

PRINTTECH



A SERVICE JOURNAL IN PRINTING & PUBLISHING

Vol. VII

JUNE 1960

No. 11

OVER 50 YEARS

of yeoman service to our national print industry

Manufacturers of

Printing Types in 14 languages Halftone, Line & Electro Blocks

Pioneers in the Production of

"Arumugam" New TELUGU SERIES

"Ganapathi" New TAMIL SERIES

"Swadesi" New MALAYALAM SERIES

"Mani" New KANNADA SERIES

SWADESI TYPE FOUNDRY

Head Office:

CHINTADRI PET

Phone: 84469

::

MADRAS-2

P. B. No. 2433

Cable: "BHUVANA"

Branches:

13-B, INDUSTRIAL ESTATE
SANAT NAGAR, HYDERABAD-18

6-B, INDUSTRIAL ESTATE
RAJAJI NAGAR, BANGALORE-10

82
M143m21, N53PH-12
N60-7-10-12
178515

PATENT No. 99042

40 1b.

36 Point 40 lb.

சங்ககாலத்து தமிழகம்

40 ib.

30 1b

30 ib

30 15.

30 lb.

3015

SPARTAN TYPE FOUNDRY

CHOO LAI, MADRAS 7

PRINTECH

7, Kondi Chetty Street, Madras 1

Hony. Editor & Business Manager : S. K. Thamba, L.P.T., A.S.T.D., A.M.I. Ptg. M.

Annual Subscription : Members Rupees Five ; Non-members Rupees Ten ; Single Copy Re. One.

ELECTRONICS SPEED THE PRINTING PRESSES

By

BRIAN INNES

(Associate Editor of "The British Printer" and a member of the Association of Printing Technologists)

As printing strives to keep up with the accelerated pace of modern life, and new machines and equipment are developed, we hear increasingly of devices that are said to be "electronic" or electronically-controlled, and which owe their greater efficiency to this fact.

What is electronics? It is important to define this term closely, because few technical descriptions have been so popularly misused and overworked. The science of electronics makes use of the behaviour of electrons in a thermionic valve, a gas-filled discharge tube, or a semi-conductor. The most important of these is the thermionic valve, or its recent equivalent, the transistor. These can function both as amplifier and as rectifier; while if part of the output from the amplifier is fed back to the input circuit in phase the result is an oscillator, or alternating current generator, whose frequency can be varied as desired by changing resistances and capacitances within the circuit.

Controlling External Variables

Thus the characteristics of an electronic circuit comprising one or more valves or transistors and resistors are rectification, amplification, a controlled periodic output, and the possibility

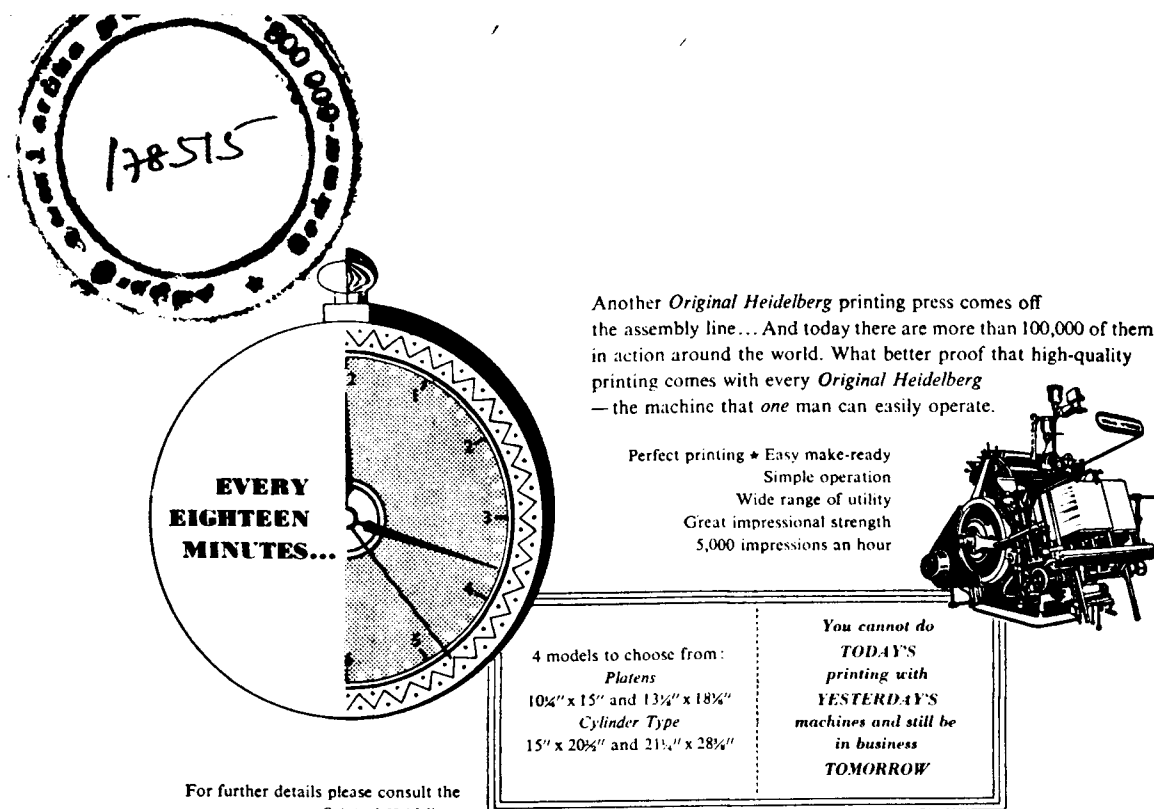
of employing feedback as a means of controlling variables external to the circuit itself.

