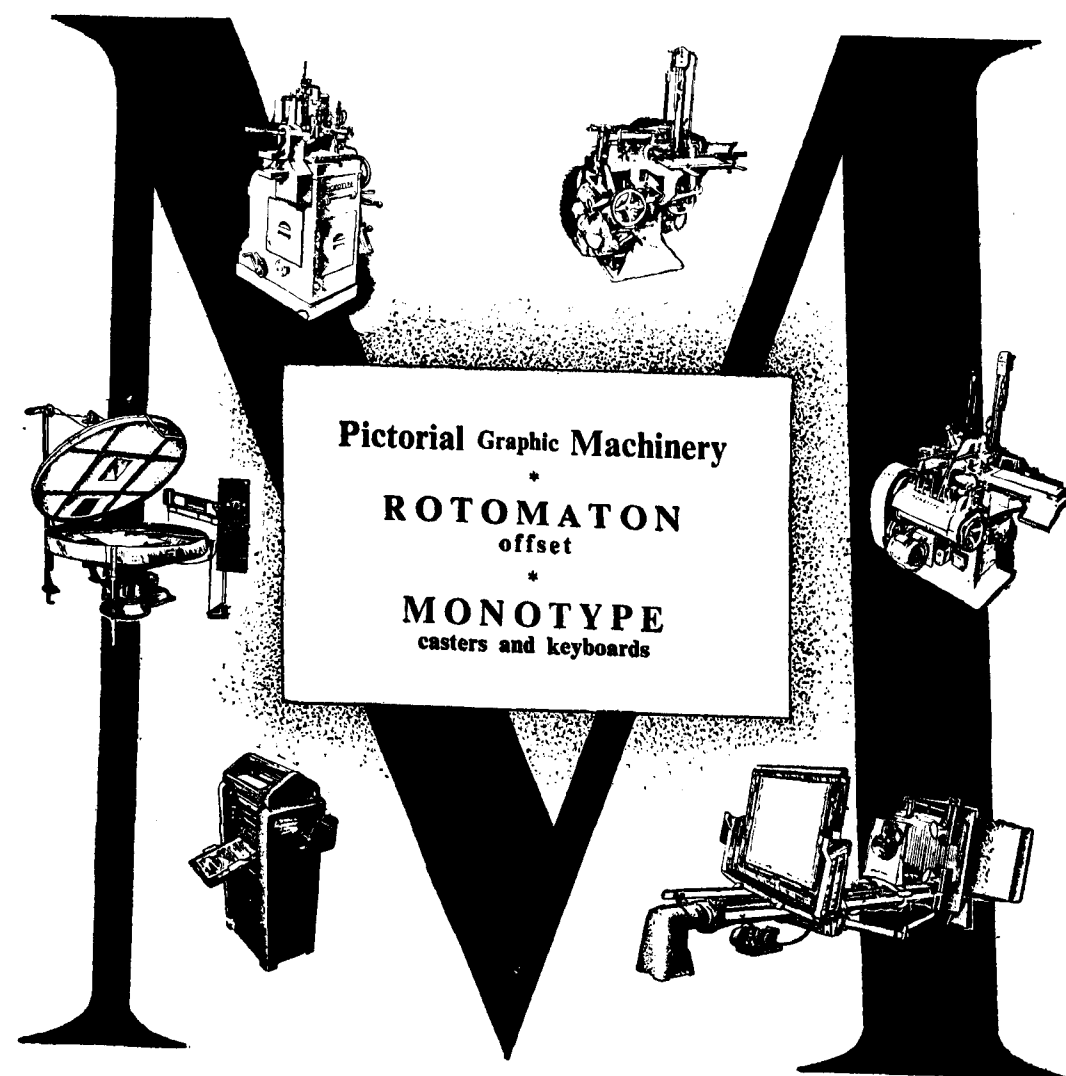
The machine has been designed for the rapid, powderless etching of fast-etching, photo-engraving zinc, for half-tone, line and combination work to a maximum plate area of 24" x 24". The need for particular emphasis on economical production has been the aim of the designers, and in this respect the technique compares favourably with any existing photo-engraving process, a factor which will have considerable significance on future trends and developments in printing and related processes.

One of the major features of the process is that the same etching liquid is used for half-tone, line and combination plates, and that they can be etched in one operation without stopping the machine or changing the constituents of the bath. Under normal working conditions the bath will remain stable for at least twenty-four hours, and it can etch from eight to twelve plates in succession with the



Stall of Linotype & Machinery Ltd. at Graphic '57. One of their New Style Presses is seen on the right.

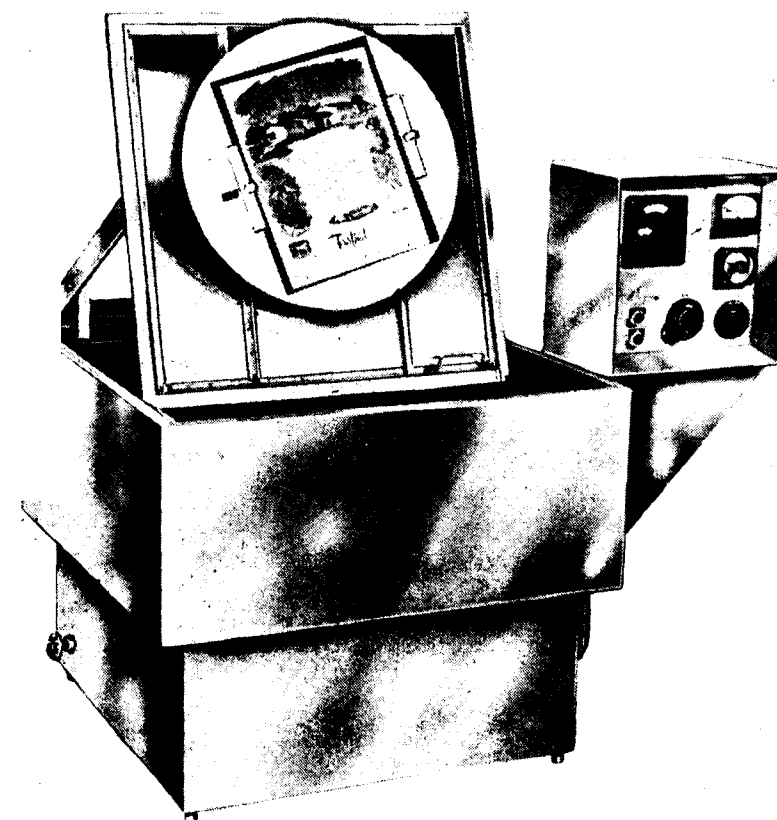
A Strong Team



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"Lithotex" Dirats Powderless Etcher

same solution, thus ensuring a consistent quality of plate production.

It takes ten minutes to etch a zinc line or combination plate to a depth of .020", and from two to three minutes to etch a half-tone to a depth of from .0025" to .0062" according to the coarseness or fineness of screen used. The machine can also be used for the etching of magnesium plates.

The machine, say the makers; is also particularly suited to the processing of dry offset plates or rotary letterpress plates. Five minutes is sufficient for a .010" etch, which will be free from undercut with perfectly smooth and uniform shoulders and a flat base.

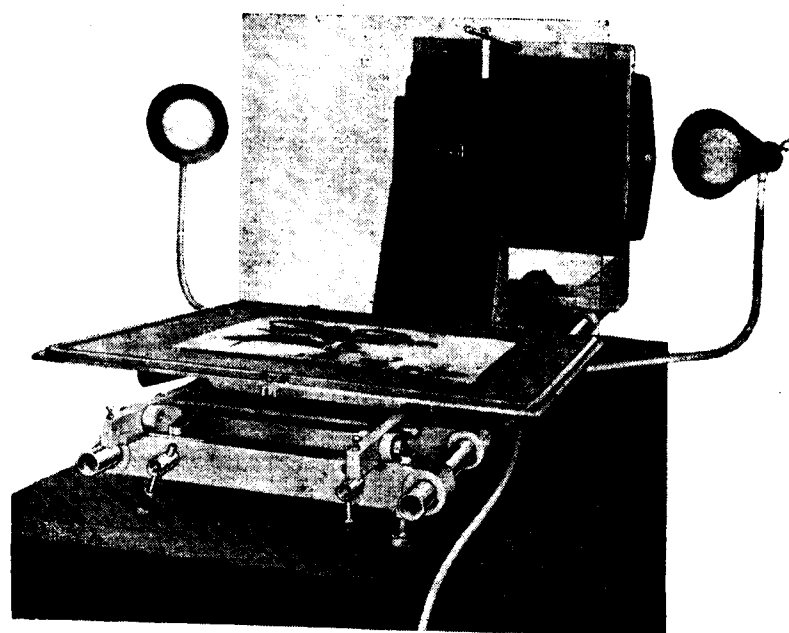
The machine consists of a tank, supported on a frame of welded construction, containing the etchant fluid and a series of paddles which

throw the liquid to a vertical splash action. A series of tube coils supported within the tank provide a cooling system which is fed from the normal water supply. This is controlled by means of an electrically-operated valve in conjunction with temperature control equipment. Heating is provided by means of a 4 Kilowatt heater unit fitted to the underside of the tank, which is also governed by the temperature control equipment.

A pump unit recirculates the fluid in the tank and a dam fitted adjacent to the recirculating outlet maintains a level of liquid free from surge and correctly mixed.

The lid of the machine, which is closed during etching operations, supports the plate-holder. This holder is mounted on a planetary gear system, operated by an electric motor

"Lithotex" Major Ripro Unit—the copy holder in horizontal position ready for loading



imparting a rotating movement to the plate at a uniform speed whilst describing a circular path. This unique planetary motion is more effective than simple reciprocating movement in achieving uniform exposure of the plate to the etching liquid.

A timing system is provided to control the etching cycle, whilst paddle speed may be readily adjusted by the variable-speed motor unit with which the machine is fitted. Excess fumes are removed from the tank by a vent fan and a suitable ducting system.

The machine has been designed to ensure maximum ease of operation, and all controls are grouped in a panel at a position convenient for the operator.

'Lithotex' Major Model Repro-Unit

FOLLOWING upon the introduction to the Trade last September of 'Lithotex' Repro-Unit, there has been a great demand for larger unit. To satisfy this need, Pictorial Machinery Limited has now produced the 'Lithotex' Major Repro-Unit, which was exhibited for the first time at Graphic '57.

This larger unit is a precision-built apparatus designed to cater for the printer, using the largest type of small-offset machine, who wishes to produce his own printing plates economically.

The Camera will take negatives up to a maximum of 22" x 18" with a range of two enlargements and two reductions using an 18" wideangle colour corrected lens. Owing to the popularity of the Kodak Autoscreen material, the standard unit does not include half-tone screen gear although this can be incorporated as an optional extra. The 30" x 24" Vacuum Copyholder opens book-fashion when in the horizontal position for loading purposes and has been designed for use also as a Vacuum Printing Frame. The copyholder is illuminated by two tungsten ballasted mercury vapour lamps, one of which is swung centrally when the Copyholder is used as a Printing Frame.

The hand-operated Whirler (a power-driven unit can be supplied if desired) accommodates plates up to 24" x 20" and is housed in a drawer in the specially designed packing

case which is readily converted into a working bench and storage cupboard.

The cost of the complete equipment is £350. (Many of our Printers had a chance of seeing the smaller Unit at Delhi Printer's Exhibition in April 1957.)

3-Phase Arc Lamp

AMONG other well-known Pictorial Machinery equipment on show was one item which deserved special attention. This was their three-phase Arc Lamp, first of its kind to be designed and manufactured in the U. K.

In comparison with the conventional two

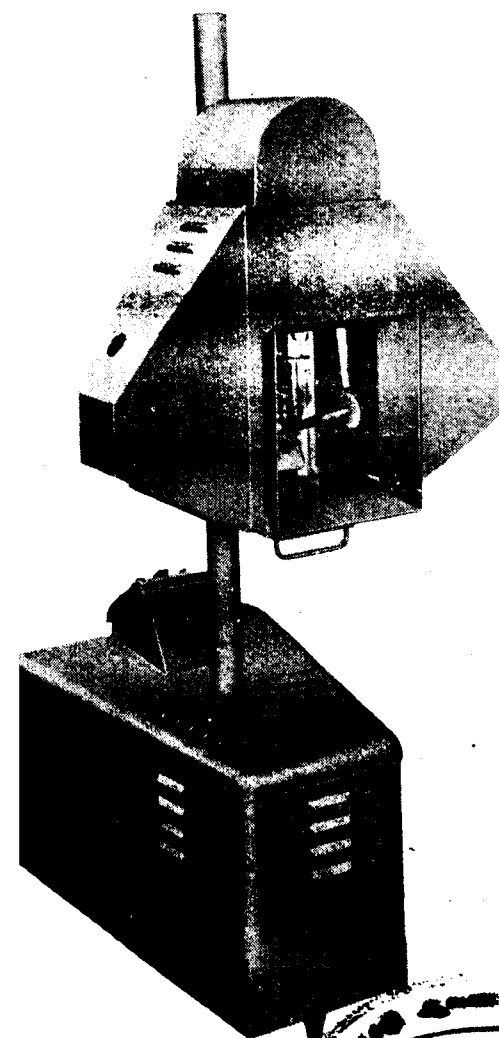
carbon type of lamp, the new 3-Phase Arc Lamps have the following advantages. (i) a far more powerful and even light; (ii) the lamps are not so subject to any voltage fluctuation of the mains supply; (iii) they are more economical in operation; (iv) they satisfy the requirements of the Electrical Supply Authorities by balancing the loading.

The 'Lithotex' Extra High Power Printing Down Arc Lamp, Model 'V3' is mounted on an adjustable stand together with the transformers and choke coils: the whole unit being mounted on castors for easy positioning within the department. The lamp is approximately three times more powerful than the average 50 amp. two carbon arc lamp. It has a colour temperature of 5200° Kelvin with a source illumination of 46800 candle power whilst only consuming 12 amps from each phase.

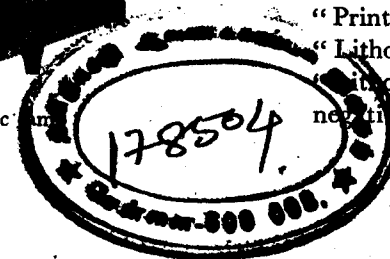
A downwards burning arc lamp of similar type is available for working in conjunction with a printing frame being exposed horizontally and this type of lamp can also be fitted to the 'Printex' range of Step-and-Repeat Machines.

The following 'Monotype' machines were also exhibited: An installation of Keyboard and Composition Caster, showing the wide range of work which can be handled on these basic machines with minimum outlay; Two Standard Keyboards (one equipped for setting Arabic) and a Duplex Keyboard; Two Composition Casters, one fitted with display Type and Lead & Rule Attachments the other with Triplex Arabic equipment; Two Super Casters, demonstrating the great versatility of this machine in producing type, spacing and mounting material, leads, rules, furniture, etc; A 'Monophoto' film-setting machine with Correction Device; A Boston Stitcher No. 7 and a Boston Multiple Stitcher.

The following equipment produced by Pictorial Machinery Ltd. were on display: "Printex Cadet" printing down machine; "Lithotex Junior" step and repeat machine; "Lithotex Minor" step and repeat contact printer; "Lithotex" Model "x"



3 Phase Arc Lamp





A view of stall of Hawthorn Baker Ltd. at Graphic '57 where the most modern mounting bases were displayed



A view of the stall of Polygraph Export GMBH, Berlin at Lansaunne Exhibition. Mr. F. Neubert, Managing Director Polygraph Export GMBH, Berlin, along with Mr. S. Bhandari, Managing Director of Indo European Machinery Co. Pr. Ltd., Bombay, are seen inspecting the exhibits.

printing down frame; and the "Chemco" Roll-strip Film Camera.

Hawthorn Baker Ltd.

The manufacturers of the world famous "Cornerstone" precision printing equipment, Hawthorn Baker Ltd., displayed their complete range of materials at Graphic '57. Along with their light weight, anodised duralumin furniture and quoins, the "Cornerstone" Elektron Honey Comb Base, the "Cornerstone" Mixed Forme Base—the most modern mounting bases in the world today—were also exhibited. The newest of all—the "Cornerstone" Register Blocks—were shown for the first time. These Register Blocks are made of hardwearing anodised duralumin and machined to extremely fine tolerances. Used in conjunction with Mixed Forme Base, the Register Blocks make possible easy micrometer adjustment of every type of plate within the mixed forme, say the manufacturers. They are made in a range of sizes from 4 x 4 cms to 4 x 32 cms and make use of standard Honey Comb Base Hooks. The details of the Collobloc system of halftone block making for which Hawthorn Baker Ltd. has been made world agent were available at their stand.

Frank F. Pershke Ltd.

Graphic '57 provided Frank F. Pershke Ltd. with their first opportunity of showing the new Glockner Cutter and Creaser to the World's Printers and carton makers. Their Swiss agents Multipli showed this machine. The new cutter and creaser can cut, crease and emboss and perforate sheets up to 16" x 22 x .03" at speeds, which often exceeded 3500 iph. The most outstanding feature of this Machine which was reviewed in these columns in our May '57 issue is the stainless steel make ready sheet which fits on the bed under the forme and which can also be stored with the forme in anticipation of repeat order. (The agents for India are M/s Charles Morgan and Co. (Pr) Ltd., Lingi Chetty St., Madras).

Rotaprint Ltd.

In all three British Rotaprint machines were exhibited on the stand of Guhl & Scheibler A. G. Models R 33/90 and R 40/80 (which

are familiar in India) were producing a variety of print throughout the exhibition.

The model R 30/90 shown, prints an area of 17½" x 13" (43.8 x 33 cm) on a sheet up to 20" x 13½" (50.75 x 34.15 cm). Equipped as it is with automatic suction feed and accurate lays it will take the finest super imposed colour work in its stride. Other important features are automatic pressure adjusted, cradle inking system and simplified push-button controls.

All the machines are fitted with the Rota-print damping system, which has proved its efficiency for many years. In addition the Rotaprint numbering attachment can also be fitted thus combining printing and numbering in one operation.

Heidelbergs at impressive speeds

The Heidelberg company attracted a weight of public interest. They had an assembly of several machines, all busily producing real work of good quality at impressive speeds.

Intertype Limited

Many new and interesting features of Intertype were demonstrated to the visiting printers which would enable them to do their type-setting more efficiently and profitably. Intertype were only exhibiting High Speed machines, which shows that a considerable part of the Intertype manufacturing programme is being devoted to High Speed and Teletypesetting machines. These machines are sold as Single or Double Distributor machines with from 1 to 4 magazines. At the present time more than a thousand High Speed machines are in use. In Europe alone over 150 Intertype High Speed Teletypesetting equipments are in operation.

Intertype F. 4. Four Magazine High Speed Mixer

This Intertype Mixer with four magazines is a considerable improvement on the first Teletypesetting equipment which was installed in Great Britain 25 years ago by "The Scotsman" newspaper of Edinburgh. This organisation has recently added four new C. 2. High Speed Teletypesetting machines to the two machines

which were originally installed in 1934 and which are still working efficiently.

