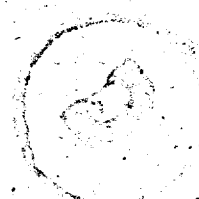


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Vol. V

NOVEMBER 1957

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அன்புடையீர்,

நிகழும் ஏவினம்பினு தைவீ 25-க்குச் சரியான  
1958-ம் ஆண்டு பிப்ரவரியில் செக்கிரவாரம் காலை 8-45  
மணிக்குமேல் 10-மணிக்குள்ளாக மீன லக்கினத்தில்

எனது செல்வன்  
ஸ்ரீ குமரவேலவனுக்கும்  
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ஸ்ரீ தெய்வயானைக்கும்

சென்னை சூலை, ரொட்டிகிடங்கு திருவேங்கட முதலி  
தேருவு, 1-16-வது எண்ணுள்ள எனது இல்லத்தில் நடக்  
கும் திருமணத்திற்கும், அன்று மாலை நடைபெறும்  
திருவிதி புறப்பாட்டிற்கும், தொண்டர்கள் இஷ்டஜன  
குடும்ப சகிதம் விஜயஞ்செய்து உயரானந்தக் காட்  
சியை கண்கூடாகக் கண்டு இதம்பெற வேண்டுகின்ற

தொண்டர்கள் அன்பன்  
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இந்த காவேரி ஸ்கிரிப்ட் எழுத்துக்கள் 24, 18, 14, 12 பைண்ட் தொழில்நுட்பம்.

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## Import Policy and the Printers' Plight

The drastic import restrictions have come at a time when the printers are just modernising their plants and improving the standard in a par with the West.

While exercising our co-operation with the Government, we can postpone the modernising but we cannot get on without essential spare parts and certain special requirements which are not available in this country. One such is the sensitive materials of the Graphic Arts section of the Industry.

The Photo and Graphic Trade got a cut in imports to 50% from July 1956. It hit them hard. They did not complain, since they wanted to co-operate with the Government and, tightened their belts. This was followed by a no-import-policy for three months for everyone in July-September 1957. There was no use of complaining. The stocks had come down in the Photo and Graphic Trade to almost nil. The trade was expecting a fair deal from the Government just as the cine trade with atleast a 60% quota.

It was a shock—the most unpleasant shock that the trade got when a 7½% quota was announced for sensitive materials with the ceiling on the top of it.

We are not surprised that the Government fixed 92½% leaving only the skin of 7½%. The Photo and Graphic Trade deserve only that much if it was done because they were not united, and the Government did it like a benevolent father to point out to the trade that 'union is strength'. The purpose is served. The trade was woken up with a shock from their very complacent sleeping mood. They are united now. The Government has achieved its purpose. It is now for the Government to do the needful to see that the Trade does not



Sri G. K. Vale, President of the Association delivering the Presidential address of the conference.

suffer. Within a few days the South Indian Photographic & Allied Trades have formed themselves into a very strong Association and have appraised the Chief Controller of Exports & Imports, Mr. S. N. Belgrami of the very grave situation through their Memorandum and deputation.

The statistics put forward by the Association is, in our opinion, only a very conservative estimate of the un-employment that is going to happen. Four lakhs of people are bread-winners of this trade out of 20 lakhs of Indian citizens.

Speaking of the printing trade, it is well known that modern printing mainly based on Photo-mechanical reproduction. If the cut remains, the photo-mechanical reproduction will become impossible and many printers will go out of job as an immediate consequence. The resultant un-employment will not be 4 lakhs but tens of lakhs in the printing trade.

By axing the import of sensitive material, the Government have, without knowing it, axed the backbone of the printing trade. This cut affects the printing trade more than the Photo and Graphic Trades.

We are happy that Governing Council of the All India Federation of Master Printers and the Photo and Graphic Trades have appraised the Government of the grave situation. The cine trade has a very strong body in their association and their representations have produced a quota of 60%. We understand that the Photo and Graphic Trade have been promised immediate relief by the Chief Controller and also full quota in the near future.

After-all, the needs of the trade is so meagre, only to the tune of 1 to 1½ crores a year for the whole of India.

The Government will only be doing justice in taking the Association into their confidence and take their recommendations in issuing licences to bonafide traders only in the Photo and Graphic trades.