This rigorous definition excludes such devices as electromagnetic relays of micro switches: these control mechanisms may well be connected to apparatus comprising electronic circuitry, but their presence does not necessarily imply that a control is electronic.

For instance, the movement of a guillotine backgauge may be controlled by means of a photo-electric eye that detects stops set at intervals along a bar. Although the photocell falls within the definition of an electronic device, and electronic circuits may be needed for current stabilisation and for amplification of the output from the photocell, the actual control of guillotine movements will very likely be purely mechanical.

Easier Detection of Errors

The periodic output from an electronic circuit, which can be varied at will in amplitude and frequency, can be used for regular monitoring of any continuous repeat process. At the same time, it is possible to obtain a measurement of the rate at which any deviation from the required operating conditions occurs, so that a prediction can be made



Another *Original Heidelberg* printing press comes off the assembly line... And today there are more than 100,000 of them in action around the world. What better proof that high-quality printing comes with every *Original Heidelberg* — the machine that *one* man can easily operate.

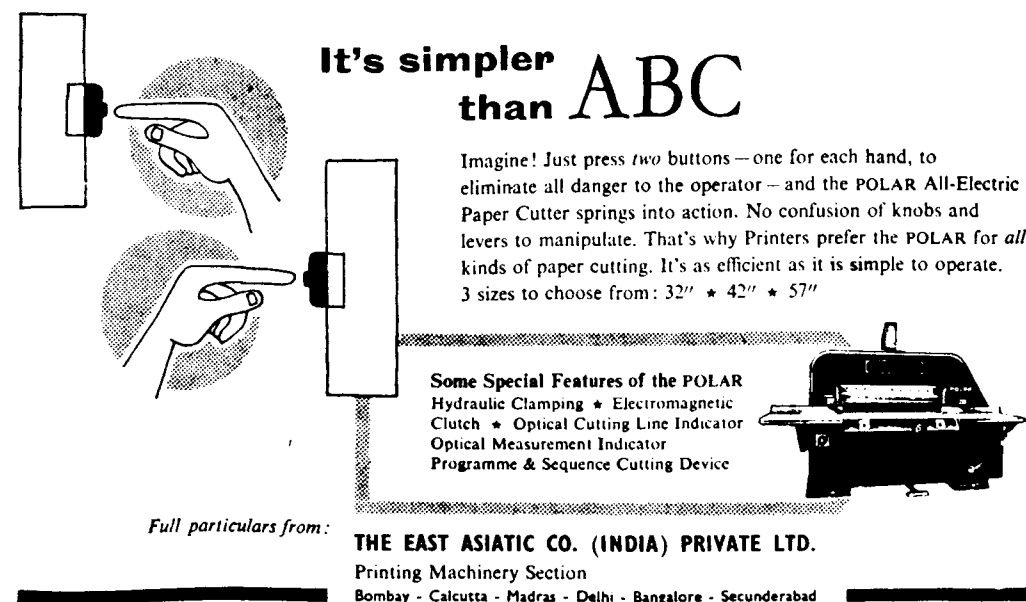
Perfect printing ★ Easy make-ready
Simple operation
Wide range of utility
Great impressional strength
5,000 impressions an hour

4 models to choose from:
Platens
10 $\frac{1}{4}$ " x 15" and 13 $\frac{3}{4}$ " x 18 $\frac{1}{2}$ "
Cylinder Type
15" x 20 $\frac{1}{4}$ " and 21 $\frac{1}{2}$ " x 28 $\frac{1}{4}$ "

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

For further details please consult the
Original Heidelberg
Agents for Northern,
Central and Southern India:

THE EAST ASIATIC CO. (INDIA) PRIVATE LTD.
Printing Machinery Section
Bombay - Madras - Delhi - Bangalore - Secunderabad



It's simpler than ABC

Imagine! Just press *two* buttons — one for each hand, to eliminate all danger to the operator — and the POLAR All-Electric Paper Cutter springs into action. No confusion of knobs and levers to manipulate. That's why Printers prefer the POLAR for all kinds of paper cutting. It's as efficient as it is simple to operate. 3 sizes to choose from: 32" ★ 42" ★ 57"

Some Special Features of the POLAR
Hydraulic Clamping ★ Electromagnetic Clutch ★ Optical Cutting Line Indicator
Optical Measurement Indicator
Programme & Sequence Cutting Device

Full particulars from:

THE EAST ASIATIC CO. (INDIA) PRIVATE LTD.
Printing Machinery Section
Bombay - Calcutta - Madras - Delhi - Bangalore - Secunderabad

of the extent of future deviation. This determination of rate of change is only practicable by means of electronics; and if an electronic device can be set to measure rate of change, and to feed this information back through a control device, it is possible to obtain immediate correction of the deviation.