The Intertype High Speed Mixer machine at the Exhibition was setting 12 lines per minute on straight text matter, and it was completely trouble free in operation because of the special features which had been incorporated in it:—

The Second elevator weight lever

Cushioning cylinders

Three pitch distributor screws

These features ensure that the machine will function with maximum efficiency. All visitors to the Exhibition were greatly impressed by the performance of the Teletypesetting High Speed machine.

Intertype 3-way Centering & Quadding device for T. T. S. and manual operating

This improved Intertype Quadding and Centering device has an electronic control system for T. T. S. operating. The system ensures that centred and quadded lines are set automatically and in the correct order even though three lines may be circulating in the machine.

The Quadding and Centering device can be operated electrically or mechanically, as well as the electronic system which is used for T. T. S. operating.

The electronic mechanism is situated just above the keyboard and the mechanical switches on the vise frame.

Intertype Air Mould Cooling Device

The Intertype Mould Cooler blower is carefully designed to blow a continuous stream of air directly on to the casting moulds when the machine is in regular operation.

This helps to ensure that the line of type maintains a high degree of uniformity and solidity by avoiding over-heating of the moulds. The Intertype mould cooling blower is thermostatically controlled so that when the moulds begin to exceed normal casting temperature the stream of cooling air is automatically switched on and continues to operate until the tempe-

perature falls below normal; the control then automatically switches off the air stream. The blower is driven by an independent fractional h.p. motor.

Intertype Stick Attachment: Tilting Elevator Head

This composing stick attachment gratifies the wish for casting larger type faces. With this attachment, the occasional lines of display not contained in magazines can be cast as required.

The matrices and spacebands are hand set in the special composing stick, slid into the hinged first elevator head, and the line cast and delivered on to the machine galley.

If a printer requires a range of display types, any fount scheme, this stick attachment is a fine feature to help.

It goes on any Intertype and provides inexhaustible supplies of type lines with no sorts hunting.

Intertype Fotosetter

The value of the Intertype Fotosetter has been appreciated over since its conception. More than 200 machines are at present in use throughout the world; 17 newspapers in the U.S.A. have one or more Fotosetters; six machines are in use in England and two each in France and Belgium and other countries.

Some section of the exhibition daily newspaper were being set on the "C.4" High Speed Machine in the new type face "Columbia" which is made by Intertype, Berlin.

At the "Graphic '57" Exhibition Intertype showed many examples of photographic composition, especially advertisement pages from American newspapers.

Examples of work set by general printers by photo-composition were shown at the Exhibition so that visitors could see for themselves the quality and variety of work set in the Intertype Fotosetters.

Mr. M. Haines, who until recently was in charge of the Madras office of Ms. John Dickinson & Co. Ltd., agents for the Intertype, was at the Exhibition making a survey of the modern developments in printing technique.

John Dreyfus, Asst. Printer
University of Cambridge
introduced his paper—

TRENDS IN TYPE DESIGN

at the 9th International
Master Printers' Congress
at Lausanne

THE master printer is today offered unprecedented number of new types and revivals of historic designs. The following analysis of trends in type design may help him to understand better the causes and nature of recent developments, both technical, economic and aesthetic. He may thus find greater ease and interest in making the right selection of types for his own needs.

Until the end of the last century the design and production of types was largely controlled by a small body of highly skilled craftsmen who engraved punches by hand. Their work reflected the taste of their age. A contemporary of Leonardo da Vinci engraved the prototype of the design which master printers know today as "old face". Cut by Francesco Griffo for Aldus Manutius, it has endured as a credit to the printer-publisher who commissioned it and to the craftsman who engraved it.

To what extent the punchcutter created a design is not exactly known, but he certainly did not minutely copy drawings made by others. When the remains du roi of Louis XIV were engraved by Philippe Grandican, drawings were supplied by four experts in mecha-

tics and mathematics. These drawings were set out with great precision upon gridded paper divided into 2304 squares. A comparison of the drawings with the punches shows how much the success of the type is due to Grandican's skill in departing from the drawings. Even if he had wished to follow them meticulously, he could not have done so with complete success. For such a thing remained an impossibility until the principle of the pantograph was applied to type manufacture.

Application of the

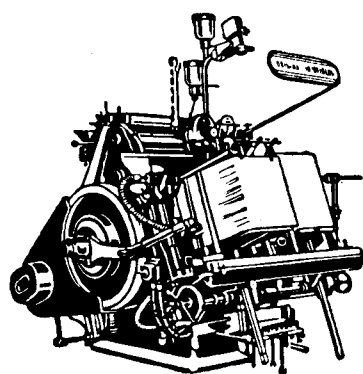
Pantograph to Type Design

It is significant that the pantograph principle was first applied to the manufacture of display letters. Centuries of restriction upon the liberty of the press had followed the invention of printing. The growth of display printing and advertising coincided with the end of these restrictions. Increasing demand for type stimulated technical advances in manufacture.

William Leavenworth of New York adapted the pantograph for the making of wood type in 1834. Fifty years later L. B. Benton of Milwaukee invented a pantographic engraving machine for matrix cutting which he sold to the



**you
are
welcome...**



Owners of ORIGINAL HEIDELBERGS or their staff members are cordially invited to attend courses at our Finishing Schools.* The courses are conducted by printing experts and consist of training on all three types of ORIGINAL HEIDELBERGS. The curriculum includes practical work ranging from locking of the forme to fastening of the blocks...and from make-ready to the finished print job.

If you want to make the most of your ORIGINAL HEIDELBERG press—train with us. It costs you *nothing*! And successful candidates are given certificates.

**You cannot do
TODAY'S printing job
with YESTERDAY'S
machines and still be in
business TOMORROW**

**Heidelberg Pressmen's
Finishing Schools exist at
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American Type Founders Company. His invention immediately preceded the introduction of Linotype and Monotype machines. Within a few years, the pantographic principle was adopted by all the composing machine manufacturers and by leading typefoundries throughout the world. The skilled punchcutter could be replaced by a precision machine.

It was not long before the design potentialities of the age technique were exploited. In 1897 the American Type Founders Company established a type designing department, directed by M. F. Benton, the designer's son. It was created "with the definite purpose of assuming leadership in typographic design". Type families were introduced so that "with one design made in different weights and widths, the compositor automatically achieves perfect harmony in his work while using all degrees of emphasis in headings and display". These different width and weights were worked out in the type designing department, but the original drawings often came from outside the trade. The most successful and widely imitated of the early type families, Cheltenham (1900), was produced from drawings made by an artist and architect, Bertram B. Goodhue. The success of the type proved that an artist's design could be satisfactorily translated into type with the help of a skilled type designing department.

Dangers of the Pantographic Method

Although the problem of quantity production of matrices was solved by the use of pantographic machines, the introduction of these machines was attended with certain dangers.

By relieving the designer of the task of engraving, the physical difficulties of making new types were so greatly reduced that the most prolific type designer in this country, F. W. Goudy, declared that it was "much easier to design a type than to sell it and, thereby put it to use." It had indeed become dangerously easy to design type. Drawings could be provided by artists who might be familiar with the anatomy of lettering but who were often ignorant of the intricate problems of type manufacture.

Moreover, they had no specialised knowledge of legibility or of the processes used for the types which they designed. The old punchcutters were obliged to work in the size of the type they were creating. They had been able to see the effect of their work as they progressed by taking smoke proofs of the punches as often as they chose. On the other hand, same scale drawing for text composition sizes could not be made with pen or brush. Working with large drawings, the artist tended to become hypnotized with the beauty of certain effects which could only be seen in his drawings. He might overlook certain defects which only came apparent to him when the drawings were reduced. In executing his designs, the pantographic machines were all too often "faultily faultless, icily regular." No longer was every size of type fashioned afresh; one set of patterns was made to do for two or more sizes.

It was now a simple matter to copy types produced by past generations or by competitors. To do the latter require no imagination and no conscience, and for the first years of their existence the manufacturers of type composing machines were content to do nothing more. But to choose the best types from the output of four centuries required an extensive knowledge, as well as trained taste. The difficulty did not end with the selection of a design, for to obtain the best result it was necessary to find a perfectly inked page, seen in unworn and perfectly cast type. Allowance then had to be made for the splurge of the ink when impressed into paper, by the time that the chosen letters had been enlarged and their "imperfections" smoothed out, they had often lost the vitality and beauty of the originals."

New Literature

The tremendous activity into which typefounders accelerated with their pantographic machines had an influential by-product. A flood of literature appeared on the history, theory and practice of typography, and on the design and manufacture of type. This created a new interest in these subjects among printers, artists and the reading public. Three publications merit special mention: Edward Johns-

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MADRAS-7

ton's work on Writing and Illuminating and
Lettering (1906), widely read both in English
and in a German translation: Legros and
Grant's detailed technical treatise on Typogra-
phical Printing Surfaces (1916): and The
Neuron (1923-30), in which experts from
many countries helped to formulate standards
and principles by which new work could be
judged. The typefounders contributed by publi-
shing the learned monographs of Gustav More
and Stanley Morison, and by issuing elaborate
specimens in which the designer of a new type
was given an opportunity to explain his inten-
tions and to show how his type should be used.
This new literature progressively influenced the
creation of new designs and affected the climate
of opinion in which they were received.

Type designed for text composition

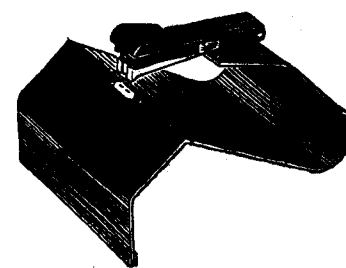
Printing is a conservative art, and has con-
served the forms of the roman alphabet un-
changed since 1465. Fifteenth-century Venetian
types can consequently be read today with as
much ease as types of contemporary design.
Jenson's roman of 1470 appealed so much to

William Morris as an artist that he used it as
the model for the Kelmscott Press Golden type
in 1891. His choice was followed not only by
other private presses, but by the leading foun-
ders of type for hand and machine composi-
tion, who could all offer a Venetian type by the
outbreak of the first world war. The vogue for
Venetian was followed by revivals of the types
of Bodoni (1909), Garamond (1919) Baskerville
(1923) and all the other leading punchcutters
of the past. These varied from attempts to
create facsimiles of vanished but admired
designs to adaptations in which the design was
deliberately altered. It was sometimes necessary
to alter an old design to meet the technical
limitations of composing machines. But it was
soon realised that modifications were in any
case desirable because of other changes in
printing technique in the qualities of paper
used (no longer printed damp) and in the
design and operation of improved presses and
new processes of reproduction.

Some designers have tried to synthesize or

(Continued on page 23)

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DEEP-ETCH PLATES

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In albumen plates the image which is to print is hardened on to the metal by light action. With deep-etch plates the procedure is reversed. The light sensitive coating is hardened to protect those areas which form the non-printing area of the plate. In other words the coating forms a stencil through whose openings caustic substances are applied to burn in the image. Then a lacquer is applied followed by a heavy ink, after which the stencil is removed. There are several methods by which deep-etch plates are made, but it would serve our purpose if we discuss here an example of bichromated deep-etch coating and a method using synthetic coating.

Gum deep-etch

1. The plate is first counter-etched with a 5% solution of acetic acid. It must be understood that this is done to obtain a clean surface of the metal. The plate must be well brushed with this cleansing solution. It is also advisable to go over the plate with a viscose sponge under a jet of water to remove all traces of mud and other particles carried in from the graining department. The plate is thoroughly washed before the next operation is carried out.

2. Plate is then pre-etched with the following solution: Ammonium Phosphate 3 oz.; Ammonium Nitrate-3 oz; add water to make 30 oz. About a minute is necessary and this step helps in removing the stencil coating finally.

3. The plate is coated with the gum solution sensitised with bichromate. Gum Arabic is tied in a muslin cloth and immersed in water to soak for some time. While the gum goes into solution, the impurities remain behind in the cloth. Water is added to make the density about 13° to 15° Be. Add 2 oz of ammonium bichromate solution to 5 oz of Gum and 1/6 oz. ammonia. As this coating is thicker, a faster whirler speed is called for than in the case of albumen coating. When dry, the plate is removed from the whirler and all spots touched up with a brush.

4. The exposure required is more than that required for albumen coating, and the correct exposure should be determined by experience. Over exposed plates will develop with difficulty and the stencil will be hard to remove. After exposing through the positive the image is covered up with black masking paper and the non-printing area is exposed again just as a precaution against the developer breaking into the stencil. All breaks in the coating is painted over with a stopping out lacquer which consists of a dye—methyl, violet dissolved in alcohol and shellac.

5. The plate is placed on a rubber topped table and the developer is spread on it with a plush-covered pad. The movement of the pad over the plate is continued till foam appears indicating that the image areas are cleaned off all the coating. The time required for foam to

appear is noted and fresh developer is poured on the plate and moved over it for the same time again. All developer is removed from plate and table top with the squeegee and the plate is then etched.

Formula of developer

Calcium chloride solution in water to 38° Be. When making this solution the mixture becomes very warm and some time must be allowed for it to cool before the correct reading is obtained. Also the developer reacts differently to varying room temperatures. This must be kept in mind when deciding the cause for under developed or overdeveloped plates. To 80 oz of the above stock solution add 1½ oz of lactic acid. The final Baume reading of the developer should be 36°.

6. The deep etch consists of the following:-

Calcium chloride - 40° Be - 20 oz.

Ferric chloride - 50° Be - ¾ oz.

Pure Hydrochloric acid - ¾ oz.

This is spread on the plate and constantly moved with pad for about two minutes. Remove fluid with squeegee and dry plate with cotton soaked in methylated spirit. Then with isopropyl alcohol. Finally warm plate over heater or under the arc lamps.

7. The moisture removing lacquer is then applied evenly and without forming any streaks use soft cloth or cellulose pad, but not cotton. Then dry plate.

The final base is then rubbed in and the plate is chalked over.

8. The final operation consists in allowing the plate to soak in water. This will make the stencil absorb water and swell. It can then be easily removed with brush. The plate is gummed and the image washed out.

It will be noticed that the chemicals used in this bichromated gum deep-etch are easily procured except perhaps alcohol which is difficult to get in some parts of our country.

Without it, it is risky business adopting this method. As against this, synthetic coating have now been evolved which can be developed either in water or by acid, and no alcohol is required in this process. The various stages in the Eggen sensinol platemaking process are as follows:

1. Coating solution, a colourless liquid, is mixed with half the quantity of the blue solution called sensinol. The advantage of not including a bichromate is prevention of dermatitis. Further sensinol colours the coating and the work can be clearly seen through the remaining stages. The plate is counter-etched as usual then sensitised with alum-nitric solution (1 oz. of each in 100 cc. of water), thoroughly washed and then coated. Expose for time necessary to harden coating without losing details.

2. Spray water over plate and clear the image with a plush pad. A dilute solution of aluminium sulphate is allowed to rest on plate to clear the fine details, harden and deepen the colour of the coating and prepare the image for the deep-etching. Wash plate and dry.

3. Etch for about 3 minutes with deep-etch solution, wash plate in water and dry plate again. All breakages in the coating is stopped out with the stopping-out lacquer. This is water soluble and any error in stopping-out be immediately rectified with a moistened sponge.

4. After drying the lacquer, the first base lacquer which is very volatile is quickly applied avoiding streaks and rubbed down thin. The ink base is finally applied, the plate is chalked and immersed in water. After a few minutes, the coating is brushed to remove the stopping-out lacquer, then a solution of 2% sulphuric acid is poured on plate. The coating swells and can be easily brushed off. Finally after rinsing the plate thoroughly a solution of phosphoric acid is well rubbed into the grain of the plate to remove all traces of the coating. Finally the plate is gummed and dried. Plate may now be washed out as usual.

The advantages in this method are many over the gum deep-etch method. The synthetic

coating is not affected by humidity as is the gum coating and this minimises occurrence of blind plates, i.e., image that does not take ink. The synthetic coating having a dark blue colour makes it easy to develop and locate blind spots which can be stopped out. Water development in this process obviates use of alcohol and there is wider tolerance in exposure timings as humidity and temperature do not affect the coating.

(Continued on Page 25)

(Continued from Page 19)

modify historic designs so as to produce a type suited to modern requirements. In naming his type Caledonia(1937), W.A. Dwiggins acknowledged his debt to Scotch Roman. Garamond provided the inspiration for Vendome (1952) by Francois Ganeau, who has given the letters greater boldness, a different serif treatment, and a slight forward incline. This trend is likely to continue, with an emphasis on bolder designs.

Some of the most successful types produced since the advent of the pantograph have been made to the special order of a printer or print-buyer. These types were created to meet a practical need and not to indulge an aesthetic preference. Their design was therefore worked out along rational lines and depended more upon investigation than inspiration. Investigation went beyond the kinds of paper to be used and the presses upon which the type was to be printed. Economic factors were considered and legibility tests carried out. Serifs, ascenders and descenders were minutely examined to establish the degree of which they were functional or decorative. With pantographic machines, such a rational and consistent design could be made into type without the slightest deviation and with remarkable speed. Furthermore, drawings for additional sizes and weights could be made with greater ease because of the consistency of the design. The most widely used type of this kind is Times New Roman (1931).

Courtesy: Printing News
(To be Continued)

3 questions...



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PRINTE

(Continued from page 23)

SUMMARY OF BOTH PROCESSES

Gum-coating
Counter etch
Etch with Ammonium phosphate and nitrate solution
Coat the plate
Dry edges with methylated spirit and print down
Develop in calcium chloride solution

Etch
Wash with alcohol and dry
Apply stopping-out lacquer
Apply first base and then the ink base.

Chalk plate and immerse in water
Brush and remove coating

Gum and wash-out

Sensinol coating
Counter etch
Sensitise with alum-nitric solution

Coat the plate
Print down as in Gum deep-etch

Develop in water and treat plate with aluminium sulphate solution

Etch
Wash in water and dry
Apply stopping-out lacquer
Apply first base lacquer then the ink base

Chalk plate and immerse in water
Brush with sulphuric acid solution and then with phosphoric acid solution
Gum and wash-out

Bruce Rogers is Mourned

THE world of the graphic arts mourns Bruce Rogers, internationally famous as a typographer and book designer, who died at his home in Fairfield, Connecticut, on 18th May '57 at the age of eighty-seven.

It was said of him by the American educator, Chauncy Tinker: "Bruce Rogers is the heir of all ages, from Gutenberg to Caxton to the mechanical contrivances of our time. He has set his name indelibly with the greatest of this craft—a craft which has been raised to the plane of a fine art. He is with Aldus and Elyevir. He is their comrades and representative; his work is the fulfilment of their promises, and a pledge of good things yet to come."

For more than sixty years Bruce Rogers built up and maintained a reputation as the most distinguished American designer of books of this age. The Times obituary said "Rogers had far-reaching influence both in this country and in the United States. He held that the responsibility for the appearance of any book, as to design, press-work, and binding, should belong to one man. This belief was novel in

the early years of the century; today no reputable book-house is without its designer. Much of the merit that may be claimed for the printed book in this country is traceable to influences exercised by Rogers and those indebted to his example.

Born in 1870, Rogers studied drawing and decoration at Purdue University. He held a number of jobs but his first regular typographical post came from G. H. Mifflin, of the Houghton, Mifflin Co.

He worked in England, first with Emery Walker and then as typographical adviser to the University Press, Cambridge. He later became typographical adviser to the Harvard University Press, and again worked with Emery Walker in London.