The Government should review their policy in issuing licences outside the trade. Sensitive materials are a class by themselves. They deteriorate quickly. They cannot be thrown about anywhere. They have to be stored carefully in controlled conditions of humidity and temperature. *They are not like hardware or machinery* which can be kept anywhere and stored for any length of time. If these materials are imported by people who do not know anything about them and store them anywhere they like, not knowing the serious consequences, *they will get spoiled in a few months.* They will then come out into the market at double or triple the cost and the ignorant and the needy will buy them and waste their money. The result is a total loss to the nation.

We are certain that our democratic Government will see that proper justice is done to the trade, and consequently to the Printing Trade by giving them immediate relief by issue of licence for Sensitive materials *to tide over the grave crisis.*

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# Stereotyping

## PAST PRESENT AND FUTURE

By JOHN FRYD

MANY local newspapers still rely—as do the majority of smaller printers—on flat-bed machines, printing directly from the forme. For all of them, except perhaps a few with very limited circulations, the advantages of quicker printing by rotary are obvious enough. The disadvantages, alas, are equally apparent—firstly the cost of installing a rotary press (especially if the printer is unable to gear the rest of his production economically to rotary); secondly, the necessity of installing a foundry for the production of the necessary curved stereo plates.

For, though stereotyping was conceived and in use for at least 150 years before it was applied to rotary printing, the vast majority of flat-bed printers rely (and that as rarely as possible) on the trade houses for any stereos they may require.

For any kind of letterpress printing, duplicate plates are really essential for long run work because of the economy of printing two or four up, and for repeating jobs (such as book work) because they allow type to be released: but the predominance of the small man in the printing industry means that the general picture of flat-bed letterpress is one of direct printing from type (though of course this does not apply to long-run work many larger firms still relying on flat-bed machines.)

With rotary printing there is—or has been up to very recently—no choice about it.

Since metal type and conventional blocks can only be set up flat, rotary printing has necessarily required either stereos or electros—the latter normally being used for the better quality work and for the fine screen.

(It should be noted that in post-war years four separate developments—electronic engraving, collodial plates, the quick powderless Dow-etch process for production of very thin plates of magnesium or zinc, and the nylon plate—have made possible the production of curved originals which can be fitted to a cylinder. Thus today rotary printing without stereos or electros is now possible. But such an original, if it includes copy, requires the previous setting of the typematter by some means of another, though it may be by "photosetting" instead of metal type.)

### Curved stereo

The production of a curved metal stereo is, in its essentials, the simplest form of copying. Nowadays, as a rule, a sheet of coated dry-fong is faced on to the forme, inserted in a heated moulding press. After a few minutes' pressure the moulded fong matrix is dried and curved, then placed in the curved casting box. The metal is poured in and the plate cast, to be removed for the necessary finishing processes. The disadvantages of stereos and their inferiority to electros arise, firstly from the shrinkage due to loss of moisture in the treatment of the fong, so that the matrix and thus the resulting

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stereo is invariably smaller than the original forme; secondly, from variations in the thickness of the plate due to uneven cooling of the metal, which can perhaps nearly but not completely, be controlled.

Nevertheless, for all cheaper classes of printing and, of course, for newspaper work, the stereo seems to be the ideal medium because of its cheapness and simplicity. Since the metal is recovered after use, almost the only cost of materials is represented by the remarkably low-priced sheets of flong used for the matrices.

Though the foundry craftsmen are well paid, the number of castings he can make in a given period is considerable and labour cost per unit of production is therefore low. It is therefore difficult to see that any other process will be able to produce curved plates less expensively than stereotyping, provided always for any particular foundry that there is a constant flow of work to keep both the craftsmen and the comparatively expensive foundry equipment steadily employed.

Not unnaturally, there is a tendency in these days for manufacturers of stereotyping equipment to produce machines which are as inexpensive as possible in labour cost. At the recent Graphic 57 exhibition, at Lausanne, there was on show, for instance, the Novoplate (Koenig and Bauer), a one-man caster outfit designed to produce automatically and speedily curved stereotypes for the smaller newspaper, with every means of saving fatigue included in order that it should be capable of operation by a single craftsman not merely on demonstration but in production.