In printing today—and in the allied industries of papermaking, bagmaking, and the like—the tendency is continually toward higher speeds and more continuous operation. When paper is being printed sheet by sheet at 4,000 impressions per hour, for example, it is relatively easy for the operator to detect errors on a single sheet and to stop the machine or make adjustments in the time taken for only a few sheets to be printed and wasted; but if printing is being carried out on a paper web at speeds up to 40,000 impressions per hour, it becomes very difficult for the operator to observe the error in the first place, and the wastage will be rather high before any correction has been made. So electronic controls, with the ability to make accurate measurements at high speeds, and with an almost instantaneous response, are of the greatest importance in modern printing. An important amount of pioneer work in their application has been carried out in Britain.

A Successful Application

One of the first successful applications of electronic control to printing machinery was the Autotron, introduced in 1947 by John Crosfield, whose company has now installed a wide variety of electronic controls throughout the world.

The Autotron, or the closely-related controls that have been developed from it, can be used for the maintenance of close register on web-fed presses: between colours, both longitudinally and across the web; on length, for folders, sheeters, die-cutters, perforators or backing-up; and when inseting one web with another before feeding to sheeters and folders.

In its fundamental form, for automatic colour register, the control employs photo-electric scanners to pick up register marks, either in line across the web or in column

along the web. Impulses from the scanning heads travel to amplifying and calculating circuits in the control cubicle, which cause servo motors controlling either register rollers or differential gears on the printing cylinders to make corrections proportional to the error. The future change of error can be predicted: and the correction is then applied at a rate considerably greater than that at which the error is occurring and the servo motor is allowed to over-run the correct setting, after which a smaller correction is applied in the reverse direction. By this means the machine can be brought back into register very rapidly without "hunting".

Another Important Development

Sidelay register can be maintained with the Autotron by printing two transverse register lines set at an angle: the distance between these lines depends upon the transverse position of the web, and can be measured by normal scanning methods. A similar mechanism can be employed to keep the web edge in position for re-reeling or for feeding to other operations.

A further very important development by Crosfield of the Autotron principle is the Insetter, which has made it possible for the first time to register pre-printed webs with webs coming straight from rotaries, and to feed them together to cutters and folders. Employing this device, the daily "Paris Journal" has been able for the first time to publish issues with pages in full-colour photogravure.

Maintaining Ink Density

In the maintenance of ink density during colour printing Crosfield controls again have an important part to play. Two instruments have now been designed: the Idotron for rotary presses and the Inkatron for sheet-fed presses. A tiny change in ink density, either of a test patch or of a selected area of the print, is detected by a scanning photocell; when the operator has obtained his pass copy he adjusts to centre zero a meter calibrated in units of colour and the control will make the necessary correction to any deviation from

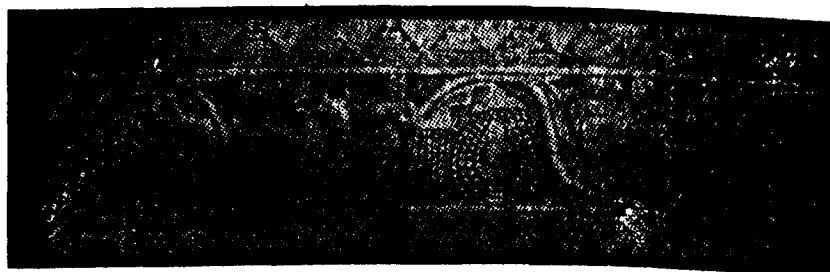


showmanship in words and pictures

COLOURFUL pictures on a cave wall, graceful hieroglyphs on a crumbling pillar—ideas handed down the centuries through a variety of significant symbols and media—all express, interpret and present the thoughts of some memorable civilization.

Today, the heritage of India's tradition and culture has gained a new meaning through her own printing skill. The printed word and picture offer a wider scope of expression through an eloquent range of typography and colour reproductions, opening the minds of people to the past, present and future.

With her own words and pictures, India impresses her ideas at home and abroad through the showmanship of good printing.



SHARHUT STUPA, BALUSTRADE RELIEF. Early 1 century B.C.

good printing
tells a
better story



Sree Saraswaty Press Ltd.