Bruce Rogers was responsible for, among other works, a 39-Volume Shakespeare; Essays of Montaigne; The Odyssey of Homer; The Compleat Angler; Letters from T.E. Shaw to Bruce Rogers; and The Book of Common Prayer.

Lectern Bible

Perhaps his greatest achievement was the

—(Continued on Page 29)

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Notes on the Manufacture of Woodpulp

By I. H. MITCHELL,

Manager, M/s. Charles Morgan & Co. Ltd., Madras

THE basic raw materials for the manufacture of paper are the cellulose fibres found in a variety of plants, the most important of which are cotton, flax, hemp, jute, wood esparto, vanilla, straw, bamboo, bagasse and maize stalks. Of these, the most widely used is wood pulp, which can be processed in several ways. As there is frequently a great deal of confusion regarding the various types of wood pulp used in the manufacture of paper, particularly since the introduction in India of classifications according to pulp contents for Customs and export licence purposes, an explanation of the basic processes might be of interest.

There are two classes of wood pulp, viz. mechanical pulp and chemical pulp, and these can again be sub-divided according to the process used for their manufacture. The mechanical pulp is made by grinding wood logs on a grindstone under a stream of water, so that the resulting pulp contains much fibre debris together with bunches of fibre fragments. The chemical pulp is produced by the use of solutions to dissolve away the encrusting substances which cement the fibres together in their natural state, so that they sustain little damage and remain mainly whole.

Mechanical Wood Pulp: As mentioned above this is produced by a mechanical grinding process. Logs are pressed against a revolving grindstone while a stream of water playing on the stone washes away the pulp as it is scratched off the wood. This pulp is made up of the broken fragments of fiber together with bundles of fibres which have been torn away

from the wood. The particles of disintegrated wood usually retain impurities, so that the fibres are unable to knit together firmly on the paper making machine and cannot form a strong sheet of paper. The pulp is then diluted in water and passed through screens to remove as many of the impurities as possible. If it is to be used in the same mill it is removed to the preparatory plant, otherwise it is pressed into sheets for transportation to other mills.

Chemical Wood Pulp: The chemical treatment involves penetration of the wood by a digesting solution. The bark is removed from the logs and they are then sliced into small chips. There are two main groups of processes, which produce the two best known types of woodpulp, i.e. Sulphite Pulp and Sulphate Pulp.

(a) **Bisulphite Process:** The digesting liquor contains Sulphur Dioxide with Bisulphite of Calcium or a mixture of the Bisulphites of Calcium and Magnesium. This mixture is poured into digesters along with the wood chips and the mixture is heated by steam at about 100 pounds per square inch pressure. The duration of the cooking varies considerably according to the class of pulp desired. A short period of digestion yields a strong pulp, which normally cannot be bleached chemically, whilst a longer period produces a softer pulp which is suitable for subsequent bleaching. At the end of the process the steam and gas are released, the digester emptied and the spent liquor washed out, and the pulp is treated along similar lines to those described



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The Bisulphite Process produces some of the purest forms of wood cellulose, such as the well known "Alpha Pulps" and these are suitable for producing such papers as wood-free printings and writings and they are also suitable for mixing with either esparto or rag pulps.

(b) *Alkaline Processes*: The original method of pulping wood depended on the action of Caustic Soda. As it becomes expensive to obtain the large amount of sodium compounds required, a system of soda recovery has been evolved to utilise the liquor previously used. Naturally there cannot be a hundred per cent recovery and the loss was made up by soda ash, causticised with lime. More recently Sodium Sulphate has been used instead of soda ash. It has been found that in the recovery process the Sodium Sulphate is converted into Sodium Sulphide, and during the digestion process the sulphide is progressively converted into Sodium Hydroxide, so that there is always enough hydroxide present in the digester. The special characteristics found in the strong Sulphate Pulp thus produced appears to be due to the Sulphide.

Characteristics of Mechanical & Chemical Pulps

It will be evident that mechanical pulp has limitations for paper making, as it cannot produce a strong or durable sheet of paper. However, the paper produced is usually opaque, and it is therefore highly suitable for such qualities as newsprint, although naturally a proportion of chemical wood pulp must be added to give sufficient strength.

It has already been mentioned that sulphite pulp contains strong fibres, so that the pulp is suitable for such classes of paper as woodfree printings and writings. In addition some sulphite pulps can be beaten in the preparatory plant of a paper mill to such an extent as to give a highly translucent sheet, so that Greaseproof, Glassine and natural Tracing Paper can all be produced from this pulp.

The sulphate process results in a more bulky pulp with opaque qualities and gives

a well closed sheet with a good surface. The unbleached pulp is used for making extra strong kraft paper and boards, and also the bleached sulphate can be used for printing papers, in view of its high bulk and good opacity, although it can never be equal in whiteness to the sulphite pulps which are easily bleached.

At this stage it might also be well to explain the term "Woodfree", which understandably is liable to frequent misinterpretation. The term "Woodfree" actually means wood pulp free from mechanical pulp, so that woodfree paper is a paper made entirely from chemical wood pulp with no mechanical content.

Another point which also causes confusion is the use of the term "Mechanical" with reference to art paper. There is a tendency to refer machine coated art as mechanical art paper. This, of course, is not correct, as machine coated art is a paper which receives a slight coating at the end of the paper making machine and may be manufactured from any combination of pulps, whereas mechanical coated infers a paper with mechanical wood content which is subsequently coated either on the machine or in a further process.

(Continued from Page 25)

great Lectern Bible produced for the University Press, Oxford.

He was a prolific writer, and in 1953 he published "Pi-from the Hell Box B. R." described as a "hodge-podge" of letters, papers, addresses written during a period of sixty years. The book carried title pages reproduced from many of his works.

Bruce Rogers was also a type designer. He revived the Brimmer type (later identified as that of John Bell), evolved the Montaigne fount from an original Jenson, and from a 14 pt. foundry Caslon designed the "Riverside" Caslon. He also designed the Cantaur type, later cut by the Monotype Corporation. In 1948 he received the Gold Medal of the American Academy of Arts and Letters.

Courtesy: *Printing News*

NEWS

PRINTECH Diary Page:

News of people, production and events in the Printing, Paper and Publishing World

Bombay Master Printers Association

THE Annual General Meeting of the members of the Bombay Master Printers Association was held on Tuesday 2nd July at the Commercial Printing Press, Private Ltd., Bombay. The meeting was attended by prominent members of the Printing Trade in Bombay. The main function on the occasion was to have a survey of the activities of the Association during the year and to hold election of office bearers of the Association and members of the Executive Committee.

The Report of the Executive Committee of the Association for 1956-57 and the Statement of Accounts for the year ended March 31, 1957 were placed before the meeting by the Hon. Secretary & Treasurer Mr. N. J. Ardeshir. The Report mainly dealt with the problems before the trade such as restrictions on imports due to insufficiency in foreign exchange, shortage in indigenous paper and board, excise duty on waxed paper. The Report also dealt with the application of Provident Fund Scheme and the Minimum Wages Act to the Printing Industry and problems of Sales-Tax and Employee's Health Insurance affecting the industry. The Report of the Executive Committee was passed and the Statement of Accounts approved by the meeting.

The Meeting thereafter proceeded with the election of office bearers and members of the Executive Committee of the Association. They are as under.

President: Mr. N. L. Contractor, Popular Fine Art Litho Works.

Vice-Presidents: 1. Mr. G. U. Mehta, Vakil & Sons Private Ltd.

2. Mr. A. F. Varawala, Mohamad, Fine Art Litho Works.

Hon. Secretary & Treasurer: Mr. N. J. Ardeshir, Bolton Fine Art Litho Works.

Members: Executive Committee

Mr. R. M. Cama, Bombay Chronicle Co.
 „ P. M. Doshi, States Peoples Ltd.
 „ V. K. Joshi, Colour Cartons Private Ltd.
 „ J. Middleton, G. Claridge & Co.
 „ C. N. Parameswar, Colour Craft.
 „ Nathalal Parekh, N. M. Parekh & Co.
 „ J. N. Parikh, Printwell.
 „ F. R. Poonawala, Commercial Art Engravers.
 „ K. C. Raman, Times of India.
 „ S. Ramu, Commercial Printing Press, Private Ltd.
 „ V. H. Thakar, Max-Designs & Process Works.
 The incoming President, Mr. N. L. Contractor addressed the members.

The meeting terminated after the President's address.

Nepa Mills

GOVT. TO COME IN AS SHAREHOLDERS

THE Rs. three-crore loan advanced to India's first newsprint factory, the Nepa Mills, by the Government of India was proposed to be converted into share capital and a decision to the effect was expected by the year end or even earlier, Mr. Raghuraj Singh, Managing Director of the mills, said here to-day.

The question whether the interest on the loan should also be converted into share capital was also under consideration, he added.

Further expansion of the project, Mr. Raghuraj Singh said, would be baulked if the loan was prolonged, as the interest would get accumulated. With the money as share capital, the management could declare dividends, whenever the mills made profit, he said.

Mr. Raghuraj Singh said that at present the mills, situated at Neapanagar in Madhya Pradesh, was producing 30 to 35 tons of newsprint per day, with the reduced power supply.

The normal production capacity in the Rs. six-crore project, he said, was 1,600 tons per month.

The production of newsprint was completely stopped in the month of June for annual maintenance work and partly because of breakdown in the power supply, he said. One of the boilers in the power-house, with a capacity of 1,200 K. W. was put out of commission and two other boilers were affected by metal fatigue.

The Madhya Pradesh Electricity Board, Mr. Raghuraj Singh said, had assured normal supply of power to the mills by the middle of next month. The board had also decided to expand the power-house.

When this was done, he hoped the mills would produce 70 to 80 tons of newsprint per day and help to maintain the low cost of production of newsprint.

"They are excellent!"

WHEN asked what were his impressions of Graphic '57 Mr. Semenov, Chairman of the Soviet Delegation, exclaimed "They are excellent!"

Mr. Semenov, who is director of Industrial Graphic Arts Production in U.S.S.R. was then asked if he was a specialist in this branch of the arts, coolly replied that he had only been working in the graphic arts industry for 50 years!

It is interesting to record that he and his fellow delegates showed pronounced interest in the Linotype and Machinery Co's two revolution press.

Courtesy: *Printing World*.

A 'Monophoto' Machine— New Developments

The Monotype Corporation Limited announces important new developments in a 'Monophoto' film-setting machine.

It is now possible, from one and the same paper ribbon perforated on a standard 'Monotype' Keyboard, to get the eight following 'Monophoto' products:

- (i) Right-reading film positive
- (ii) Wrong-reading (i.e. reading right to left) film positive
- (iii) Right-reading film negative

- (iv) Wrong-reading film negative
- (v) Right-reading paper positive
- (vi) Wrong-reading paper positive
- (vii) Right-reading paper negative
- (viii) Wrong-reading paper negative

In each case film and paper positives and negatives are produced emulsion side up.

Hard-Faced Mould For 'Monotype' Casters

AS THE climax of lengthy technical research and after many gruelling tests, a Hard-Faced Mould with exceptional qualities has been evolved at the works of The Monotype Corporation for use on 'Monotype' Casters. At a time when constant type-height is of such importance to modern printing techniques, this announcement is sure to be received with great enthusiasm in the Printing Trade.

As an example of the potentiality of this mould, a proto-type model was given an exhaustive test, at the end of which it was not possible to detect any wear on the matrix-seating. Further tests are being carried out,

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but it is already clear that this Hard-Faced Mould will maintain exact consistency of type-height throughout its working life.

By means of this new mould, the complications and expense of make-ready and pre-makeready will be reduced to a minimum, for corrections made with case type will not vary in their type-height, even if they have been cast at a different period in the life of the moulds.

Production of the Hard-Faced Mould will shortly be starting, and as from 1st August it will be supplied as a standard equipment on all new 'Monotype' installations. Everything possible will be done to speed up production in order to extend supplies for use on existing machines, but, in view of the considerable work involved in the change-over, it may take some time before this can be fully achieved, and for the time being the innovation must be restricted to new installations.

New Office-Bearers of the B.F.M.P. PRESIDENT

THE Rt. Hon. Lord McCorquodale of Newton was elected president for 1957-58 of the British Federation of Master Printers at their 57th annual meeting held at Blackpool.

Lord McCorquodale is the chairman of the family business of McCorquodale and Co., general printers and a director of J. and P. Coats Ltd. He was born in 1901. He has had a long and varied political career which began in 1929 and in the year 1956 he was made a Baron for political and public services.

VICE-PRESIDENT

John G. Medcalf, chairman of Hunt, Barnard and Co. Ltd., Aylesbury, was elected as the new vice-president of the B.F.M.P.

Mr. Medcalf has been a member of the Federation council since 1938 and was chairman of its costing committee from 1945-54 and a member of the labour committee from 1951-56.

L. & M. News Wins Award

L. & M. News house journal of Linotype and Machinery Ltd. gained an award of excellence in the 1957 National House Journal Competition, sponsored by the British Institute of Industrial Editors.

L. & M. News won this award in class 1c the class for printed magazines, intended primarily for external readership regularly using not more than one colour or any page except on the cover. The News is set on the Linotype and printed on L. & M. presses, and produced in L. & M.'s printing department. It is edited by Mr. G. C. Bensusan.

Wiggins Teape Paper Group provided Research Scholarship

WIGGINS Teape & Co. (1919) Ltd. have provided funds to institute a research scholarship tenable in the Paper Section of the Department of Textile Chemistry of the Manchester College of Science and Technology.

The scholarship will be known as the Wiggins Teape Group Scholarship. Its purpose is to enable suitable British graduates in technology or science to undertake a course of research and advanced study leading to the degree of M. Sc. Tech. or Ph. D. in the Faculty of Technology of the University of Manchester.

The scholarship will be of the value of £ 400 per annum regardless of the financial circumstances of the candidate. Limited additional funds will be available for the purchase of any special equipment required for research work undertaken by the candidate.

International Book Design Exhibition

COMBRIDGE University Press and Faber and Faber Ltd. top the list of publishers, who have had the most books selected for the British exhibit at the Sixth International Book Design Exhibition, which will be held at the National Book League's exhibition galleries at 7 Albemarle Street, London, W. 1. from September 5 to October 12. These two publishers have both had eleven of their books selected for the exhibition.

Russian Newsprint for France

NEWSPRINT and books are included in a quota list of goods which are to be exported to France by Soviet Russia under a new trade agreement which has been signed by the two countries.

The goods will be sent to France during the period 1957-59. In return, France will export to Russia machines and equipment including semi-automatic machines, electric furnaces and stamping and forging presses.

Newsprint Mill in Pakistan

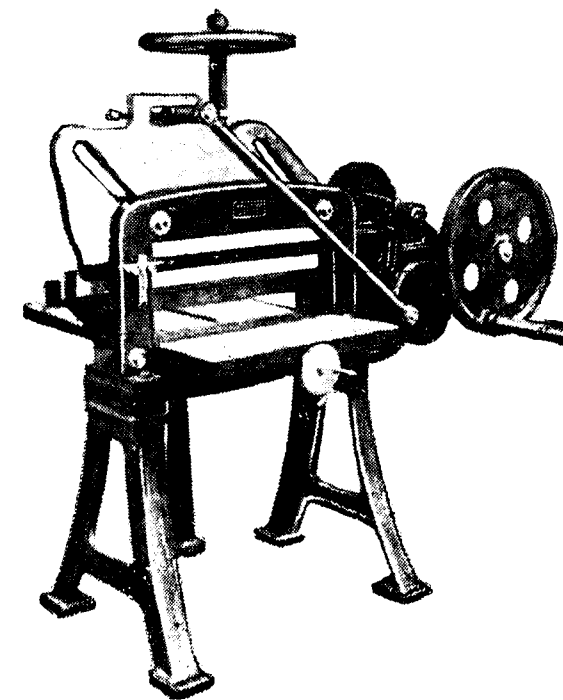
CONSTRUCTION work on the new Khulna (Pakistan) Newsprint plant has begun. Building of the newsprint mill at the plant is expected to begin in March next year.

The mill will have an annual capacity of 12,000 tons of newsprint and 12,000 tons of mechanical printing paper. Use will be made of Gewa wood which grows, it is stated, abundantly in the Sunderbans.

Plans for the building of the Khulna project are given by the Canadian firm, Sandwell and Co. Ltd., who are acting as general consultants and the construction, according to an economic report on Pakistan which has been recently issued by the Board of Trade.

Courtesy Printing News

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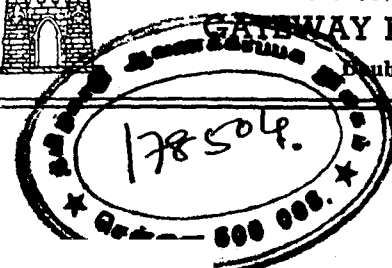
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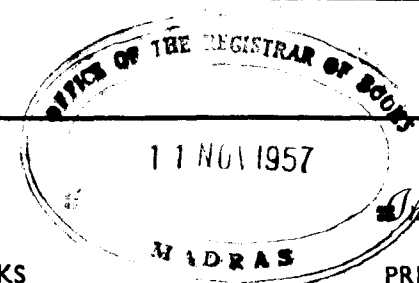
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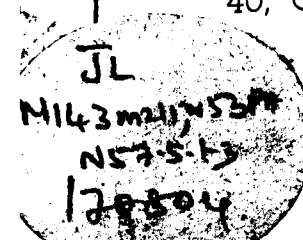
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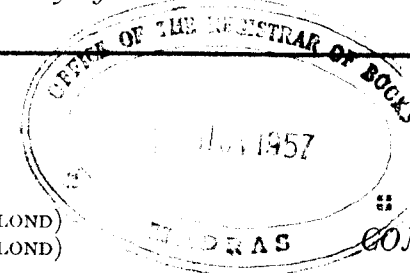
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காவேரி ரோமன்

தமிழிலுள்ள ஐம்பெருங் காப்பியங்களுள் ஒன்றான 'மணிமேகலை' பௌத்த நூல். 'மணிமேகலைச் சொல்லெ லாம் அறம்; பொருளெலாம் அறம். மணிமேகலையின் நாடெலாம் அறம்; காடெலாம் அறம். புத்தர் பெரு மாணத் தமிழிற் காட்டும் ஒரு மணிகிலையம் மணிமேகலை' என்று தமிழ்ப் பெரியார் திரு. வி. கலியாண சுந்தரர் அதைப் புகழ்ந்துள்ளார். 'வளையாபதி'யும், 'குண்டல கேசி'யும் முழுநூல்களாக அகப்படாமலே போய்விட் டன. ஆயினும் இவைகளைப்போன்ற பௌத்த நூல் கள் நூற்றுக்கணக்காகத் தமிழில் இருந்திருக்கவேண் டும் என்பதில் ஐயமில்லை. இந்நூல்களிலே, எங்கும் புகழ் பெற்ற தம்மபதத்திற்கு எத்தனையோ மொழிபெயர்ப்புக் கள் இருந்திருக்கலாம். உரை வடிவாக மட்டுமின்றிப் பாடல்களாகவும் அது தமிழில் வழங்கி வந்திருக்கவேண் டும். ஆனால் மருந்துக்கு ஓர் ஏட்டுப் பிரதிகூட இல்லா மல் அவைகளும் மறைப் பௌத்த நூல்களோடு மறைந் தொழிந்து விட்டன. தம்ம பதத்திற்குத் தமிழில் புது மொழிபெயர்ப்புக்கள் செய்யும்படி ஏற்பட்டுவிட்டது!