Another tendency clearly evident at Lausanne was that towards the greater use in Continental countries of plastic and rubber plates made by the stereotyping process for newspaper and other forms of printing. Many of the moulding presses I saw could be used for moulding phenol plastic matrices for the making of thermoplastic or rubber plates as well as for moulding flong matrices for metal plates. Indeed most of those which were not two-purpose presses were for plastic production, not metal.

#### Rubber and plastics

The advantages of rubber and plastic plates for the small printer in particular are obvious enough. Though metal stereotypes can be cast flat and then bent while hot to the curvature required for the rotary cylinder, the process is not an easy one and is liable to set up stresses in the metal which may result in difficulties on the machine or imperfections in printing. Normally for rotary work the metal stereotypes will be cast curved by Autoplate or other curved box casting machine or hand casting box. The printer will also need a separate casting box if he also requires flat stereotypes for his flat-bed machines.

Rubber and plastic plates on the other hand can be produced flat and, because of their flexibility and thinness, can be easily curved—the rubber more easily, of course, than the plastic which requires special treatment to make it malleable.

Where there is sufficient demand for the curved stereotypes to justify the employment of the Autoplate or other equipment to achieve the same purpose, the use of metal is not at all likely to be out-moded, though even that statement must be made with some qualification.

Rubber and plastic are capable of high quality re-production and the harder plastic, in particular, can be used for work with fairly

(Continued on page 9)

#### Technical Assistance for offset Printers

Messrs. Indo European Machinery Co. Private Ltd., Sambava Chambers, Sir P. M. Road, Fort, Bombay 1, in collaboration with their Principals Messrs. Roland Offsetmaschinenfabrik, Faber & Schleicher AG, Offenbach am Main and Messrs. Hoh and Hahne Hohlux GmbH, Offenbach Main, Germany, have arranged to engage an experienced photo litho technician in order to give assistance and training to their various customers throughout India. The technician has already arrived and will be assigned with different customers from time to time. It is also proposed to set up their reproduction centre in Bombay at a later date as soon as the equipments required for the purpose could be imported. This centre in addition to providing first class production jobs will be used for training of Indian technicians. Further information can be had from Indo-European Machinery Co. Private Ltd., on request.

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## STEREOTYPING

(Continued from page 7)

fine detail. Moreover, apart from economies in the making of the plates, rubber and plastic can—because they are so much lighter than metal and the plates are thinner than metal stereos—be carried by much lighter cylinders on rotary machines. The consequences of this are the possibility of less heavy machines with less wear, and further the advantage of easy removability of the cylinder enabling it to be carried out while the machine is running on another job.

### Inexperience ?

It may therefore be that in the long run the use of plastic "stereos" will result even in the replacement of the giant newspaper presses of today by considerably less unwieldy machines.

Certainly for the smaller newspaper, plastic plates seem to offer the prospect, as they already do to many other classes of printer of inexpensive, efficient and speedy rotary production.

And here again it is necessary to emphasise one notable aspect of continental printing as evidenced at Lausanne. That is the growing use of colour in newspaper and other work printed from stereotypes. In colour work, especially with four colour halftones exactness is required. Every dot in each one of a set of colour plates must fit the complementary dots on the other three plates. No doubt the future prospect is of plastic matrices and plastic plates enabling this to be achieved, but with present difficulty arises, as I have mentioned previously, from the shrinkage of the flog as moisture is lost. Colour work can only be produced if the register of the original plates is maintained in the duplicates by ensuring an exact uniformity of shrinkage in the flog matrices.

This requires each sheet of flog to have precisely the same moisture content to start with and to be moulded in a press in which automatically ensures that each is treated at exactly the same temperature, with exactly the same pressure and for exactly the same time.

### At Lausanne

There were a number of presses on view at

Lausanne with the necessary electrically operated controls to ensure such a result and the consequence was evident in the quality of some of the newsprint colour printing which was on view on one stand.

The results shown were a testimony to the uniformity of the flog employed and some tributes have been paid to the qualities of this "Continental" flog. However, the colour printing in question was certainly worthy of comment here, for its excellence was undoubtedly the result primarily of care in the making of the stereo plates.