32 UPPER CIRCULAR ROAD, CALCUTTA

this density. In the Idotron, control is maintained by the addition of either ink, extender or solvent to the ink tank; in the Inkatron, the controls actually govern the amount of ink fed by the inking rollers.

Britain has also played a major part in the development of another important application of electronics to printing, that of colour scanning. In the many stages of colour printing from photographing the colour original, through the making of three or four separation plates, to the final reproduction, numerous inaccuracies occur due to the fact that neither the photographic filters nor the printing inks are the true colour they are assumed to be. In conventional engraving, these inaccuracies are eliminated by time-consuming hand operations, but it was suggested as much as 25 years ago that the problem could be solved by electronics.

Cause of Inaccuracies

Basically, the inaccuracies are due to the fact that, as each of the separation colours contains some proportion of the other colours, the result obtained on overprinting is well in excess of the colour density in the original. Here the application of feedback is of the greatest importance: the impulse from one photocell scanning one separation colour can be corrected by feeding back the impulses from the other two cells, so that the sum of the impulses never exceeds a fixed value.

Two British manufacturers are now making electronic colour scanners.

The Hunter-Penrose Autoscan is essentially a process camera: the copy, in the form of a coloured original, is scanned by a small spot of light, whose intensity is varied electronically according to the reflected colour density at that point. The light as it moves across the copy is then photographed through a separation filter to provide the appropriate negative.

By Cathode Ray Tube

The second British scanner is the Scantron, made by Crosfield. Here the light source is a scan pattern on a cathode ray tube, and the copy scanned comprises three separation negatives made by conventional means. The

intensity of the scanning spot is varied according to the signals received from photocells situated behind the three negatives, and appropriate separation positives are obtained by exposing film behind each negative in turn. Hunter-Penrose are now developing a second model, for use with coloured transparencies, which also employs a cathode ray tube as the source of feedback illumination.

Both these types of scanner, although they use only three colour filters or separation negatives, can be adjusted to provide four-colour sets if desired.

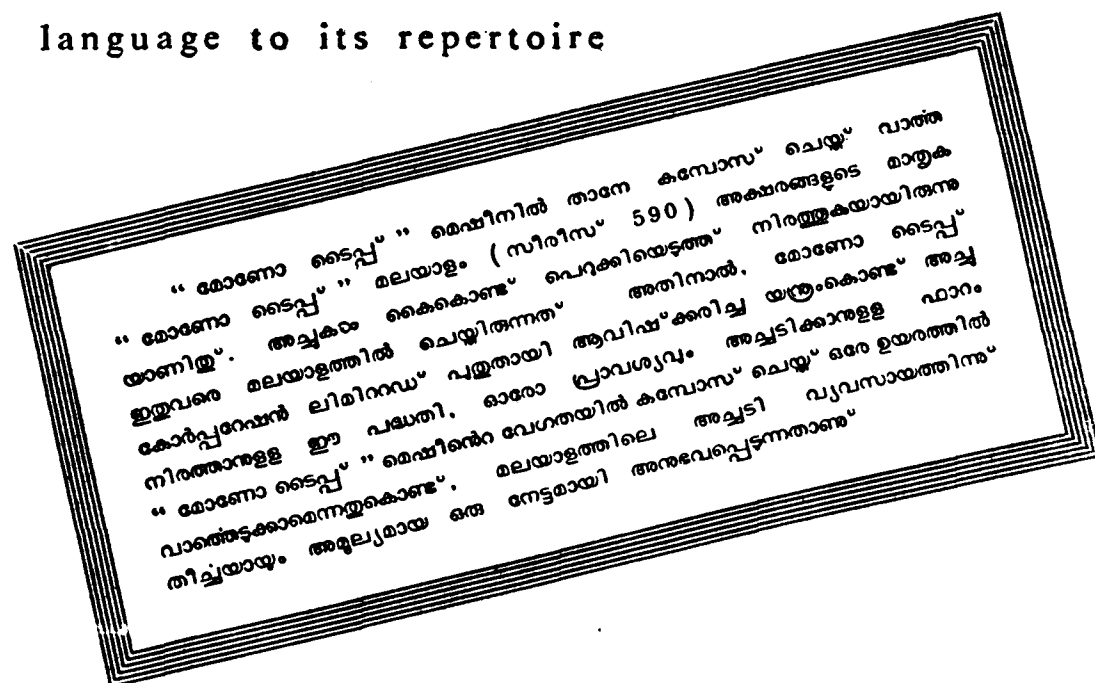
Another application of electronics to printing is in the electronic engraving machines. Here, as in colour scanners, the copy, whether coloured or black-and-white, is scanned by a travelling light spot, but the output from the electronic circuits is fed back not to the light source, but to a cutting stylus which engraves a plate ready for printing. In black-and-white work, corrections are applied to tones, and in colour work a set of three or four corrected separation plates can be produced. Although engraving machines are not produced in Britain, British engravers have played a pioneering part in their application and development.