தம்ம பதத்தின் பெருமையைப்பற்றி ஜெர்மன் மொழி யில் புத்த சரித்திரத்தை எழுதிய ஹெர்மான் ஓல்டன்பர்க் என்ற பேராசிரியர் கூறியுள்ளதைப் பார்க்கினும் அதிக மாக எழுதவும் கூறமுடியாது.

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PRINTECH

Increase your Profits with Safety

HERE's a down to earth Safety programme for the modern printing plant that could save lawsuits and other costs and improve produc-tion.

Safety is one of those things of which we are often unaware until we have to dig down deep in the old pant's pocket and pay for the lack of it. It's the old story of not missing the water until the well runs dry or not thinking of fixing the hole in the roof until it rains. Too often, the need for a safety programme doesn't strike us until a visitor or an employee stumbles over a tray of type breaks his arm or his pride, and makes a bee line for the nearest law office.

This isn't good, of course; lawsuits cost plenty these days - win-or lose. An effective safety programme for both visitors and em-ployees is a cheaper more profitable and less bother for every one.

On first thought this might sound a bit complicated but it really isn't. Most safety programmes are based on a pure and simple garden variety of horse sense-something we all should have in abundance. In fact, a walk through almost any printing plant with this simple fact in mind will suggest the beginnings of a usable safety programme to almost any one who tried it.

The Starting Point

The area where visitors enter and leave is a good place to start. Cracks, holes, ridges, and bumps in the sidewalk or drive away may seem small in comparison to other hazards but they constitute a positive danger to people who come and go in the course of doing business.

Entry ways too are often veritable obstacle courses—full of loose mats, boxes, and supplies. Again these are small things, but their very smallness makes it quite easy for any one to correct them who will take the time to do so; floor mats can be fastened down; and deli-veries can be made to the proper department.

Once inside, visitors often find greasy floors, wires stretched across aisles, tools scattered about and other sings of carelessness to plague them. None of this should be allowed in an area where visitors are normally expected to be. A single pool of oil on the floor can cause a man to slip and injure himself for life and a lawsuit instigated by such a person can be disastrous to even the largest plant if the courts rule in his favour.

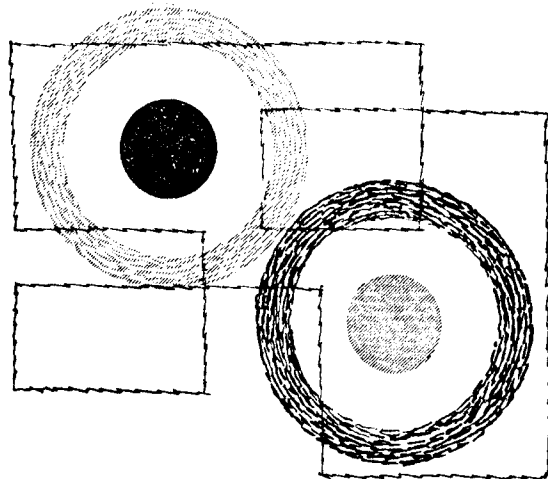
Employee Safety

Visitors are important, to be sure but safety applies to employees too. Laws in most states require any employer to provide a safe place to work—one without built in hazards and practices which are dangerous to the health and welfare of employees. Most employers also feel a moral obligation along the same lines—a personal responsibility towards the people who work for them.

The printing industry is no exception. In addition a safe plant is apt to be a more profit-able one; time lost from poor working condi-tions is costly and leads to an upset routine and the resulting confusion.

For all its advantages a safe operation isn't costly to instigate or maintain. To begin with the simplest safety device of all is the most obvious-organization. A plant that is clean

SEPTEMBER 1957



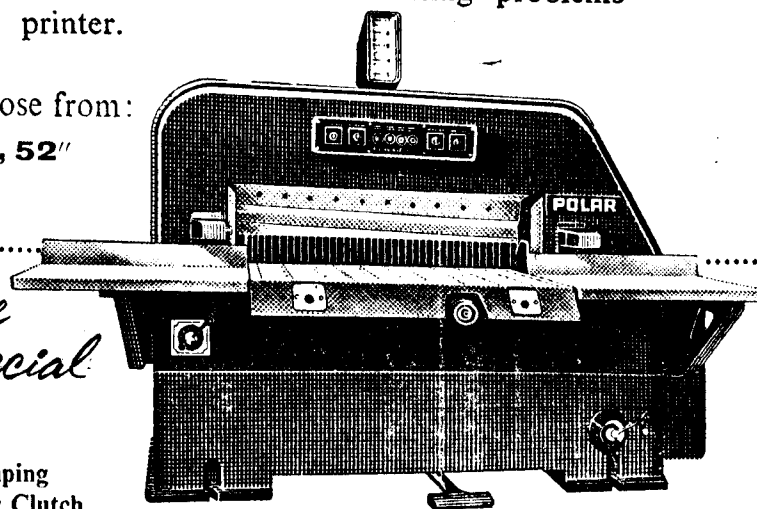
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Key

well planned with adequate working space orderly and uncluttered well ventilated and well lighted is on the road to a good safety-record. Employees who can see without strain have room in which to work and who aren't forced to climb over boxes, paper, carts and tools have a better than average chance of escaping injury.

But that's only the beginning. The following basic points will apply to the smallest one room print shop as well as the largest metropolitan printing plant.

Machine Guards

Most modern printing machines are built with safety in mind. Danger points are guarded where possible and many dangerous procedures have been eliminated by new designs. However, employees will often remove safety devices rather than work around them.

These people may save a little time but the few seconds gained each hour aren't worth the risk. Safety guards on trimmers, cutters, routers, perforators, and other mechanical equipment should be left in place and must be used—even if it has to be done under the penalty of disciplinary action.

Indicator lights to show when equipment is turned on can be classed as safety devices too and should be kept in good working order to avoid burns injury or shock.

Proper Tools

There is nothing like a dull screw driver that is too large or too small to throw a man off balance or gouge his hand. Dull saws and paper knives worn wrenches and other worn out or improvised equipment create definite hazards and contribute heavily to accidents. They cause slipshod work too and result in poor quality control and the inevitable costs that go with it. A safe operator will insist that his men have the proper tools for all jobs.

Shop equipment too must be kept up to date and in good condition. A worn out hoist for example is dangerous to both employees and visitors who stray into the shop area and so on.

Good Working Light

Employees in any business have the right to be able to see what they are being asked to do.

Poor lighting in work areas can result in eye-strain, fatigue substandard work, accidents, and absenteeism. Good general lighting will pay handsome dividends in both safety and economy. In most communities a call to the local electric light and power company will bring an engineer to help with this problem.

Ventilation

Fresh air is a basic human requirement and an adequate fan system is worth its weight in gold. Some older buildings aren't insulated as well as the newer ones and tend to get excessively hot during the summer months. This heat mixed with dust and dirt creates an uncomfortable and unhealthy atmosphere in which to work. Employees are more likely to become ill uncomfortable and dissatisfied—resulting in carelessness, absenteeism and low turnover—often just for the lack of a few well placed exhaust fans.

The nearest ventilating equipment dealer will be glad to recommend the proper fan types and point out how they may be used to the best advantage.

Fire Protection

Fire in any printing plant is a hazard that must be guarded against at all cost. But a supply of fire extinguishers does not constitute a complete fire safety programme although it is a good start.

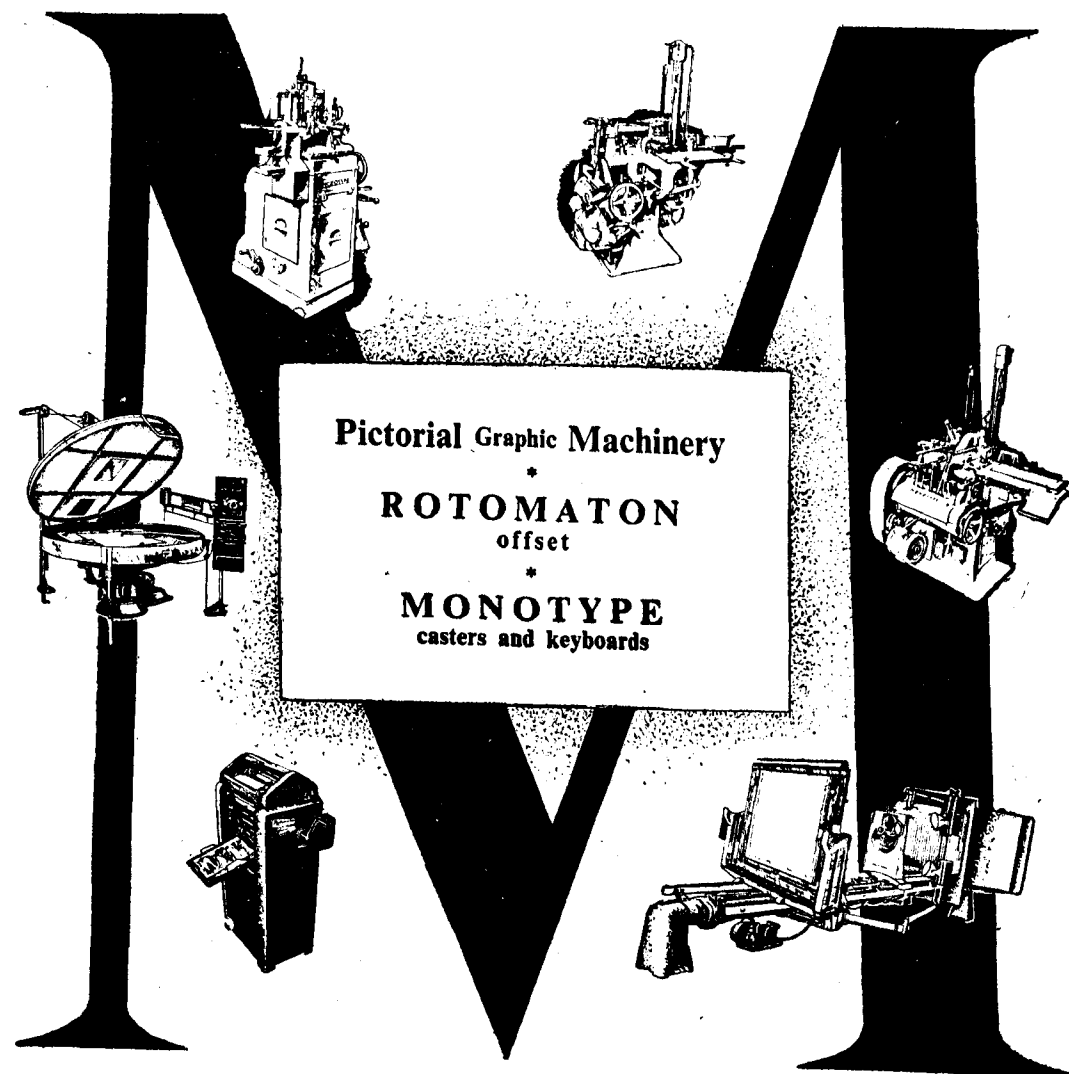
Most fires result from bad smoking habits, puddles of oil on the floor inflammable cleaning solvents antiquated heating plants outdated and unsafe wiring and general carelessness.

All of these things can be controlled. Smoking can be prohibited in dangerous areas containers can be provided for inflammable wastes and provisions made for their immediate disposal non-burning cleaning solvents can be supplied, a modern heating system installed outdated and unsafe wiring can be replaced and so on.

Adequate Wiring

Poor wiring causes more than inconvenience it can start disastrous fires as mentioned above and electric shock resulting from it can cause death. The cost of adequate wiring will pay for itself many times over in safety and

A Strong Team



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efficiency. Plenty of outlets with grounding plugs and heavy duty wiring circuits will make all electric equipment safer and easier to use.

All switches receptacles, and fixtures should be of the heavy duty type to withstand hard wear. Any drop cords should be of heavy duty rubber covered cord and both ends should be insulated from direct contact with metal.

Storage

Storage bins should be sturdy and easily accessible. If an employee must literally climb a makeshift rack or set of shelves for type or stock he's just asking the whole works to tip over on him. Carelessly stacked paper can fall easily and bruise seriously.

A well designed storage area is money in the bank. Ready made steel shelving is available at reasonable prices racks and tables to hold machine accessories are readily available and employees can be taught to keep things in proper order. Good storage practice is a definite part of a safe operation.

Big Loads Little Men

No one would think of lifting a press roller with a watch chain but we've seen employees carrying loads that were too heavy for them. The effects of this undue physical strain on a man and the danger of loss from droppage are obvious but still the practice goes on.

It can be eliminated of course by thoughtful planning and perhaps purchase of a cart or two. And for heavy lifting an overhead hoist or a well placed conveyor will repay its cost in a short while in time saved alone.

And Others

Loading docks should be maintained in a safe condition. Crates and bundles can topple over rounded edges; employees can be injured from splintered wood and broken bones can result from loose and rotted flooring—check loading areas regularly.

Flying chips from trimmers can put out an eye in a flash. Men doing this kind of work should be required to wear safety goggles.

Conveyors can be time savers but if allowed to deteriorate, they can become dangerous. A roll of paper flying from a conveyor could cripple a man for life if it should land on his

foot. Inspect all conveyors at least once a month and repair any defects immediately.

All in all where danger presents itself it should be guarded. Wherever feasible all safety devices and procedures should be provided and their use enforced. After all a safety programme is only as good as the authority who sees that it is carried out.

Only by continuous and watchful effort can printing plant operate substitute safety records for accident records. It can be done easily and economically by applying a few basic rules which are after all only common sense.

Benefits of a safe shop

BETTER Morale—Employees will appreciate clean pleasant and safe surroundings in which to work.

BETTER WORK—Better morale means better work. A well organized safe shop will attract top notch men.

LESS TIME LOST—Accidents and illness can be costly. A man who is off work due to unsafe or hazardous working conditions is not earning anything for himself or his employer.

LESS CHANCE OF LOSS—A fire or a shutdown resulting from careless operation can bankrupt any business.

Courtesy: Graphic Arts Monthly

Multicolour Photogravure Press

Novelties in the Soviet print industry include, according to the Soviet printing industry journal *POLIGRAFICHESKOYE PROIZVODSTVO*, a number of new machines. One of them is a multicolour photogravure rotary press, adjustable for a number of formats. The press is able to produce 15,000 prints per hour.

Russia Prints Bibles

THE Russian state-controlled Printing Ministry has authorized the production of Bibles in the Russian language which were ordered by the Patriarch of the Russian Orthodox Church. These volumes are designated for export and are to be printed on the presses originally dedicated to the "God-less movement". The first edition will amount to 25,000 Bibles. The binding is in two colours, black and grey, with the cross of the Orthodox Church in gold embossing. The 1270 pages are in good typographic taste and printed on high-quality paper.

Graphic Arts Monthly

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TWO STOP CYLINDER PRESSES FROM NEBIOLO FACTORY

A few years ago, two new types of automatic cylinder presses were put on the market by the Nebiolo factory, makers of printing machinery. The presses embody several unusual design features and now that many of these Italian made machines have been installed in printing shops all over the world, it seems right that a more detailed description of the RTE and its companion press, the RTA should be given in these pages.

Both machines are particularly suitable for half-tone printing and combined halftone, line and jobbing, and because of their precise construction these machines are used for multi-colour printing in many continental plants.

The presses are stop cylinder machines with patented reduced cylinder stopping time and consequently accelerated printing speed. A special feature is the practical arrangement of controls, which are on the right side of the machine within easy reach of the operator. Makeready and forme preparation have also been carefully considered in the design. The printing forme is inserted from the front, while feeder and delivery are placed at the back of the machine, in positions which make it easy for the operator to control feeding delivery and impression.

Rigid construction (all castings are made by the Mechanite system which reduces wear and tear and metal fatigue). Excellent accessibility for the forme bed and the cylinder greatly facilitate makeready. The cylinder is accessible by lifting the feed board and the type bed extends beyond the inking rollers so that

positioning and other work on the forme bed are a simple matter.

The reduced stop motion cylinder device embodies a new kinematic system, which has, to a certain extent made the movement of the printing cylinder independent of the bed run permitting a cylinder diameter 15 per cent larger than on similar machines of the same size. Printing pressure is thus more evenly applied, the cross section is stronger, more space has become available for controls fitted on to the cylinder, and makeready operations are simplified. Hair line register at high operating speeds is due to this reduced stop cylinder principle. On conventional single or two revolution automatic presses the sheet is transferred to the printing cylinder by a series of swing grippers acting as intermediaries between cylinder grippers and feed board. These swing grippers catch and release the sheet while they are in motion. They are sometimes difficult to adjust accurately and react some what erratically when printing is at high speeds or on different kinds of paper. On the RTA and RTE the sheet is brought to the front lays comparatively slowly while the cylinder is stopped.

Feeder

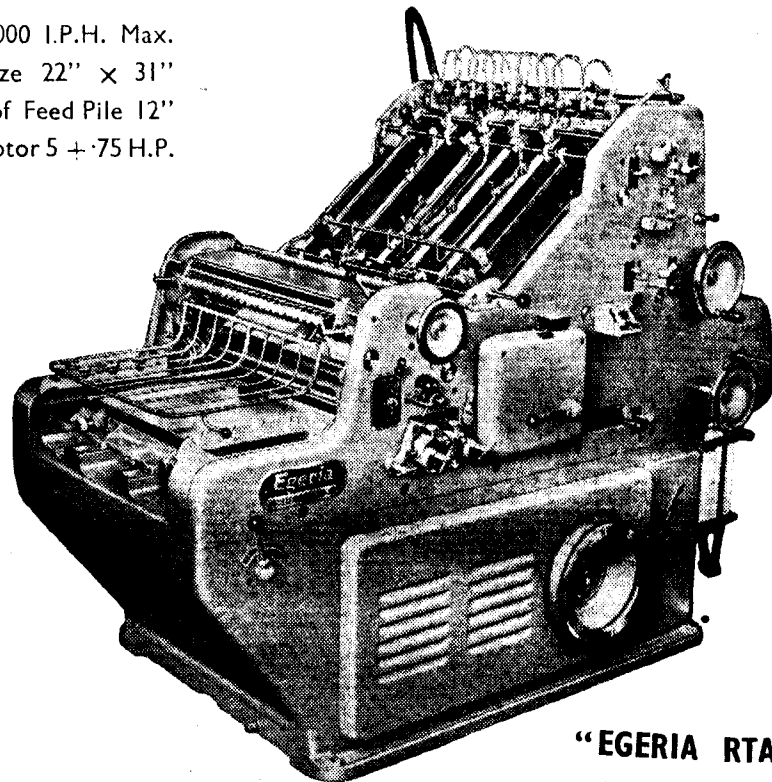
This is of the suction type embodying a series of telescopic sprung suction heads, and the 12" pile with an electromagnetically controlled, fully automatic table combined with the horizontal air blast for sheet separation and the tapes with variable speed, permit handling of any type of stock from Bible paper

INTRODUCING

The New High Speed "ATENA RTE"

A positive independent cylinder drive for first class register

Speed 4000 I.P.H. Max.
Paper Size 22" x 31"
Height of Feed Pile 12"
Drive Motor 5 + .75 H.P.