By the time we get colour television, the newspaper which is not prepared to use colour will be as dead as the dodo. Proprietors will shut their eyes to what is happening on the Continent at their peril (as will other printers when the Common Market comes into force).

Incidentally, it will also be at the peril of their employees and I find a growing realisation among union leaders, who are keeping up with the times, that their unions must not stand in the way of, but must encourage, the wider use of colour in publications.

The stereotyping trade and its suppliers, both of equipment and materials, are already able to meet materials, are already able to meet what demands the industry seems likely to make of them in this direction. Indeed the danger appears to be of conservation on the part of the other sections of the industry. The capacity of the stereotyping section to keep up with the times and to meet future demands is indicated by the progress which has been made since the 1920s, for it is as comparatively lately as that, that the old "mangle" for wet flog moulding was replaced by the heated press for the moulding of dry flog, which—with its many developments and improvements—is in general use today.

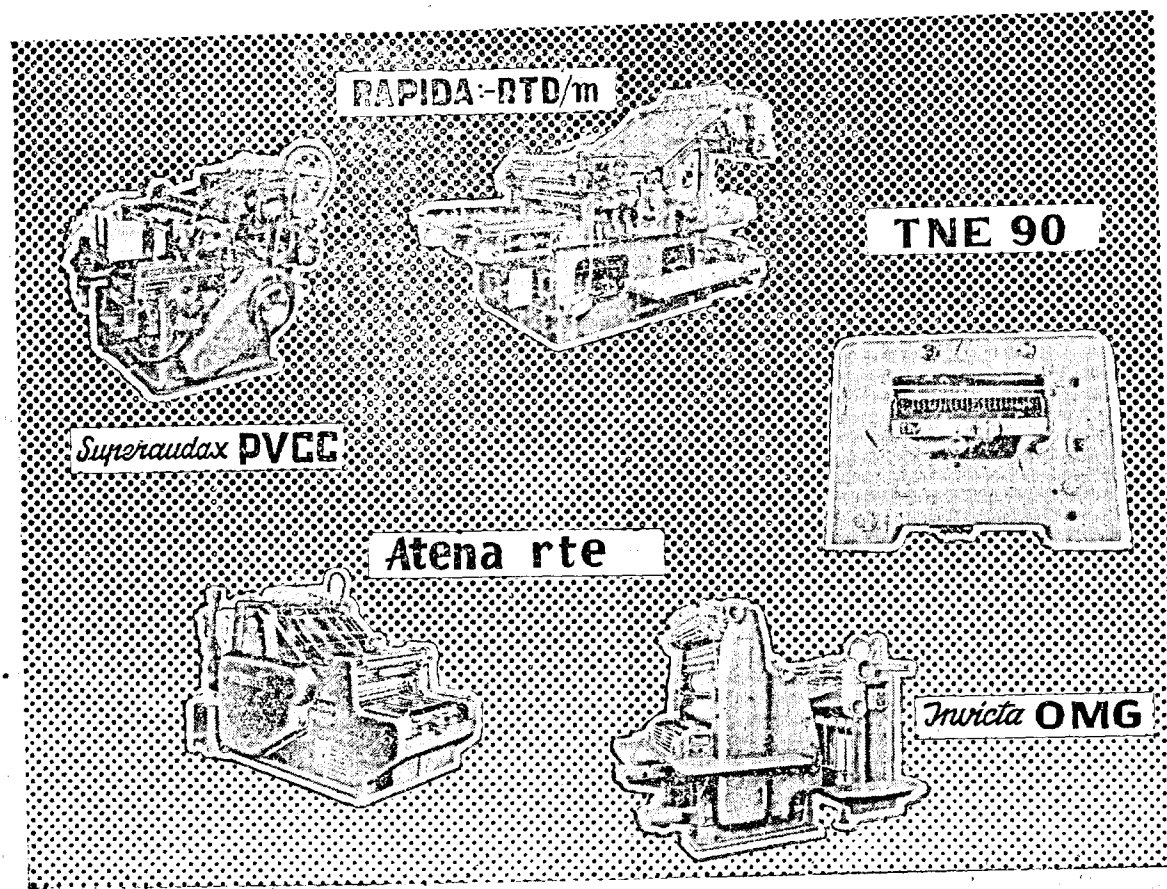
### Further improvement

The development of the twelve years since the war have included the tremendous progress made in the production of rubber and plastic plates (as, with electros, they have seen the development of the silversprayed plastic

(Continued on page 11)

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I have pleasure in announcing that our Library would start functioning from January 1958. Members are requested to enrol themselves as members of the Library by remitting the refundable deposit of Rs. 20/- only and obtain the Library tickets, from the Federation's office on any of the above mentioned days.