The Photographer's Complaint

The well-known complaint of photographers that "it's all in the negative, but the print won't show it" is now on the way to being answered by electronics. E.M.I. Log Etronic printers and enlargers apply similar feedback correction to tone values in negatives to that applied by colour scanners and electronic engravers. The result is that, from a negative that will normally print only as shadows and highlights, it is possible to obtain a print in which all the detail is clearly visible. Although at the moment, the importance of this equipment to printing is only marginal, it is expected that further developments will be of growing importance.

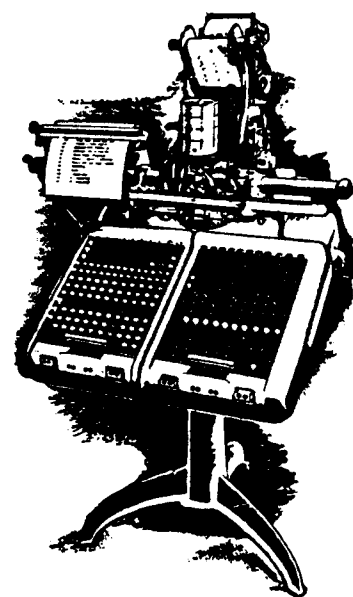
The devices described here have been some of the more outstanding examples of the application of electronics to printing, but there are many other cases in which electronic con-

MONOTYPE[®] adds yet another language to its repertoire



MALAYALAM

can now be composed and cast on Monotype composing machines in 8, 10 and 12. pt.



THE MONOTYPE CORPORATION LTD
 8, MISSION ROW EXTENSION
 CALCUTTA 1

* Registered Trade Mark

Branch Offices at: MADRAS — BOMBAY — DELHI — ALLAHABAD

trols have contributed greatly to the speed and efficiency of printers' machinery.

A Vital Part to Play

There is, for example, electronic control of press speed, as in the "Red Streak" manufactured by Linotype and Machinery Ltd.; the use of electronic counters, as in the slip-inserting machines made by Soag Machinery Company and Vacuumatic Ltd., which will insert slips of paper at any desired intervals into piles of paper; electronic control of guillotines such as the Furnival; electronic flash for process engravers; integrating light meters; and stroboscopic illumination for visual inspection of fast-moving webs.

For the future, there are reading machines

such as the Solartron reader, which (in its present stage of development) can scan a line of figures and reproduce them on an electric typewriter; combination of a device of this sort with a filmsetting machine such as the Monophoto could mean that it was possible to go direct from copy to a film-set text with only supervisory human intervention.

Electronic controls can play a vital part in enabling printing to keep up with the demands for ever greater speed and efficiency that modern conditions impose. With important pioneering experience in this field, British printing machine manufacturers will be able to keep in the forefront of all future developments. ★

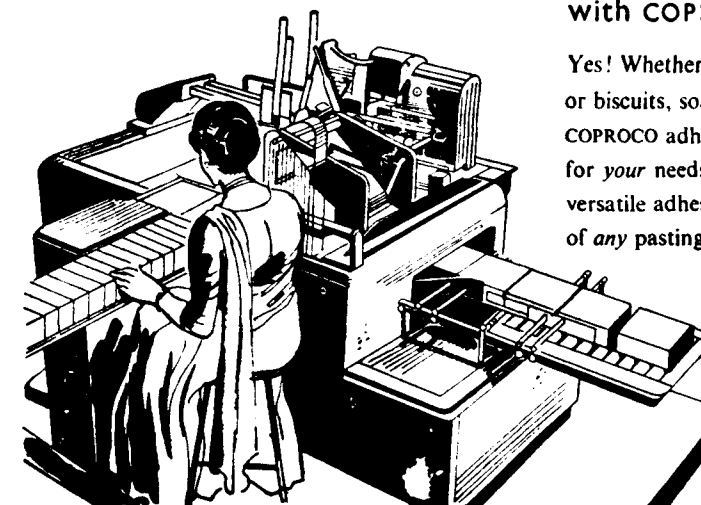
CALCUTTA PRESS PRIVATE LTD.

1, WELLINGTON SQUARE

CALCUTTA - 13

no pasting problem...

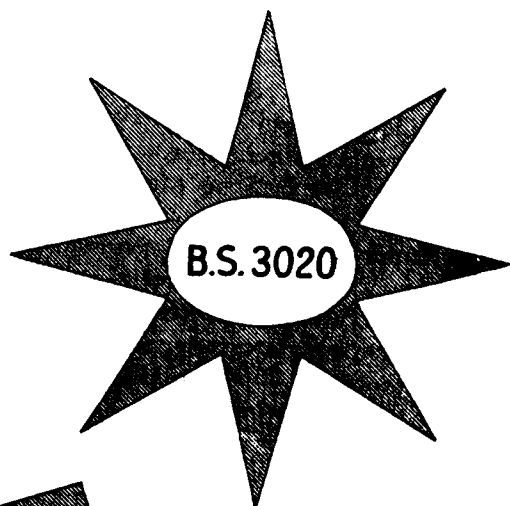
with COPROCO adhesives



Yes! Whether you manufacture books or biscuits, soap or sandals, you'll find a COPROCO adhesive that is just perfect for your needs. Choose COPROCO—the versatile adhesives that take care of any pasting job.