"EGERIA RTA"
Size 16" x 22"

For full details and a free demonstration contact:

The Standard Printing Machinery Co.

12/81, SEMBUDOSS STREET, MADRAS-1

Phone: 55096

Grams: "PRINTMACHO"

Also

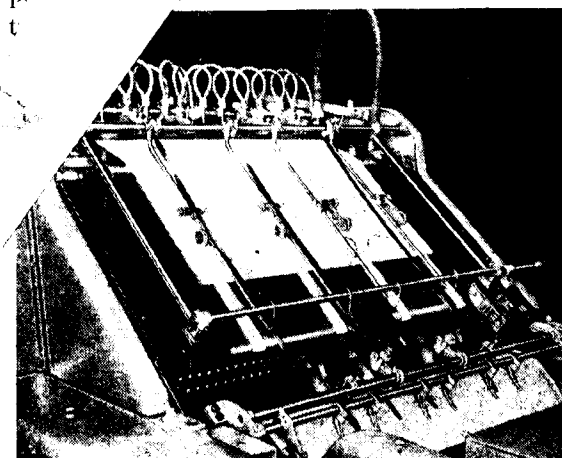
THE STANDARD TYPE FOUNDRY

Kothari Mansion
Opp. G. P. O. BOMBAY

Chawri Bazaar
DELHI-6

14/2, Old China Bazaar St.
CALCUTTA

paper to board. Automatic side
pr
t

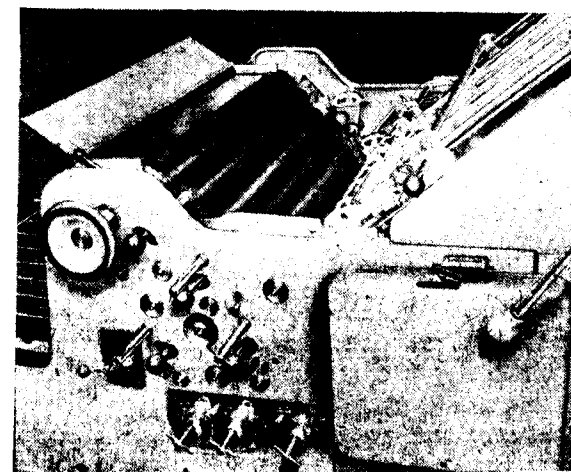


The sheet is steadied before it is fed to the cylinder
The pull-type side lays avoid bending of sheet.

lays that pull outwards avoid bending or
damaging the edges of light paper etc.

Ink Unit

Ink rollers and several distributors including
metal distributors with oscillating movement,
make up the ink unit. On both the RTE
and RTA a hand lever controls the ink supply
which can be linked to the cylinder move-
ment. The ink unit is hinged to facilitate clean-



Ink unit of Atena RTE

ing and no resetting of controls is necessary
when the unit is hinged back into the machine.
The knife and the throw in and throw-

off of the ductor roller are finely adjustable
and these controls ensure thorough consistent
inking up even of difficult pages. The ink
flow is automatically stopped when the cylinder
is lifted. The RTE ink unit includes a simple
and practically designed wash up device, con-
sisting of a scraper blade and a solvent basin.
It can be kept in contact with the roller during
washing up or be detached. The solvent basin
is taken out of the press for emptying. The
RTE's inking unit employs extra reciprocators
and rubber rollers and at the end of the
printing stroke the forme is carried clear off the
inking rollers so that even the first roller comes
into full contact with the distributor and gets
a full supply of ink for distribution to the forme.

Delivery

After printing, the sheet runs across the large
diameter drum and the delivery tapes. The
actual sheet transport is best explained in the
accompanying diagram. Because of the large
diameter of the drum, the sheet stops away

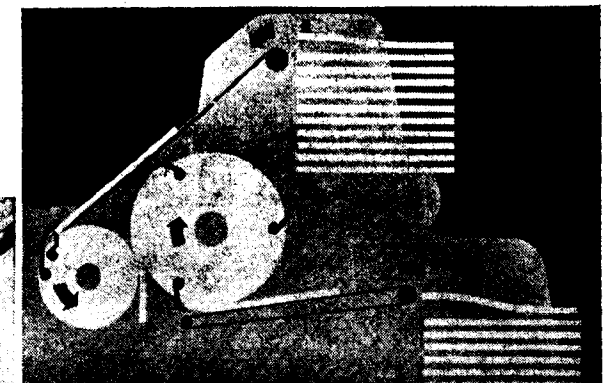
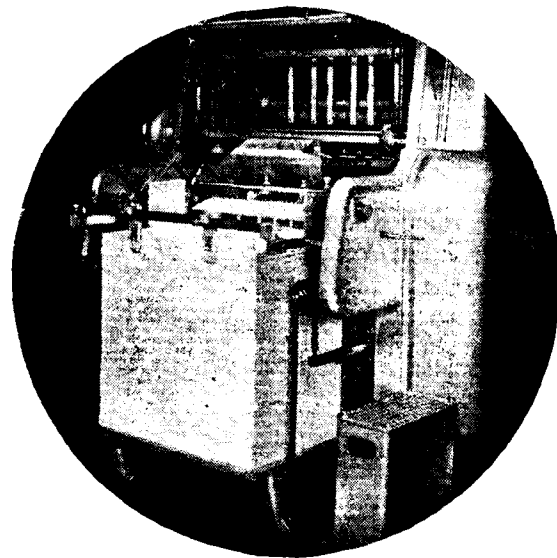


Diagram showing the paper travel on the RTA press
from feeder to delivery (16" x 22")

from the forme regardless of whether minimum
or maximum size is being printed and is then
turned up by the drum and placed on the tapes
which transport it to the delivery pile where it
is cushioned by an air blast. The only adjust-
ment required for the delivery end are the
setting of the air blast and the jogging mecha-
nism. The deep pile delivery can be lowered
to the floor and the delivery board is fitted with
castors so that the pile can be wheeled away.

Lubrication

As the majority of gears and transmission parts are centrally arranged at one side of the



In the Atena RTE presses the delivery boards are provided with three-side automatic jogging, with an electromagnetically controlled lowering device giving the possibility to lower the boards down to the floor and to pile up the sheets up to a height of 23 1/4". These boards are supplied with pivoting castors having rubber covered rims, and when freed from their supporting chains they become an ideal means of transportation for piling the paper without weariness in the most suitable place of the printing-room.

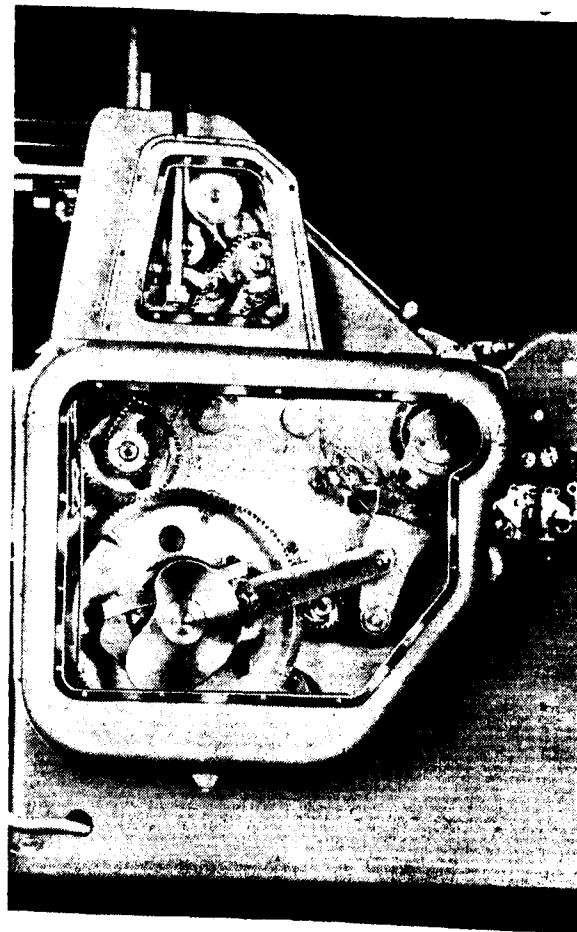
machine lubrication is simplified. They are enclosed in a single sealed casing with continuous oil circulation. An inspection hole in the gear casing permits visual control of the oil level. Lubrication is partly by splash and partly by means of a pump which forces the oil through nozzles to the various lubrication points.

Compared with some other flat bed cylinder presses the RTE saves floor space, although providing the same or an even larger printing area. Bed sliding in the RTE is by the use of steel rollers running in four steel faced tracks on the way frame. The steel facing obviously reduces wear and tear.

Both the RTA and RTE can be used for die-cutting creasing and embossing work. Feeding of cardboard presents no difficulty as

the machine has been designed for adaptatic to this type of work. The feeder can take fairly thick cardboard after simple controls have been set. The large cylinder and shoo fly eliminate any difficulties which might be caused by excessive bending of the board.

Die cutting requires the placing of a stainless steel blanket .38" thick as a cylinder packing. Locking and blanket tensioning are done in the same way as with usual cylinder packings. Jamming of die cut sheets because of



In designing the Atena RTE and Egeria RTA machines it was achieved to centralise the largest part of gears & movers at one side of the press. These parts have been enclosed in an oil-tight casing with continuous circulation of lubricant in order to secure them with continual and an unvaried oiling. A pump draws up the lubricant from the oil sump and conveys it through a pressure circuit to the various lubricating nozzles which are so arranged that a film of oil falls on the moving parts and then centrifugally sprayed out in all directions.

Excessive bending or too rapid movement of the tapes does not occur again because of the large cylinder diameter and also as a result of the slow speed of the tapes and the cushioning effect of the air blast.

Needless to say as with many Italian products particular attention has also been paid to a pleasant exterior and finish. The machines are modern looking the frame painted with light olive green and most other surfaces are quite plain so that cleaning is easy.

These two machines have become so successful that Nebiolo's are now concentrating a large part of their production capacity on their manufacture. RTA and RTE presses have been sold to printers in all parts of the world and are in use all over Europe in Germany, Switzerland, Sweden France and of course Italy where they are reported to have swept the market.

Technical Data

	RTE	RTA
Maximum Sheet size	22" x 30"	16" x 22"

	RTE	RTA
Minimum sheet size	9" x 15"	4 1/2" x 5 7/8"
Maximum forme size in-chase	22 1/16" x 30"	16 1/2" x 21 5/8"
Maximum printing area	21" x 30"	15 1/8" x 21 5/8"
Maximum speed	4000 i. p.h.	4500 i. p.h.
Height of feed pile	11"	10 1/4"
Height of delivery pile	21"	23 1/4"
Overall dimensions— Length x width x height)	114" x 72" x 65"	85" x 52" x 60"
Power requirements	5 h.p.	4 h. p.

Agents and distributors in India for these machines are M/s Standard Printing Machinery Company, 12/81, Sembudoss Street, Madras-1 and M/s. Standard Type Foundry Kothari Mansion, Bombay; Chawri Bazaar, Delhi-6 and 14/2, Old China Bazaar Street, Calcutta.

3 questions... 1

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D-32a

TRENDS IN TYPE DESIGN

By JOHN DREYFUS

Asst. Printer, University of Cambridge

AN appeal for the wider availability of the best contemporary text types was made by John Dreyfus, Asst. Printer, University of Cambridge, when he introduced his paper "Trends in Type Design" at the Ninth International Master Printers Congress held at Lausanne recently.

In the First part we published in our last issue, how the skilled punch cutter was replaced by a precision machine - pantograph. When discussing about the pros and cons of the pantograph he referred the machine as "faulily faultless and icily regular."

In this final part of the paper Mr. J. Dreyfus referring the suitability of type design to various contemporary processes says that Times New Roman meets a great many of the requirements of the printer. He also discusses on the Classification Vox of Monsieur Maximilien Vox.

Master printers will note that Times New Roman meets a great many of the requirements expressed by printers at an inquiry "What Types Do We Need?" organised by the American Institute of Graphic Arts in 1947. It is suited to a variety of contemporary processes and papers; is fairly bold in colour; can be had in a semi-bold as well as a bold version; an extensive size range is offered complete with accents and special signs; and the design is available on more than one kind of composing machine and in foundry type.

From the requirements expressed at the AIGA inquiry, there is clearly a shortage of types which are found satisfactory with heavy

line or tone illustrations, and which can be printed either photolitho or gravure.

The creative urge of artists and the enthusiasm of typefounders continued to bring new type designs into existence. The trend is towards types of greater sharpness and regularity. Their beauty is more self-conscious than in the best handcut designs. This almost inescapable with designs first conceived and drawn on a large scale and subsequently passed through several stages of measuring and re-drawing before being cast as type.

Few artists are capable of cutting their own punches by hand, but Eric Gill, Jan van Krimpen and Giovanni Mardersteig have had certain sizes of their designs cut for them experimentally by hand punch cutters. Subsequent production of composing machine materials by the pantographic method was thereby made simpler and more satisfactory. It is doubtful whether this trend can continue with the declining number of active punch-cutters.

Experiments with sloped roman in place of italic have been made by Jan van Krimpen with Romulus (1936) and by W. A. Dwiggins with Electra (1937). The underlying theory was expounded in The Fleuron, no. 5. Although its application has not been generally acceptable in its entirety, the trend goes on towards making an italic conform more closely in design to roman. At the same time an earlier trend to turn to chancery italics for a model still continues.

Renewal of interest in Griffo's roman (the pattern for Monotype Membo) has started a trend to reduce capitals in height, a practise which makes for smoother reading, especially of German texts.

Display Printing

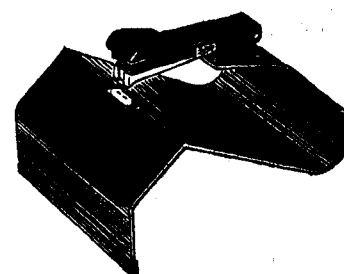
Display printing was formerly controlled by the jobbing printer. He himself chose his display types, of which a great profusion were produced in the nineteenth century. He ranged them according to his own ideas, which were usually accepted by his customer. But when type families were introduced, the typefounder persuaded him that a lot of time had been wasted "in experimenting with a large array of unrelated type faces, to find those that would combine with the least disharmony, with crude results at best." With one type family he was told that he "could set up a business card or a de luxe book or a poster." From this attempt at economy and rigid harmony we have now gone to the other extreme. The change has been hastened by the

tendency for the customer, through his art director or advertising agent, to control the design of jobbing printing. In this way a new force has appeared which has greatly influenced the creation and popular use of new display types.

An American master printer recently declared that "for advertising display the effect should be interesting, startling, bizarre." The trend is to produce types which have these qualities in larger measure than beauty or harmony. Revivals or adaptations of nineteenth-century display types are increasingly popular, notably Clarendons and Egyptians. At the same time there is a desire to create new display types which are "of our time"—a phase which is often repeated.

The master printer and his customers are assailed with a barrage of typefounders specimens. These show display types of extreme individuality, printed with an abundance of colour, and of process engraving. In style the types vary so much that Monsieur Maximilien

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Vox in his new system of type classification has allocated five of his nine classes to types normally used for display. Two of these classes are of dominant importance—the lineales and the scriptes. Lineales sans serif capitals appeared in 1816 a Caslon Foundry specimen book. The style gained wide popularity in the nineteenth century and became known under various names—grotesques, antique, gothic. Their popularity with twentieth-century designers dates from 1916, when Edward Johnston drew a sans serif type for London Underground. Johnston already enjoyed a high reputation in Europe as an authority on lettering. His example was followed by other skilful artists, notably J. Erbar (1922) Rudolph Koch (Cable, 1927), Paul Rennar (Futura, 1927) and Eric Gill (1928). They proved that with a thorough understanding of the anatomy of letters, an alphabet of beauty could be made out of grotesque. The style was popularised by Bauhaus enthusiasts, who admired architecture of similar extreme functionalism and plainness. Recently there has been a trend in favour of the earlier nineteenth-century grotesques, notably those of greater boldness and compactness—and ugliness.

Designers have been active with other kinds of lineales in which strokes of varying thickness are used, unlike the monoline sans serifs of the 'twenties and 'thirties. In this very lineales of greater individuality and liveliness have been produced.

If bizarre effects are tried upon the formalised shapes of roman lower case letters, the results are often illegible. So numerous script types have been produced, all replete with individuality, yet easily read by a public accustomed to bad handwriting. Scripts are particularly useful in displayed settings which feature drawings or photographs. (It should be remembered that Toulouse-Lautrec's lettering on his posters was remarkably effective, although the letters had no merit considered apart from drawing). Scriptes can also be effectively used to contrast with the formality of a panel of roman type. But the master printer will do well to see that scriptes are used

like mustard—served fresh as a fitting accompaniment to certain meats.

The practical master printer will appreciate recent efforts to provide him with fully joining formal scriptes which are simpler to compose and less fragile to handle. He will also admire the informal ingenuity of Mistral (1953). But on balance it appears that the trend is towards non-joining scriptes of still greater freedom and individuality.

Until recently only photographic versions of popular existing types have been available. But some scriptes have been specially designed for photocomposition, in which advantage has been taken of the fact that spacing between letters can be varied, and even reduced to the point where the strokes overlap. Some designs have been made by A. Frutiger in Paris for the Photon machine. These also exploit the greater freedom which the system gives to the designer, and special attention is being devoted to designs suitable for reproduction by photographic processes.

"It is a simple matter to make lists of good types—though not as simple as it seems. It is still simpler—and much less trouble—lazily to accept other people's conclusions. But the ideal composing room will never be equipped in this way. It will be made what it ought to be only by those adventurers who add to those types accepted as 'standard' other interesting founts selected from sources to which study will have furnished a clue". (D.B. Updike, *Printing Types*, 1922).

Courtesy Printing News

NOTICE TO MEMBERS

Members are reminded that their subscription for the current year is overdue. Immediate remittance is solicited.

Honorary Treasurer.

INK DOT SCUMMING

HERE are a number of causes of ink scum in the litho process and some of these are attributed to mild or severe forms of emulsification. There is another form of scumming which is as much more prominent in the early use of aluminium than it is today. The Litho Technical Foundation have been asked to ascertain the causes of what are described as bands of tiny ink specks which form across aluminium plates. Another point is that the printers making the enquiries to L. T. F. state that the bands sometimes show up only on half-tones. We are all familiar with the readiness of aluminium to oxidise and as the following note shows it is to this factor that L. T. F. ascribe the trouble. The points that are made regarding the effect of the slow drying of an aluminium plate are worth noting.

'Several of our members have been troubled with bands of tiny ink specks forming across aluminium plates. The bands sometimes show up only in halftones.

These peppery ink receptive specks are ink dot scum. Its exact cause and cure continues to be a mystery despite research for many years. However, we have learned enough about it to possibly help you avoid some trouble.

'Aluminium is a water receptive metal. It doesn't require a heavy layer of gum on it to keep it desensitised. In fact, tests have shown that ink dot scum is speeded up when heavy gum films are put on the plates.

'One of our present theories is that the gum film picks up or holds acid from the fountain solution in contact with the plate. When the press is stopped and the gum film dries slowly,

the acid has time to concentrate and penetrate the weaker or thinner areas of the aluminium oxide film. This causes tiny corrosion pits which pick up ink and print.

'When the press is stopped, the longer it takes for an aluminium plate to dry, the better the chance for ink dot scum.