We take pleasure in announcing that Master Printers, and others connected with the Printing Industry can also become members of our Library by depositing Rs. 20/- (Rupees twenty) besides paying an annual Library subscription

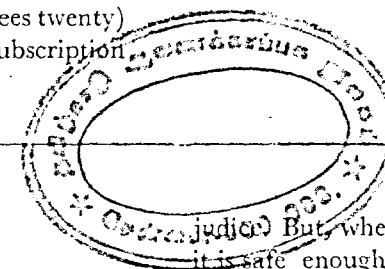
of Rs. 24/- (Rupees Twenty four) per year.

The detail rules and regulations are furnished herein and also the list of books available at the present.

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S. SRINIVASA RAO L.P.T.,  
Hony. Secretary



### STEREOTYPING

(Continued from page 9)

mould, creating the same sort of revolution in the trade.) If such advances have taken place in stereotyping within the last thirty-five years and within the last twelve years, there is little reason to suppose that equally revolutionary changes may not take place to still further improve production or quality of plates in the future.

I confess to what is perhaps no more than a prejudice in favour of letterpress—though I would claim that its greater clarity of impression is fundamental, beyond rivalry by any other process and sufficient to justify the pre-

But, whether that is so or not, I think it is safe enough to conclude that, so long as letterpress does remain the dominating form of printing for newspapers, magazines and books, the stereotyping process will-despite all inventors and despite all pressimists--continue to have its essential and so economical part to play in the printing industry.

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Hony. Secretary & Librarian

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Ink has always kept ahead of Rollers, but now the lead is shortening as.....

## ROLLER DEVELOPMENT GOES ON AND ON

By DUKE, P.Sc., A.R.I.C.

FOR MANY YEARS glue-glycerine rollers have been used almost exclusively on letterpress machines. In fact, many printer still do use them and say that with no other printing roller offered to them can they produce prints of equal quality.

To-day, when fast running machines are used, and when production must be speeded in every way if the demand for printed matter is to be satisfied, the claims of other rollers must be considered.

The composition roller has well-known shortcomings. On the other hand, it has outstanding qualities which chemists and technologists have been trying to simulate with other basic materials.

### The essential qualities

Softness is essential in a printing roller. The composition roller possesses this quality. In figures recorded by the Shore gauge used in the rubber industry the average figure for composition is 10°-15°. This softness is necessary because make-ready is often imperfect, case type is sometimes worn, and frequently machine wear has taken place. Composition rollers have 'tack'. This has proved to be a particularly elusive property to define. As understood by the author, it is the ability of the roller to pick up the required quantity of ink from the duct and transfer the same quantity freely to the forme. Finally, ink does not dry on composition rollers. Being gel of which one constituent is water, glue-glycerine composition does not absorb oil and therefore ink pigment deficient in vehicle does not build up on the roller surface.

Summarising the three essential properties of composition rollers which must be matched in any other material considered for roller covering are: softness, good 'tack', and absence of ink drying. In addition, if rollers of other basic materials are to be saleable in competition with composition, they must be free from the defects unavoidable in rollers of the latter type.

In practice it has been far easier to overcome the disadvantages of composition than it has been to reproduce its attributes. As previously stated, composition is a gel of which one constituent is water. As far as the author is aware, no development with materials including water as a constituent has ever taken place since the advent of composition. Consequently, all the more recently developed roller compounds have shown no tendency to harden in cold weather, nor to swell in humid conditions, nor to melt at high temperatures.

### The development of rubber coverings

As it is probable that more research has been carried out with the use of rubber and rubberlike materials for roller coverings than with any other base material, it is therefore the history of this development which will here be described at some length. Mention will also be made of plastic materials, which have more recently been the subject of considerable work.