For further information
 please contact:
 CORN PRODUCTS CO. (INDIA)
 PRIVATE LIMITED
 Post Box 994, Bombay-1

**NEW
PROCESS
SERIES**



This new set of Process
Inks for Letterpress Four - Colour
Printing to B. S. 3020 is not introduced as a
replacement for the B. S. 1480 series, rather it is an addi-
tional and improved standard, in that the inks have greater
colour strength and particularly the Magenta and Cyan are
considerably brighter. These new inks may be printed in any
sequence as all have been made sufficiently transparent.
Whilst inks manufactured to B. S. 3020 are not intended as
gloss process inks, this series dries with more
finish than inks manufactured to
B. S. 1480 specification.

**GANGES
PRINTING INK FACTORY
PRIVATE LTD.**
CALCUTTA • BOMBAY • MADRAS
DELHI



PRINTING INDUSTRY IN INDIA

Paper read by Mr. V. S. R. Krishna, President, Vijayawada Master Printers Association, at the All India Federation of Master Printers' Conference held at Bangalore on 8th, 9th & 10th May, 1960.

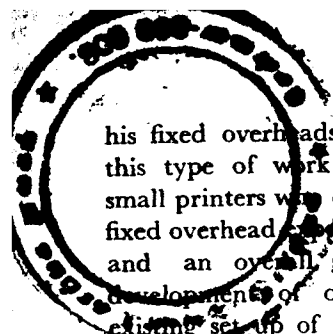
Like all our other major industries which are lagging behind in development and progress when compared with the advanced nations of the world viz., U. S. A., U. K. and Japan etc., our Indian Printing Industry also experiences the same phase. Lack of Governmental support and incentives, keen competition among the private entrepreneurs, severe price race and destructive rate cutting, can be ascribed to be the predominant factors and these hurdles are standing in the way of constructive progress and improvement, often proving detrimental to the individual private owners in the industry. Because of this a private enterpriser with limited financial resources has to run his unit on loss or often times close it if he cannot face the price-war. Big fish swallowing the small fish is the order of the day in the sense that the most sound and the stablest big printer just does the job at a lower rate than his co-printer in the field. Under the existing system only the fittest can survive giving no opportunity for the weaklings to exist. Lack of any standardised piece or job rates lead to non-uniform job rates and this gives chance to the individual customer to choose only that printer who quotes lowest, irrespective and unmindful of the quality of work.

It is highly commendable and worthy of appreciation that the Government of India has in the recent years at least recognised printing as an industry, and instituted awards and merit certificates for the best quality printers of both Governmental and private work under the able guidance and leadership of Dr. B. V. Keskar, Union Minister for Information and Broadcasting, Government of India, New

Delhi. But at the same time it is rather surprising and distressing to note that the policies pursued by the different state Governments is worthy of bitter criticism and severe condemnation for the useless and destructive means they are devising and adopting for the fulfilment of their ends. The Rates Manual specified and issued by the Governments itself clearly lays down estimated standardised printing rates for the different volumes, sizes and types of printing work, both Governmental and Private to be undertaken and entertained within the state limits. But in offering quotations and accepting tenders the Government never adopts these rates often preferring the lowest applicant for the tender who is prepared to do the job at the lowest cost. Why should then the Government have the Rates Manual and then not follow it? Whether it is for favour or just for the sake of deceiving the public is a question of conjecture. The Government should be alert and no longer play *hide and seek* with printers. It should abandon such policies often proving detrimental and perilous to the industry at large.

Under the existing circumstances of keen rate cutting and price-war for undertaking the printing work, only such big printers who are very financially sound and who do not completely rely on this industry alone for their subsistence are only able to get business thus giving no room for an average individual printer with limited backing economic stability whose main source of income is the job printing alone. The former can offer to accomplish the job at a lower rate because he is satisfied if he can get his available overheads not caring for the recovery of

JUNE 1960



178515

his fixed overheads and the undertaking of this type of work is an uphill task for the small printers who cannot afford to forego his fixed overhead expenditure. For the success and an overall growth and homogeneous development of our printing industry the existing set-up of things should soon cease to exist giving room for organised and high quality printing to survive just like in the case of all the advanced nations of the world, thus giving scope for the survival of both the small scale private printer as well as the big printer in the field with close amity, adjustment, understanding and co-operation in between them. The improvements that can be affected to develop the industry can be now studied.

First and foremost the Government should strictly adhere to the estimated standardised rates set up in the Rates Manual. In no case favouritism and price-cutting by individual entrepreneurs should be allowed, in offering and accepting tenders for Government printing work. Preference should be given to the small printing establishments along with the big, in proportion to their capacity.