'The areas that dry last on a wet plate standing on the press are those that are close to other rollers like the inkers, the dampeners or the blanket. When this occurs, and when a fountain solution with a pH of 3.8 to 4.0 is being used, bands of ink dot scum form across the plate in only two or three minutes. The bands match the roller spacing exactly. We think the trouble occurs so often in halftones because the spaces between the dots trap the fountain solution and are slower to dry.

'We have demonstrated this effect by stopping the press and holding a damp blotter about a quarter of an inch above the plate for two or three minutes. Almost invariably, ink dot scum will occur in a space that matches the size of the blotter.

'The way to avoid this trouble on the press is easy. When sheets stop feeding, the former rollers will automatically trip off the plate. Lift the dampeners as usual but before you stop the press, let the plate revolve for a few minutes so that it becomes thoroughly dry. Once the plate has been dried quickly you can stop the press and the trouble will not be so apt to occur.'

Courtesy: Modern Lithographer and Offset Printer

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New Type Faces from Monotype

THE Monotype Corporation announces some new type faces. New titling capitals designed for the Corporation by John Peters of the University Press, Cambridge; are known as Castellar 600. Castellar is a distinctive and decorative open face titling with the advantage of being combinable (i.e. as a hanging initial) with almost any classic book face. There are also Castellar border units which can be combined in a wide variety of patterns and frames.

a pen which he had cut from the stalk of a bomboo plant growing in his own garden at Lugano.

This strong type face will appeal to the designer of advertisements, to book jackets, catalogue covers and similar printed material. The 36 and 48 Didot sizes are now available as display matrices and all other display sizes from 14 and 60 Didot are in active preparation.

**'MONOTYPE'
CASTELLAR
600—36 & 60**

Bold Script 584
'Monotype'
MERCURIUS

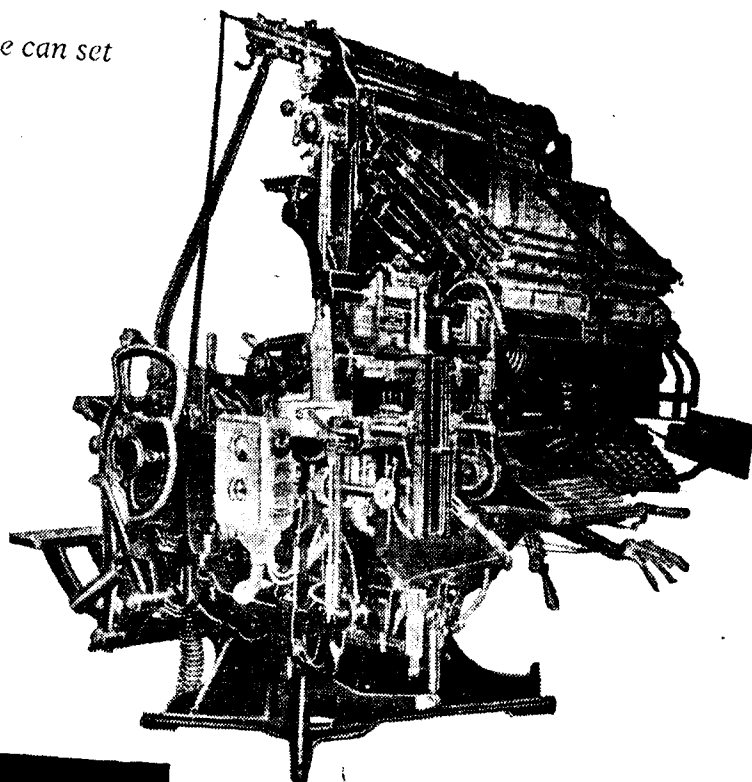
A New display face called Mercarius has been designed by Imre Reiver this bold script is a typical product of this gifted letterer and calligrapher. He worked out the design with

"Monotype" Spectrum series 556 has hitherto been available only in the Composition sizes. It now makes its appearance as an entire range of sizes up to 60 Didot. A special

With equal ease this machine can set

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11-13 HORNIMAN CIRCLE, BOMBAY 1 · 10-29 MOUNT ROAD, MADRAS 2

PRINTECH

book-let specimen now in preparation gives ample evidence that Janvan krimpen's masterly roman and italic has not only the "transparency" and quiet matter-of-factness which are the first essentials of a good book face, but also the character and charm in the design of individual letters which the eye can appreciate in the display sizes.

Another design to join the wide range of "Monotype" book faces is the Dante roman and italic, which was designed by one of the greatest printer typographers of this century, Hans Mardersteig, for his own use in the fine

editions produced by him at his Bodoni Press. Charles Malin, whose skill as a hand punch-cutter played its part in the evolution of Eric Gill's Perpetua, completed the punches for Dante shortly before his death.

Monotype Dante will be found compatible with a variety of different paper surfaces and reproduction processes. It is relatively narrow without in any way looking condensed or cramped, and the italic achieves an agreeable harmony with the roman. Other Composition sizes of "Monotype" Dante 592 from 8 D to 14 Dare now being cut.

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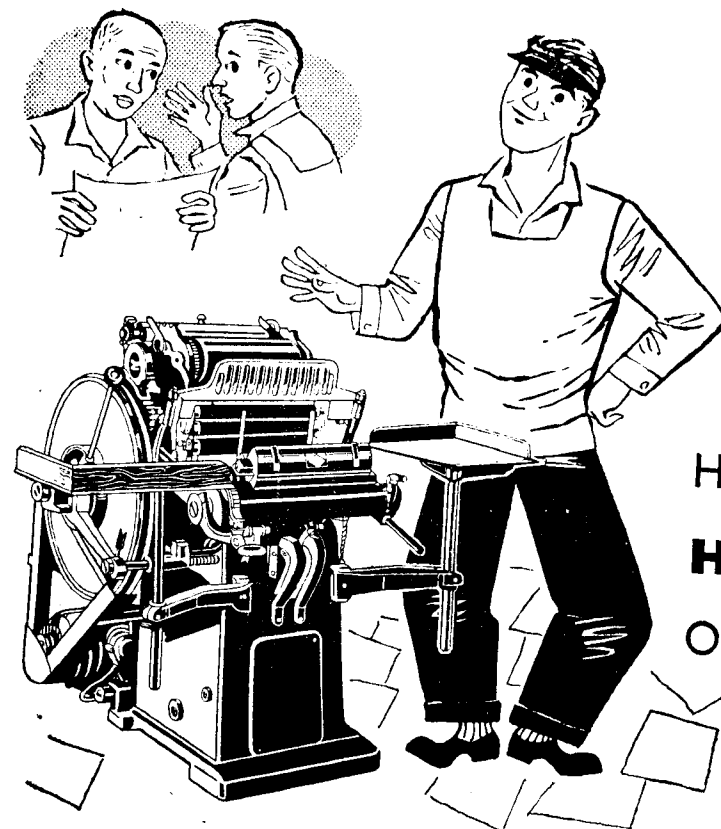
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SEPTEMBER 1957

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NEWS

PRINTECH Diary Page:

News of people, production and events in the Printing, Paper and Publishing World

Great Britain

Coates' Nu-Chrom Bi-Metal Plate

SAID to fully realise all the advantages of the bi-metal principle, and to be as simple to print down as an ordinary deep-etched zinc or aluminium plate, the Coates' Nu-Chrom bi-metal plate is further claimed to be the lowest priced bi-metal plate on the market.

Additional advantages asserted for the Nu-chrom are:

(1) Quick and even etching makes plate-processing simple and certain; it can be printed down in any plate-making department.

(2) The special matt chromium surface is grainless, gives the most accurate reproduction possible, has a texture which provides a perfect key for the sensitive coating and prevents skidding of dampers and forme rollers.

(3) The stability of the plate gives it long trouble-free life, maximum reliability and resistance to damage, greater latitude in all printing conditions.

(4) For reprint orders the tough steel base enables Nu-Chrom to be put on and taken off the press many times without cracking at the bends.

(5) The resistance to stretch of Nu-chrom eliminates register trouble.

(6) The permanent printing surface ensures excellent results on every reprint.

(7) Finally, it is claimed to be the cheapest as well as the best.

Ink Drying Time Tester: New Model

A new model of the PATRA Ink Drying Time Tester has been developed and is now available to members.

The instrument works on the following principle: a glass plate is rolled up with the ink under test and a stylus needle rests on it. The plate rotates slowly and a track is made by the stylus on the ink.

A smooth track is produced so long as the ink is wet, but becomes jagged when the ink dries. The start of the jagged track is noted and, as the speed of rotation is known, the drying time of the ink can be calculated.

Ethiopia

First 'Monotype' Machines in Ethiopia

ANOTHER new overseas market, which has recently been opened up by The Monotype Corporation, is that of the

expanding country of Ethiopia. The first 'Monotype' machines, two Keyboards and a Composition Caster, were installed in Addis Ababa in June at the press of B. I. Surmeyer.

During the past two months a number of important persons have visited the firm for practical demonstrations, including the Ethiopian Prime Minister (H. E. Bitwod Makonnen Ind Alkatchew), the Vice-Minister of Press and Information, the O. C. Imperial Body Guard and the Commissioner of Police. A visit is also expected shortly from the Emperor, H.I.M. Haile Selassie.

A great deal of interest has been aroused by this first 'Monotype' installation, and as a result of this the Corporation has already received further orders from the Berhanena Printing Press (the Government Press) and The Artistic Printing Press. One of the chief reasons for this immediate success has been the enthusiastic approval shown for the new 'Monotype' face (Series 599) which has been specially designed for Amharic, the principal Ethiopian language.

Switzerland

More Improvements to Vario Klischograph

CONSIDERABLE interest was aroused at the recent Graphic 57 by the latest Vario Klischograph electronic engraving machine which had the distinction of subsequently providing blocks for the exhibition's newspaper.

The Vario is an enlarging and reducing machine producing a maximum block of approximately 12 ins x 16 ins. It allows a continuous size variation of 4 times enlargement and one-third reduction.

Despite the fact that the engraving speed of the same size Klischograph, of which about 100 machines are running in Great Britain at the moment, is already very high, the engraving of such a large block would take some time. To reduce the production time, the engraving speed of the new machine has therefore been considerably increased.

It is capable of producing halftone blocks on metal and plastic in up to 4 screen rulings, 65, 75, 100 and 120 lines, and will produce combination tone and line blocks.

Furthermore, the machine is capable of producing fully corrected 3 and 4 colour blocks in the same size variations. Copy can be either reflection copy or transparency.

Israel

A special school for letter press and offset printing has been set up in Jerusalem. The machinery installed in the school which has mainly been supported from the United States is worth \$ 60,000. At present the school is trying to recruit experienced teaching staff. There is also a 'house of printers' in Jerusalem which is maintained by the trade unions.

West Germany

THE REBUILDING plan of the war-destroyed Gutenberg Museum in Mainz has reached a further stage. The mayor of Mainz, addressing a committee for the rebuilding of the museum, renewed his pledge that the municipality would render financial help. But costs of rebuilding were assessed at 3,250,000 DM (about £300,000) and the town of Mainz was unable to bear them alone. Therefore an appeal for assistance should go out to all friends of the art of printing throughout the world. Professor Ruppel, the director of the Provisional Gutenberg Museum which is now housed in the Municipal library, expressed the expectation that the new museum would be completed by 1960.

Drupa 1958

THE 3rd DRUPA-International Fair Print and paper will be held in Dusseldorf from May 3 to 16, 1958.

From the experience gained at the 2nd DRUPA, 1954 a classified presentation of exhibits is envisaged.

DRUPA will show the following equipment accommodated in 21 halls: Machinery and equipment for the manufacture of printing blocks and type setting (type setting machines' process equipment, stereotyping and galvanoplastics, electronic engraving etc.); small printing machines and auxiliary machines; printing rollers; heavy and medium printing machines for letterpress; lithographic and intaglio printing; sundries; measuring instruments and printing accessories; composing equipment; screen printing equipment; type; machinery of all kinds for paper making, paper finishing and paper converting as well as auxiliary equipment and accessories for paper converting; products of the graphic industries; paper and card; inks.

The following foreign nations will exhibit: Australia, Belgium, Denmark, Finland, France Great Britain, Italy, the Netherlands, Norway Austria Sweden, Switzerland and U. S. A.

A NEW agreement has been concluded between the Belgium master printers and the Printing unions. Under the new agreement wages will be increased when the cost of living index rises above a certain figure. The agreement also classifies the position of photosetter and teletype setter operators. They must be recruited from the rank of the compositors or graded as such.

U. S. A.

Newsprint-World supplies will exceed demand

WORLD supplies of newsprint in the immediate future are expected to be bigger than the demand, it was reported by the Department of Commerce in Washington recently.

H. P. C. Head, of the Departments business and defence services administration, gave this forecast when

he submitted an extensive study on prospective supply and demand, regarding pulp, papers and board to a House of Representatives commerce sub-committee.

Mr. McCoy said: "World newsprint demand in 1959 is expected to total 14,900,000 tons, compared with a production potential of 16,300,000 tons. Beginning in 1957 there is expected to be a growing cushion of supply in excess of world demand.

United States newsprint consumption demand is expected to rise to 8,250,000 tons in 1965. Compared with 6,800,000 tons in 1956, a gain of 21.3 percent. For 1957, 1958 and 1959 a growing margin of supply over demand is indicated. During these three years United States newsprint capacity increases are expected to more than meet the growth in domestic demand.

A NEW Goss periodical press intended for magazines with circulations of 40,000 to 2,000,000, has been developed in America. The machine, which is described in the current issue of *Printing Abstract* published by Patra, consists of four two-colour units two three-arm reels, a folder, driers, chilling rollers and tension controls.

It will print two colours on 64 pages or four colours on 32 pages, at a speed of 750 ft per mt.

Bermuda

WHAT is thought to be the first colour job ever done in Bermuda, such work customarily going to the U.S.A. or U. K., was completed recently.

The whole work, a booklet on the subject of seashells, was done by the local Mid-Ocean Times. This included the making of the colour blocks.

Ghana

Printing a Gold Coast Bible

A Team of translators is working to translate the Bible into the Gold Coast Language of Twi to commemorate Ghana's independence.

When the British and Foreign Bible Society get the finished text they will rush the printing.

Twi is one of the 1,000 languages into which the Bible is now translated.

It usually takes six months to set up the type of a whole Bible. Only specialised printers can be used. Proof reading may take another three months; the proof reader may be in a remote village in Africa, or in the mountains of Peru.

Arabia

ARAB Countries are tentatively discussing the periodical holding of printing conferences to discuss and co-ordinate printing in Arab Countries. Consultation on technical as well as on financial and economic matters of the industry would be a feature of the conferences. In addition, publishing would come within the scope of these gatherings.

Courtesy Printing World

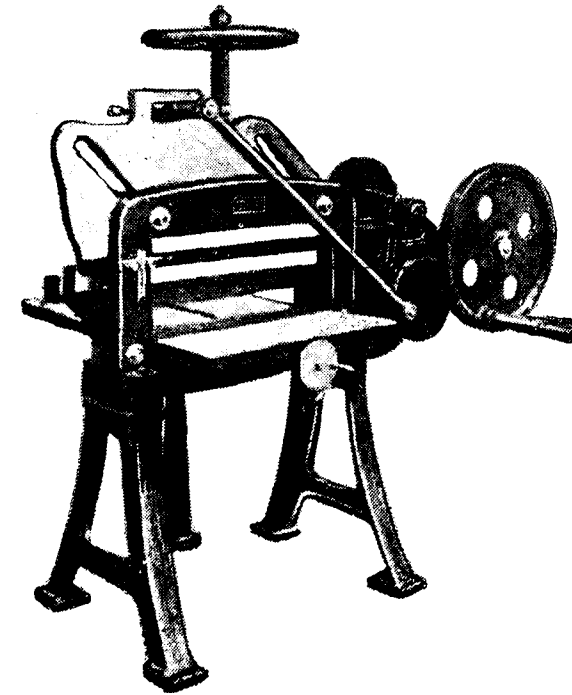
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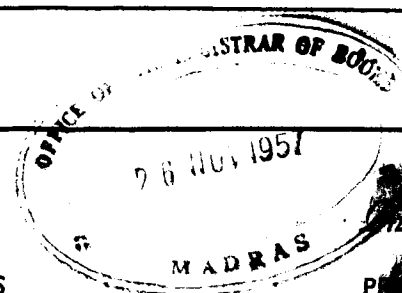
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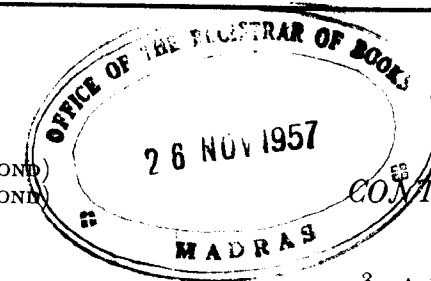
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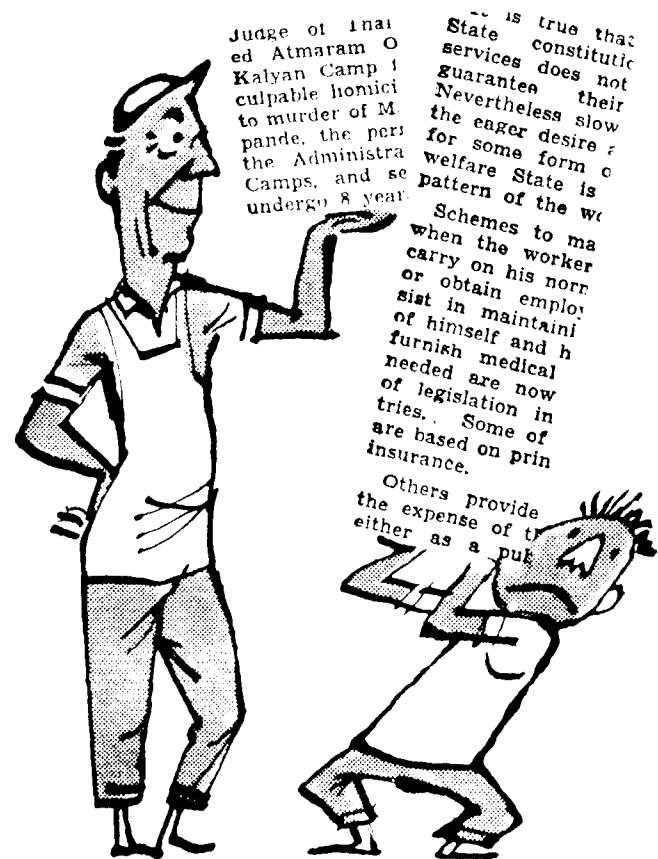
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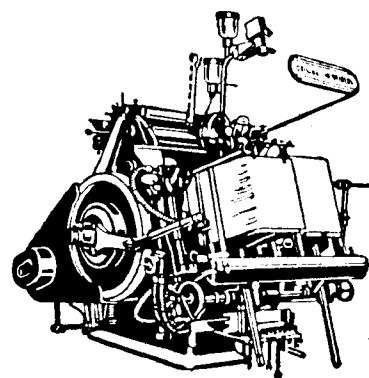
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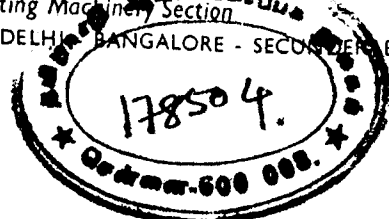
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PRINTECH

A PRESSMAN'S VIEW OF RUBBER PLATES

by JACK DELLER

(Author of Letterpress Machine Work)

Rubber plates are normally supplied as stereotypes which have varied advantages over the conventional metal type forme. Because of the light weight of rubber plates formes consisting of such plates does not put so much strain and wear on a press.