The next measure would be for all the individual Small and medium sized printers working with limited resources and equipment to form into an Union or an Association, clearly laying down their rates for different types of work specified by them and also for their speedy execution.

The State Governments should also entrust their printing work to the private printers only on the basis of the rates set up in the Rates Manual. The same should be the case with the Central Government also. The huge printing work that is to be undertaken by the Central Government in the different Indian languages for various purposes like the Five Year Plan publicity and various other Governmental activities should not be entrusted to a

single press in a huge metropolis like Calcutta or Bombay, but to the local printers in the respective states with the respective languages. Only then can there be satisfaction among the printers in these languages, but the work also will be efficient and with practically no errors. Comparing and Proof-Reading also will be perfect and the language also palatable to the regional people.

The workers in our printing units should be all round so that the work need not be stuck up when a particular worker is absent. For this purpose workers should be trained in all activities (sections) like composing, proof-reading, inking, operating the treadle and the like; printing schools should be soon set up with this objective all over the country.

Due recognition must be given in the Indian Printing Industry and adequate place must be given in the 3rd Five Year Plan for its development and manifold progress. Indian personnel must be sent to the foreign countries to study the advanced techniques in superior Quality printing and to implement the same in India. Modern and up-to-date printing machinery should be installed in our printing units throughout till such date that India could be able to produce such machinery for itself.

If all these measures are undertaken and successfully implemented coupled with the co-operation of the private small scale and big printers in the different local areas throughout the length and breadth of our country there is the least doubt the India's Printing Industry will soon reach the world standards and will it not be another feather in our turban, especially when we are making rapid and unprecedented strides in economic and industrial development? If this is accomplished the day is not far off when Indian printing will be the foremost in the world. Such an era should soon be ushered in by hard work and self confidence among the printers. ★



The Cover of this issue is printed on
GATEWAY PAPER, "Proven" White Art

Double Crown, 45 lb., 500 sheets



Phone :

Grams: "GUNARAYGO"

Printers' Engineers & Providers

Gunvantray & Company

Importers & Dealers in :

LETTER PRESS, LITHO, OFFSET, PROCESS
BINDING MACHINERIES, MATERIALS AND
SPARE PARTS

CRESCENT CHAMBERS, 1st FLOOR, ROOM No. 2, TAMARIND LANE,
FORT, BOMBAY-1

*

Head Office:—AHMEDABAD-1

FOR BOOKS

IN TAMIL

Contact

VANATHI PATHIPAGAM

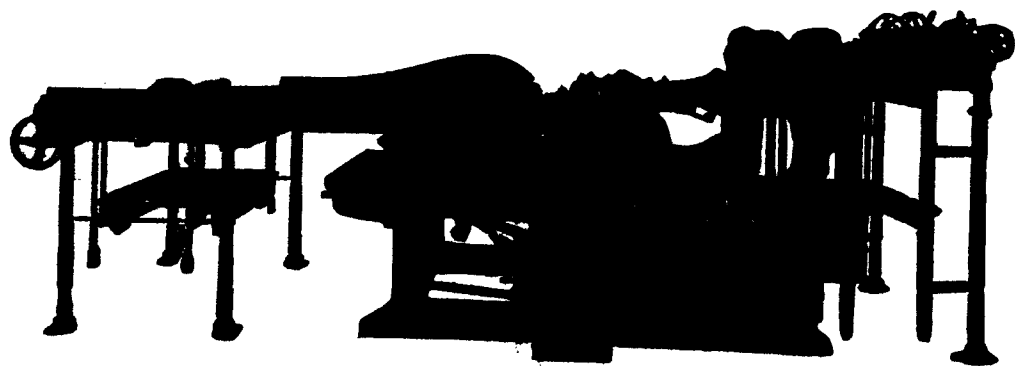
82/11, PONDIBAZAAR

MADRAS-17

JUNE 1960

11

Every L&M Centurette



*is designed and built to
combine high quality printing
with maximum production,
and can be equipped for
hand or automatic feeding*

LINOTYPE AND MACHINERY LIMITED

*Sales
and
Service*

(Incorporated in England)

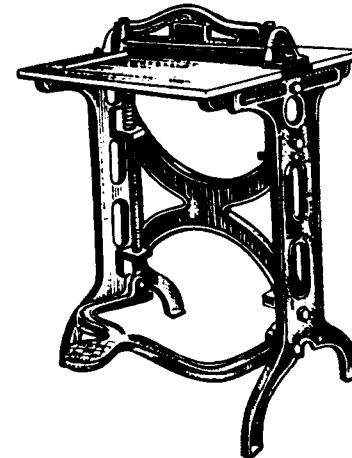
14 Madan Street, Calcutta 13

11-13 Horniman Circle, Fort, Bombay 1

6 Club House Road, Mount Road, Madras 2

TREADLE PERFORATOR

Size 18 inches

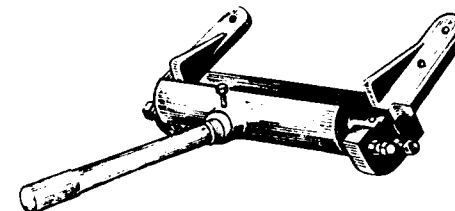


This is designed for efficient and neat working. All components are accurately machined. The machine is fitted with tempered English pins.