RUBBER PLATES have long been used in both letterpress and aniline methods of printing. This article deals mainly with flatbed printing by the letterpress process.

Compared with normal metal plates rubber plates offer many advantages, viz:

1. They are light in weight.
2. Gives perfect coverage on rough surfaced stocks.
3. Consume about one third less ink.
4. The print is less likely to set off.
5. The job dries quicker.
6. Less make-ready is required.
7. There is less wear on the press.
8. No embossing on the back of the sheet.
9. Buckled sheets will not damage the plates.

A demonstration of some of these advantages occurred when a job printing on strawboard. Printing from type considerable impression had to be applied to press the characters into the

rough, lumpy surface of the board. After running, about 2,000 boards, with the platen giving a loud thump at each impression, the type had become so worn and rounded as to be hardly legible. With 30,000 runs to be done the situation was reviewed. The type was re-set and a rubber stereo of the forme was made. Not only did the press run without thumping under impression, but 30,000 boards were printed at high speed, and there was scarcely any visible deterioration in the quality of the printed result between the first and last sheets.

One little-known advantage of rubber plates is the ease with which pulls can be taken on sheets on perspe. With the increasing popularity of pre-make-ready devices, the use of lining-up tables and chases with sheets of perspe attached will become more widespread, and this advantage of rubber plates will become more appreciated.

It is important to use the type of rubber plate most suited to the job. For example—although natural rubber plates are used for aniline printing they would not be suitable for printing on papers which require a quick-setting ink. If it is desired to use rubber plates on such stocks it is necessary to have the plate made of synthetic rubber. This is because quick-setting inks (they are generally used on coated papers) attack natural rubber and cause

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it to deteriorate quickly. Synthetic rubber is not affected by such inks.

Recent developments in the methods and materials used in making rubber plates has made possible the duplication of half-tones etched in a screen finer than was possible hitherto. In this connection it is important to remember that the slightest amount of excess impression applied to a rubber half-tone will enlarge the dots and distort the tone values of the printed image. Therefore, on a good quality smooth surfaced paper metal or rigid plastic half-tones will give better results than will a rubber plate.

Preparation on the forme

Apart from half-tones with screens finer than 85, almost anything that can be stereotyped or electrotyped can also be duplicated in rubber.

Rubber plates are normally supplied as stereos. The forme from which they are to be reproduced must be given treatment similar to that accorded to a forme for metal stereos and electors.

The forme must not contain any wood, either as block mounts or furniture, otherwise it will be affected by the heat and pressure used in the moulding process. If a wood mount is left in the forme the rubber stereo maker may remove the plate and remount it on a metal base. This procedure will, of course, entail a certain risk of altering the position, and losing register of a colour job. Type-high metal bearers should be placed around the forme matter. This will prevent the edges of the forme digging into the plastic matrix when under the press.

It is worth doing a certain amount of pre-make-ready to the forme before it is sent to the plate maker. The type should be .918 in. high; the solid areas of the forme should be made .003-4 in. above type height, and any fine line work should be made .002-3 in. below.

Grades of Rubber

Rubber plates can be made to any degree of hardness. The selection of the correct density depends on the use for which the stereo is intended. For rough, deep-grained stock a fairly resilient plate is probably better because

of its ability to adapt itself to the irregular surface. Such a plate used on such a stock would not, of course, last as long as a harder stereo used on a smoother surface. To make certain the correct grade of rubber is used it is best to send a sample of the job paper to the plate maker when the stereo is ordered.

Rubber plates can also be supplied as originals. They are hand-carved from the artist's layout. This restricts the use of the originals to broad subjects such as those usually carved on lino cuts.

The letterpress flatbed printer will usually receive the rubber stereo mounted on a flat thin sheet of perforated zinc which is suitable for tacking on to a wood or metal base, or he may receive a flexible stereo without the metal backing, in which case he will have to glue the stereo to the mount. This glueing may cause some difficulty. For normal letterpress flat bed jobs it is therefore better to order the plates already attached to the zinc support.

Make-Ready

The plate and mount should be made up to a height of .918 in. If a pressure gauge is used to measure the plate and mount it should be remembered that it is possible to obtain a gauge reading of .918 in. and perhaps the actual height of plate and mount is .930 in. or more. This is because the rubber compresses under the gauge pressure. A better way to check the height is to use an engineer's micrometer with a ratchet attachment, instead of the normal plate pressure gauge.

The cylinder packing should be as hard as possible, consisting mainly of manillas with one or two sheets of super-calendered for make-ready.

The object of the make-ready is to get the desired image using the lightest impression. A 'kiss' impression is essential otherwise the design or letters will be distorted by the excess pressure. If such distortion occurs the register will be affected and premature wear of the plates will take place. Even if the result of excess pressure is not apparent on the printed sheet it will cause the surface of the rubber to become pitted and eventually lead to

THE MANUFACTURE OF

INKS FOR NEWS PAPER PRODUCTION

By The Technical Director,
Usher-Walker Ltd., London

PRINTING inks generally consist of mixtures of strongly coloured powders ground finely into oils or varnishes, but news inks are a particular type of letterpress ink adapted for use on fast running presses. Drying depends entirely on penetration into the paper instead of by a mixture of penetration, oxidation and polymerization.

Materials used in the manufacture of news inks consist essentially of a black powder dispersed finely in an oil or in a solution of resin in oil. Different viscosities of oils may be used and consequently it is possible to blend these to reach the body which may be required to suit best any particular machine speed.

Let us consider first some of the raw materials which are available.

Black Pigments

The oldest colouring matter for use in inks is lamp black, which is produced when organic materials are burned where the supply of air is restricted, so that a smoky flame results. The smoke is condensed on to a surface and collected. The same result is obtained where a material containing a very high proportion of carbon is burned under conditions that would burn most materials smokelessly. These grades of colouring matter can be a bluish-grey colour and produce inks with little gloss.

Carbon black is produced by burning natural gas from petroleum in a supply of air sufficiently reduced to cause a smoky flame. This flame impringes on rotating metal discs or cylinders which are fitted with scraping knives and in this fashion, the carbon is collected. This type of carbon black is known as Channel Carbon. There are several grades of this material and they include the deepest known pigments, the depth being due to the extremely small particle size. However, the undertone is usually brown in colour, but their use permits a gloss finish.

If the natural gases mentioned in the last paragraph are burned in chambers or furnaces, the carbon is known as Furnace Carbon Black, the properties of which lie between those of Channel Black and Lamp Black.

Toners

When carbon blacks are dispersed in oils by themselves, it is not usual to achieve an optical black state, and consequently, it is usual to tone the ink. This can be done by using either blue pigments or dyes which may be blue or violet in shade. In the case of news inks, it is more usual to make use of dyes, as these are extremely strong and small quantities have a very marked effect upon a considerable volume of ink and for this reason,

they are more economic. Blue pigments would eventually give a similar effect, but at a much higher cost to the consumer. It is true to say, however, that pigments have the advantage over dyes in that they do not give rise to strike-through, and once printed, the blue colour does not develop as is the case with dyes. Thus it can be seen that during the course of formulating a news ink, care must be taken with the amount of dye which is added, to the formula. It is interesting to note at this juncture, that in the United States, the tendency is to use inks which are not toned, although it is true to say that they have at their disposal paler oils which are less prone to staining the newsprint.

Mineral Oils

These are obtained from the various fractions produced during the refining of petroleum. The grades most commonly used have a viscosity not far removed from that of castor oil, but heavier oils are available for a formulation of inks to be used on slower running presses. The oil may be a single distillate fraction or the result of blending various fractions, either by the oil company or by the ink maker. It is interesting to note that this liquid has very poor wetting characteristics when in contact with carbon black, and it has been found that this disadvantage is less pronounced when asphaltic matter is present. However, asphaltic materials tend to yellow the oil and increase paper staining when the ink is printed out, the result being that more toning of the ink is required.

This again is a factor which is a disadvantage from the economic point of view. Rosin oil was at one time the main liquid used in news inks, and although theoretically, it is ideal in its properties, it is at least four times the price of ordinary mineral oil, and consequently, is only used occasionally in semi-drying inks. Common rosin may be dissolved in mineral oils to increase the viscosity of inks or use on slow running presses.

Lighter petroleum fractions may be used as thinners occasionally, but they must not be thin enough to be volatile at room temperatures.

Manufacture

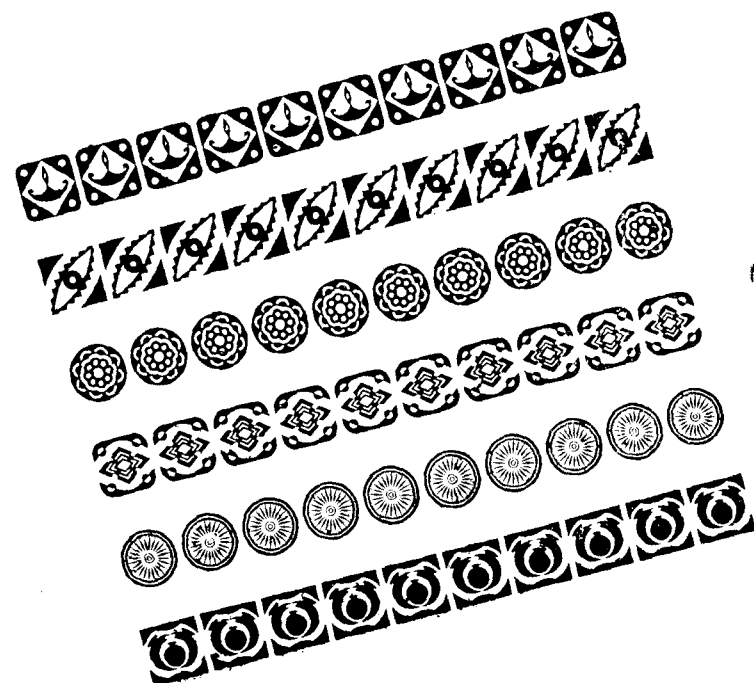
Having decided upon a formulation using the raw materials available, the manufacture of the ink is a question of efficient mixing and final dispersion of the raw materials into a homogeneous mass.

It is often said that inks are ground, but this may not necessarily be true, for grinding takes place only when the ultimate particle size of the pigment is reduced by crushing. The process of dispersion which occurs in news ink is that of attempting to separate completely each individual particle in the vehicle. Thus "seediness" in a news ink means that the particles are not adequately dispersed and gives no indication at all of the ultimate particle size. However, in spite of the foregoing, it is true to say that ink is usually described as being ground, even by those who are involved in the work.

Two main systems are used in the pre-mixing of raw materials. The first is to disperse as much pigment as possible in the smallest volume of oil possible to form a stout paste which can be kneaded in a slow running heavy duty mixer. This mass is then reduced to the consistency required after mixing. The second system is to place all the raw materials required in a high speed machine to achieve the dispersion required before using a mill.

Even the most efficient mixers cannot complete the manufacture of news ink, as it is possible that some of the raw materials used may contain hard particles of foreign matter, and consequently, the mass must be passed over a roll mill for refining. This refining process also has the effect of removing any air bubbles which may have become trapped in the mass during the first stage of manufacture. As these mills are running at fairly high speeds and there is a great deal of friction between the grinding bar and the roll, it is necessary for the machine to be water-cooled, so that an even temperature is maintained and there is no chance of distortion between the roll and the bar.

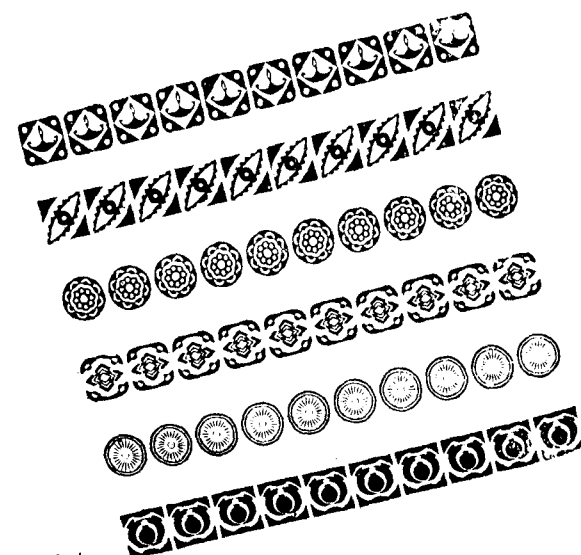
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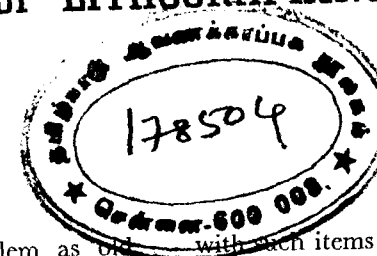
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Can we do a good job of transferring gold ink onto paper by the offset process? The answer to this question, of course, depends upon the kind or quality of reproduction we, or more especially our customers, are seeking. —Author

The Problems of LITHOGRAPHING GOLD INK

By WILLIAM BYERS



LITHOGRAPHING gold ink is a problem as old as lithography itself and, I am sorry to say, a problem we have not really succeeded in solving the way we would like. I expect an argument on this statement, but analyse the situation and I am sure you will agree that we have not made the strides in this phase that we have made in other phases of the business. It is somewhat like the problem of a dampening system. Everybody knows that it is a pain in the neck. From time to time you hear of new innovations, but we are still hear with the same old dampening system.

Actually, I would say our good lithographed jobs in gold are a compromise. We have not been able to reach our goal so the best we can do, looks good. However, when you make a comparison with other kinds of printing, we still have a long way to go.

It is a well-known fact that the success of the offset process has been due in a large part to foresight and the efforts of the people in the trade to make our process work, and work better than any other printing process.

I also think it can be said truthfully that no other part of this business has been thought about and worked on, experimentally or otherwise, with less show of results. True, considerable time has been consumed in experiments

with such items as the dampening system with an eye toward eliminating dampeners but this has been mainly an engineering deal. I will wager every other pressman, inkman or those just interested have at some time tried to make up, or run on the press, a gold that has the true brilliance of metallic gold.

I guess the best you can say in our defense is that reproducing a good metallic gold job does not lend itself to our process. Rather, I should say we have not been able as yet to make it work successfully with our process.

A few years ago I too was bitten with the bug. Fired with the dream of producing a true gold on paper by the offset process, the boys in our plant spent many evenings and week-ends on the press searching for the answer. It came but not exactly to our liking.

Our adventure was prompted first by a request from a customer who wanted an improvement of gold on a label we had been producing for them. In fact it was an ultimatum: we must improve the gold or lose the account to another process. First, we contacted four or five ink companies, two of which specialised in the making of metallic inks. These supplied us with samples of imitation gold, various gold powders and varnishes and such information as would help.

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PROBLEMS OF LITHOGRAPHING GOLD INK

(Continued from page 11)

Armed with a sample plate of the label in question, we started our experiment. First, we tried the imitation gold on different kinds of stock. Next, we tried mixing the varnish and imitation gold together. We tried putting down a base colour first and then running gold ink over the base colour. We also tried two passes of gold ink. We even ran some sheets solid, that is without the dampeners. All in all, we tried every possible combination we could think of. From time to time throughout the experiment we submitted samples to our customer while we continually made changes and adjustments trying to reach a satisfactory solution. At long last, we had to bring the experiment to a conclusion and submitted final samples and admitted they were the best we could do. Unfortunately, our best did not satisfy the customer and we lost the account.

Our experiment was not a complete loss, however, for we had gained some knowledge of gold ink and had proved to ourselves what could or could not be done with it. We learned that regardless of the amount of any one or any combination of the three shades of gold powder used in the formulation, the ink will reproduce exceedingly weak.

In order to strengthen or gain the shade of gold desired, it is necessary to add some colour of a conventional ink, like yellow, red or blue. We found that laying down a base colour did not help too much and two passes with the gold resulted in the gold that is too dark.

We found that gold on offset stock was not too good and that gold looked best on coated stock. In short, the more gold to the stock the more metallic the gold. We found that gold powder added to imitation gold gave more sheen than imitation gold itself and that a mixture of varnish and gold powder gives the best possible metallic gold you can get. However, we also found that there just is not enough difference between all powder mixtures and imitation gold to warrant the extra work and problems in running a powdered gold mix on

the press. We found, also, that all gold mixtures tend to tarnish and must be prepared at approximately the time it is to be used. Also, that the powder tends to separate from the varnish and must be stirred often while running. Fountain agitators are a great help in running gold ink.

Our experiment proved to us that the dampeners do much toward destroying the metallic sheen. This tends to bear out the possibilities of a better gold in the future if and when dampeners are eliminated. By the time this is accomplished, I imagine the ink manufacturers will have come out with a stronger, truer metallic gold ink for offset reproduction.

For the present be careful of committing yourself to your customer on a gold sample. So many times a customer will submit a gold sample that has been run through a bronzer or reproduced by the silk-screen method. If there is any doubt, submit samples of what you can do by offset and save yourself a lot of headaches.

Courtesy: Graphic Arts Monthly

A PRESSMAN'S VIEW OF RUBBER PLATES

(Continued from page 7)

Care of Rubber Plates

Neither Paraffin, turps nor white spirit must be used for cleaning rubber plate. It is far safer to obtain a special solution from the inkmaker. Even this fluid should be used carefully. Some rubber plates are fastened with a double-sided adhesive tape; if the cleaning solution penetrates this it may lose its adhesion at the edges and gradually release the plate. If the tape absorbs the cleaning fluid it may cause the rubber plate to swell at the edges. After cleaning the plate with the fluid, dry with a soft rag immediately.

Storage

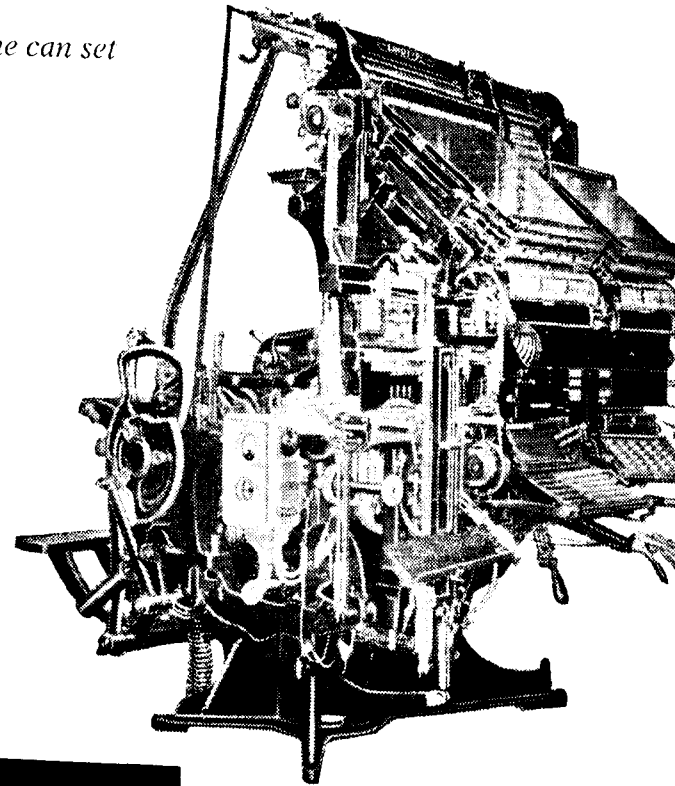
When the rubber plates are not being used they should be stored away from the light and heat. A cool dark place away from radiators or steam pipes is ideal.

Courtesy: Paper and Print

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FOR OFFSET APPRENTICES (1)

Achieving Exact Register

By ERIC J. TONGUE

BEFORE Commencing to make-ready for a job involving very close register it is wise to spend a few minutes in thinking over or planning the make-ready and checking materials.

If we assume that the plates fit and the images are positioned correctly on the plates, that the paper has been hung or conditioned and has been checked to ensure that the stretch is in the round-the-cylinder direction, then the next step is to mark carefully the centre and gripper margin of the plates. A check that the image is printing exactly to size will also be required and for this purpose a strip of metal is laid across the back edge of the plate and scribe marks drawn on both strip and plate to correspond one with the other. These marks should be repeated at each side of the plate. If they are filled in with ink and placed so that they fall on the edges of the sheet when it is printed, a record of the printing size can be obtained by comparing the distance between marks with those on the metal strip. For accuracy these marks must be made with a fine needle.

Now test the plate for thickness, using a micrometer, and if necessary cut sheets of papers to size for packing the plate to the

correct thickness. The plate can now be fitted into its exact position on the cylinder and tightened up. It cannot be stressed too strongly that the plate should not be over-tightened, it is unbelievably easy to stretch or distort a plate in this way. The paper can now be placed in the feeder just that much out of centre to allow for the pull up of the side lay. Run a sheet down to the front lays and position the side lay face about three-eighths of an inch away from the paper. To set the tension on the side lay spring, release the tension until it fails to draw the sheet up, then gradually increase it until it just draws the sheet up. Some side lays are supplied with several springs of different strength. Choose the spring which operates satisfactorily on about half tension on the particular paper. A weak spring operating on full tension or a strong spring operating on a minimum of tension will not give accurate results. Now set the front lays to give about five-sixteenths of an inch grip and make sure that this is level along the whole length of the sheet.

Set the sheet smoothers along the length of the sheet, making sure that the sheet is well controlled adjacent to the front lays. The sheet should just pass freely under the smoothers.

Set the side lay guide so that it touches the face of the side lay and just clear of the sheet so that it cannot buckle or side up the face of the side lay.

Ensure that all the grippers in contact with the sheet are holding with an even tension particularly the end ones. Should these be off, as they so often are, the image may print large across the back, edges or distort. A few sheets may now be run slowly through without printing. Check that the sheets are running down the feed board parallel to the front lays, that they do not arrive before the front lays are fully home and that the side lay tension finger does not contact with the sheet before it is registered against the front lays. Before pulling printed sheets it is advisable to check that the blanket and pressures are level. This can be done by running out a thin film of colour, taking off about five-thousandths of

மணிமேகலை ரோமன்

தமிழிலுள்ள ஐம்பெரும் காப்பியங்களுள் ஒன்றான 'மணிமேகலை' பொலத்த நூல். 'மணிமேகலைச் சொல்லெலாம் அறம்; பொருளெலாம் அறம்.' மணிமேகலையின் காலெலாம் அறம்; புத்தர் பெருமானைத் தமிழிற்காட்டும் ஒரு மணிநிலையம். 'மணிமேகலை' என்று தமிழ்ப் பெரியார் திரு. வி. கவியாண சுந்தரர் அதைப் புரந்துள்ளார். 'வசியாபதி'யும், 'குண்டலகேசி'யும் ருமுநூல் களாக அகப்படாமலே போய்விட்டன. ஆயினும் இவைகளைப் போன்ற பொலத்த நூல்கள் நூற்றுக்கணக்காகத் தமிழில் இருந்திருக்கவேண்டும் என்பதில் ஐயமில்லை. இந்நூல்களிலே, எங்கும் புறந் பெற்ற தம்ம பதத்திற்கு எத்தனையோ மொழிபெயர்ப்புக்கள் இருந்திருக்கலாம். உரை வடிவாக மட்டுமின்றிப் பாடல்களாகவும் அது தமிழில் வடிவம் வந்திருக்கவேண்டும். ஆனால் மருந்துக்கு ஓர் எட்டுப் பிரதிகூட இல்லாமல் அவைகளும் மற்றைப் பொலத்த நூல்களோடு மறைந்தொழிந்துவிட்டது. தம்ம பதத்திற்குத் தமிழில் புது மொழிபெயர்ப்புக்கள் செய்யும்படி ஏற்பட்டுவிட்டது!

தம்ம பதத்தின் பெருமையைப்பற்றி ஜெர்மன் மொழியில் புத்த சரித்திரத்தை எழுதிய ஹெர்மான் ஒல்டன்பர்க் என்ற பேராசிரியர் கூறியுள்ளதைப் பார்க்கினும் அதிகமாக எழுதவும் கூறுமுடியாது.

ஐ மணிமேகலை ரோமன் எழுத்துக்கள்
24, 18, 14, 12, 11, 10 பாயிண்டுகளில் கிடைக்கும்.

தயாரிப்போர்:

நார்ட்டன் அண்டு கம்பெனி

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சூலை. சென்னை-7

PRINTECH

pressure from the paper cylinder and printing a few solids. If the pressures were correctly set and the blanket correctly set and the blanket correctly packed there should be hardly any impression on the paper at all. If this is so, increase the pressure .001 in. at a time until a weak impression is obtained; any spots that are not printing should be packed with thin tissue paper beneath the blanket.

When an even impression is obtained the pressure may be increased until a firm solid is obtained. The next step is to print a sheet and check the position. This will avoid the need to pull fifty or sixty sheets of waste: three will be found sufficient and a great deal of time saved. At this stage don't worry about quality of impression or colour.

Correct the position by altering the plate; don't touch the front lays or side lay unless it is a small correction involving only a few thousandths of an inch.

At this stage the size of the printing image against the gauge which was marked out for this purpose, should the size be correct, the make-ready for colour and quality may proceed. If the image size is not correct printing should not proceed until the cause of the trouble has been ascertained and corrected.

This difficulty can be caused by a badly set or too tightly set brush or wavy or tight edged paper. This may mean running the paper through the machine with the dampers on but without printing. The pressure should, of course, be on and a blank plate fitted to the cylinder. Some times reconditioning or rehang- ing the paper is sufficient. Very often slowing up the machine will correct the size if it is large across the back edge. Assuming that the printing side is correct and a colour pass has been obtained the first batch of sheets should be run. These should be watched carefully down the feed board, following them into the front lays and up to the side lay. Remove these sheets from the machine and after knocking them up, fan them well out. If the image size marks have been so arranged that they fall on the edges of the sheet they may now be used as register guides. With the

sheets still fanned out any mis-register can easily be seen. The register of the side lay can be checked by scratching a few lines on the plate so that they fall on the edge of the printed sheet just where it contacts the side lay. These marks should be inspected with a magnifier; the naked eye just is not good enough for exacting work. If the guide marks paral- lled to the gripper vary equally from end to end of the sheet it usually indicates wear in the gripper shaft or gripper opening mechanism, either of the main shaft or swing arm. It can be caused by incorrect setting of the register tooth on the swing arm in which case it would vary with the speed of the machine. If the mis-register is at one end of the sheet look out for a gripper pad on the swing arm pushing the sheet out of the front lays, or a curled corner of the sheet fouling the swing arm. Check that the smoothers are not fouling the sheet.

If some of the sheets seen to be pulling up to the side lay harder than others, this usually indicates too-much spring tension, a groove in the face of the side lay. Or perhaps the side lay face has not been set quite square with the edge of the sheet.

Most feeders have a set of ball bearing set in brackets which are arranged so that after the sheet has left the last wheels these ball bearings continue to drive the sheet up to the front lays, but without interfering with the action of the side lay. See that these are set properly and that the brackets in which they are held are not touching the tapes. Finally check over the tapes to see that the joints are in good condition; a bad joint will often cause a sheet to mis-register.

When the first colour has been run off, the second plate should be put on in exactly the same place as the first, and the fit obtained by moving the plate only. In this way the make-ready for register can remain exactly as it was for the first printing.

This procedure not only improves register but it saves a great deal of time.

Courtesy: Modern Lithographer & Offset Printer.

NEWS

PRINTECH Diary Page:

News of people, production and events in the Printing, Paper and Publishing World

India

Ban on Import of Printing Machinery

MR. TOM KING, Manager for India, Burma and Ceylon, Linotype and Machinery Company, said that the national newspapers in India would be seriously hit by the ban imposed on importing complete printing machines to India.

Mr. King said that the decision of the Government of India to totally ban the import of the complete machines would force the actual users to continue to keep their oldest machines in commission at great expense. He pointed out that for the past three months no licences appear to have been issued to any established importer either for complete machines or for spare parts. The import ban levied by the Indian Government "has resulted in accumulation of stocks at our works in the United Kingdom and the United States." The licences which they hope to secure would be almost entirely used up during the first few weeks of the new licensing period in overtaking the backlog of their orders.

Mr. King said that printed matter produced in India bore favourable comparison with any other country in similar circumstances. Leading publishing houses were working overtime and needed more machinery to enable them to increase the work. For example, books on medicine and engineering were subject to constant revision and reprint. At the moment "India imports vast quantities of such technical books from abroad which costs a lot of money. This could be produced in India cheaply and thus save valuable foreign exchange." Mr. King, who has been very closely connected for the past several years with the development of printing and newspapers throughout India, regretted that the printing industry which was handmaid of all other industries should be given such scant consideration.

Awards for Printing and Designing

THE annual competition for the State awards for excellence in printing and designing will be held this year in November. Sponsored by the Union Ministry of Information and Broadcasting, this award was first instituted in 1955 to encourage higher standards in printing and designing of books and display publications.

This year's awards will be given for the best produced material in the following 19 categories: Children's books for children below 10 years; children's books for children over 10 years; illustrated books—art books—book production in English and Indian languages books on India-made paper; daily newspapers in English and Indian languages; display advertisement lay-outs; art magazines; house journals, periodicals, posters—folders, offset or photogravure and letterpress, calenders—offset or photogravure and letterpress; diaries—Devanagiri type faces; publicity booklets, tables; and best bound books.



Sri K. P. Rajagopalan, Process Technician, M/s Allied Photographics (Pr) Ltd., returned recently from the Continent. He visited the factories of Gevaert Photo-Producten N. V. Belgium, Johnsons of Hendon Ltd., London and Charles Champion Co. Ltd., London where he underwent intensive training in Process and Graphic Arts. The knowledge he acquired at these factories should be of great benefit to the Process trade in India. He is an I. F. P. T. member.

This year the list of categories entitled to compete has been extended to include press advertisement layouts which did not figure in the earlier competitions.

There will be two sets of prizes in each category—a first and a second for the publisher or designer, and a first and a second for the printer. In addition to these, there would also be certificates of merit for each category.

This year's competition is limited to items produced in India after August 15, 1956.

Scheme for uniform symbols in proof correction

A PRESS Note issued by the Indian Standards Institution says: Widespread growth of literacy in the country is leading to considerable increase in reading material, specially in Hindi and other Indian languages. The need is, therefore, felt, along with other standards of documentation work, for a standard on proof correction symbols which could be used throughout the country by all the presses, dealing with publications in English, Hindi and other Indian languages.

In correcting proofs, two symbols are employed for each correction, one used within the text and the other in the margin. Printing presses in the country generally employ the same set of symbols in correcting proofs in Roman script and in Indian languages. While the symbols used within the text are not linguistic, some others, which are used in the margin, such as "trs" for transpose, 'stet' etc. are linguistic. It is desirable that symbols used for proof corrections in Indian languages should not be linguistic. In a draft standard issued, an attempt has been made to use the same or similar non-linguistic symbols both in the text and in the margin wherever possible. Still, the list proposed in the draft contains about a dozen symbols which are linguistic and which should be replaced by non-linguistic symbols. Suggestions to replace the linguistic symbols as well as comments on the draft are invited by ISI before November 10.

The draft Standard gives an example illustrating the use of each of the proof correction symbols. With a view to minimise alteration of MSS at proof stage recommendations to be followed in the preparation of the manuscript for the printer have been included in an appendix to the draft.

"Advertising Week" celebrated in Madras

THE vital role of advertising in an expanding economy was stressed by Dr. A. Lakshmanaswami Mudaliar, Vice-Chancellor of the Madras University, inaugurating the "Advertising Week" organised by the Advertising Club, Madras, in connection with its first anniversary celebration.

Dr. Mudaliar, who also declared open on the occasion an exhibition of commercial art organised by the Club, emphasised the growing need for pushing up the adver-

tisement for Indian goods in foreign countries and to promote research on the methods of advertising.

The function was held in the premises of the Southern India Chamber of Commerce, Esplanade, Madras and was attended by a large gathering of advertisers and businessmen in the City.

Welcoming Dr. Mudaliar and the gathering, Mr. S. Parthasarathi, President of the Club, said that the art of advertising had developed into a specialised branch of business in the West and its role in the production and distribution of goods had been fully realised and appreciated in the U. K. and U. S. A. India had done well during the past two or three decades, but had still to work up a long way before it could reach the standards established elsewhere. But when once the value of this tool of industry was realised by top men in business and Government circles, its growth was bound to be rapid, he said.

Mr. Parthasarathi suggested during his speech that the Madras University, being one of the oldest and most progressive in India, which had already offered a course in journalism and which had just decided to open a course in Architecture, could institute a course in advertising as well.

Dr. Lakshmanaswami Mudaliar agreed that advertising was an art as well as a science and remarked that unfortunately many people in this country had not understood its value. As one who had some experience in several countries both in the Eastern and Western hemispheres, he could say that advertising played an important part in the life of a nation.

He said advertising was not something different from salesmanship and pointed out that the latter was essentially a profession in which advertising techniques had to be adopted. No one could be a good salesman, who had not grasped the first principles of advertising, he said and added that in that respect our salesmanship in this country was rather wanting. This was one of the things that the Advertising Club should impress on salesmen in this country.

England

New BFMP Training Course will fill educational gap

A New course of study designed to "fill a gap in the printing industry's educational structure" is announced by the British Federation of Master Printers.

It is the preliminary technical course in printing a correspondence course of six handbooks, with self-test questions and five test papers.

The course aims to provide the student with a broad foundation of technical knowledge about printing and printing office procedure, as a basis for more specialised study of such subjects as costing, estimating, salesmanship, and order clerk's work.

Removes major handicap

In a foreword to the course, Lord McCordale of Newton, President of the Federation, writes:

OCTOBER 1957

Search for quality ...you'll find **GEVAERT**

A quality job requires film or plate that's quality all the way—Gevaert film or plate, in other words. Dependable... uniform... with wide exposure and developing latitude... low halation, low fog in forcing. Gevaert film produces dense, hard dots... is tough and abrasion resistant. For quality every time—reach for Gevaert.

LITHOLINE 0 82p FILM

maximum contrast, highest sensitivity, latitude and resolving power. Polystyrene base for utmost stability.

0 81 LITHOLINE ORTHO

0.003" thick, thin base for line or screen positives, or negatives.

0 82

in regular base, same emulsion—0.006" thick.

CORRECTONE FILM

a special film, intended mainly for continuous-tone negatives in photogravure and photolithography. It preserves the sparkling highlights, will block out backgrounds in wash drawings, pencil sketches and similar originals.

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a fast panchromatic emulsion. Long gradation, wide latitude in exposure and development. Ideal in continuous-tone colour separation work and masking process.

GRAPHIC P 2 PLATE

for making continuous-tone separation negatives from colour transparencies or copy. Same photographic characteristics as P 23 film. Ideal for masking process.

RP 5 PLATES

has a very vigorous gradation and high speed. Intended for colour separation negatives in photogravure, photolithography and process engraving.



GEVAERT

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"The course will, I hope, be of particular value to young people on the office side of the industry who need to improve their knowledge of the technical aspects of printing before embarking on the study of such subjects as costing, estimating, order clerk's work and salesmanship, where ignorance of technical matters can be a major handicap. It will be helpful also to those engaged in the works side of the industry who wish to learn about the work of other departments."

The six handbooks cover respectively: the organisation of a printing establishment; composition; illustrations and letterpress printing; paper; lithography and other processes; and warehouse and bindery work.

Also included are a glossary of printing terms and a book of paper samples. The handbooks are written in a clear readable style, and all are profusely illustrated with photographs, line drawings, diagrams and charts to facilitate study.

Government Press, Madras, Installs Nebiolo's Latest Automatic Machines

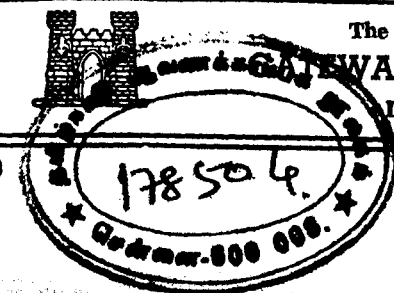
THE high speed deluxe series latest model Atena Rte in double crown size and Rftd/M in double demy size with extended pile delivery and automatic feeder have been recently installed and are working at the Govt. Press, Madras. Although the Govt. Press became a proud possessor of these machines only now, such machines are already working in various Govt. Presses and a large number of Commercial Printing Houses. A few months back, the Andhra Govt. Press have also installed 4 Nos. these "Atena Rte" machines at their presses; two each at Kurnool and Hyderabad. These machines are sold and serviced in India by the Nebiolo's sole agents The Standard Printing Machinery Co., 12/81, Sembudoss Street, Madras-1 and the Standard Type Foundry at Bombay, Delhi and Calcutta.

The Cover of this issue is printed on

GATEWAY PAPER, "Proven" White Art

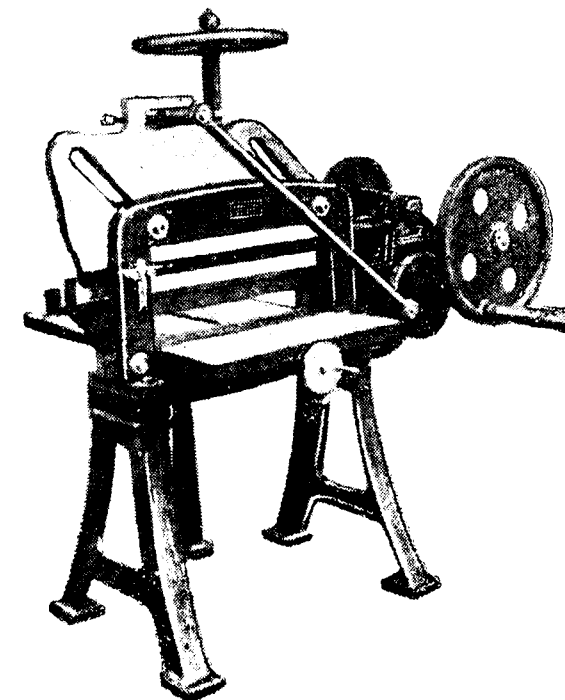
Double Crown, 45 lb., 500 sheets

20



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