The tables of highly polished wood are provided with side and back guages.

CALENDAR RIMMING MACHINE

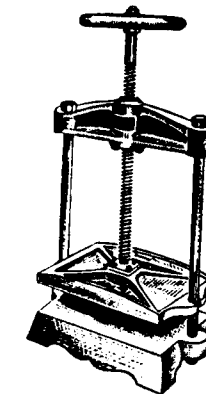
Sizes 18 and 24 inches



This machine is useful to Printers, Show Card and Calendar Makers etc. for fixing Metal Rims and Suspenders to Calendars, Maps etc. The Machine makes single and double folds.

HARD PRESS

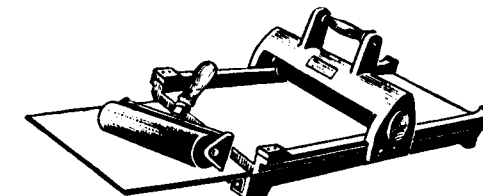
Sizes 12" x 18" and 15" x 20"



This is very essential in any Binding shop and Printing Press. The spindle is effectively cut to exert pressure. Platen and Bed are heavy and strong.

"EVEREST" PROOF PRESS

Size of Bed 13" x 32" Size of Galley 12" x 24"



The Ball Bearing Proof press, with Rubber Roller is simple in design, easy to operate and built to precision standards. Capable of sharp, clear impressions of heavy forms, a single line or an unsupported character, the machine is inexpensive to install and simple to operate.

Made by

THE MADRAS TYPE FOUNDRY

38, JONES STREET

::

MADRAS - 1

Our Latest New Designs of TAMIL & TELUGU TYPES

14 Pt. Avvai Thin Roman

8 to 14 Pts.

அகர முதல எழுத்து எல்லாம்;
ஆதிபகவன் முதற்றே உலகு.

14 Pt. Sigamani Antique

8 to 36 Pts.

அகர முதல எழுத்து எல்லாம்;
ஆதிபகவன் முதற்றே உலகு.

14 Pt. Avvai Roman

6 to 18 Pts.

அகர முதல எழுத்து எல்லாம்;
ஆதிபகவன் முதற்றே உலகு.

14 Pt. Sigamani Bold

10 to 36 Pts.

அகர முதல எழுத்து எல்லாம்;
ஆதிபகவன் முதற்றே உலகு.

14 Pt. Avvai Antique

8 to 36 Pts.

அகர முதல எழுத்து எல்லாம்;
ஆதிபகவன் முதற்றே உலகு.

24 Pt. Sigamani Italic

10 to 36 Pts.

அகர முதல எழுத்
து எல்லாம் ஆதி

14 Pt. Avvai Condensed

10 to 36 Pts.

அகர முதல எழுத்து எல்லாம்;
ஆதிபகவன் முதற்றே உலகு.

14 Pt. Manickam Telugu Roman

10 to 18 Pts.

సరస్వతీ నమస్తుభ్యం వరదే కామరూపిణి
విద్యారంభం కరిష్యామి సిద్ధిర్భవతుమే సదా।

14 Pt. Avvai Italic

10 to 14 Pts.

அகர முதல எழுத்து எல்லாம்;
ஆதிபகவன் முதற்றே உலகு.

14 Pt. Manickam Telugu Italic

10 to 24 Pts.

సరస్వతీ నమస్తుభ్యం వరదే కామ
రూపిణి విద్యారంభం కరిష్యామి సిద్ధి

14 Pt. Sigamani Roman

8 to 24 Pts.

அகர முதல எழுத்து எல்லாம்;
ஆதிபகவன் முதற்றே உலகு.

14 Pt. Manickam Telugu Antique

10 to 18 Pts.

సరస్వతీ నమస్తుభ్యం వరదే కామరూపిణి విద్యా
రంభం కరిష్యామి సిద్ధిర్భవతుమే సదా। వద్యవ్రత

P. O. No. 452

GRAMS "NELSONCO"

NELSON & CO.,

Estd. 1916

(THE FINE-ART TYPE FOUNDRY)

Office :

62, SAMI PILLAI STREET
CHOOLOAI MADRAS-7
PHONE : 2722

Factory :

1, NELSON MANICKA MUDALIAR ROAD
AMINJIKARAI MADRAS-29
PHONE : 61736

Edited and Published by S. K. Thamba, for the Indian Federation of Printing Technologists, Madras-1
and Printed by R. Surianarayanan at Gnanodaya Press, 11, Anderson Street, Madras-1