During the period of roller development other important advances have been made, particularly with regard to inks. The drying period required for letter-press inks has been considerably shortened. This ink development

has retarded the provision of more satisfactory rollers. It has been in the nature of a race in which ink developments have led throughout. However, there have been signs recently that rollers are being made which will satisfactorily roll the most highly developed letterpress inks.

Natural rubber was used to produce the first rubber printing rollers; indeed, oil resistant synthetic rubber was not available in commercial quantities until the middle of the thirties. Natural rubber can only be softened to a certain degree (by the addition of oils and other plasticizers) and a Shore figure of 25° is the very lowest hardness obtainable. Despite this hardness, natural rubber rollers were used commercially to some small extent, and, provided only linseed oil varnish based on inks were used, success was obtained. But the success was limited by the fact that the rollers rapidly softened due to absorption of the varnish and also became sticky on the surface.

The author knows of a few printers who were still specifying natural rubber rollers as late as 1949. In the field of newsprint the largest single type of roller covering in use to-day is made from natural rubber. These rollers swell considerably due to absorption of ink vehicle. This condition is tolerated, but it means of course that constant adjustments are necessary to the roller settings.

On offset lithographic presses natural rubber rollers were used for many years in the dampening system. These have now been almost entirely replaced by oil resistant synthetic rubber coverings which do not swell when in contact with oil carried back up the dampening system.

The first neoprene rollers designed for use in letterpress printing were offered commercially in between 1937-1939. Neoprene, which emanated from the Du Pont organization in America, was the first oil resistant synthetic rubber to be offered commercially in the U. S. A. Rubber technologists quickly became aware of its possible application in the field of rollers. It could be softened to a greater extent than natural rubber, and mixings have been claimed with Shore hardnesses

between 15° to 20°.

Test results soon showed that letterpress rollers covered with neoprene were largely unaffected by printing ink vehicles, and so did not swell in use to any appreciable extent. However, the resistance to cutting by rules, and abrasion due to contact with oscillating rider rollers, was a serious disadvantage. Modifications were made in an endeavour to overcome these faults, and neoprene rollers were re-introduced to the trade in the immediate post-war years. At this time, however the very quick-setting inks containing a percentage of light mineral oil had become established, and it was these inks which brought about the final condemnation of neoprene rollers for letterpress.

Again as with natural rubber, neoprene rollers have become well established in certain trades, and it can be said that a large percentage of offset lithographic machines are equipped with neoprene inking and distributing rollers. Until very recently, faster drying inks have not been used in this trade, though these inks are now becoming very popular, and have necessitated an alteration to the roller covering materials.

At about the same time as neoprene became available from the U. S. A., an oil resistant rubber of the nitrile type became available from Germany. However, no material was undertaken at that time due to the easier processibility of neoprene. Nitrile rubbers improved during the war and became available in a number of different grades under trade names such as Perbunan, Hycar, Paracril, Polysar Chemigum, in the years immediately after the war.

As neoprene was not proving successful, rollers were made from nitrile rubber about 1948, and were promptly tested. It quickly became obvious that the rollers were capable of rolling modern inks without any drying on the roller, and in this respect they were a great advance on neoprene rollers. It was, however, obvious that these rollers were not going to be easily washed up. Development continued and rollers made from this type of base material are

being marketed in quite large quantities. The rollers give considerable satisfaction in most respect, but are prone to retain colour and do not wash cleanly and quickly. This colour absorption causes condemnation, particularly when trichromatic work is undertaken and it is essential to match colour proofs precisely. The colour can be cleaned from this type of roller, but it is a lengthy business which many printers will not tolerate.

Only one other family of oil resistant synthetic rubbers is available to the rubber chemist, the polysulphide groups, which is marketed under the trade name of Thiokol. These rubbers have extreme oil resistance, but for this very reason are extremely difficult to process. Further, Thiokol cannot be softened to the extent that makes it possible to use it for the whole flesh of the roller covering. It could only form a thick veneer on the surface. A further disadvantage is the most obnoxious and pungent odour associated with these materials.

#### **Resilience and durability combined**

Referring to veneers, it would be as well to mention that many rollers for use by the printing industry are made by this method. It is normal to bond rubber to the stock by first applying a layer of ebonite about one-eighth inch thick. A very soft rubber is then added and the diameter built up to within one-sixteenth inch of final size. An outer coating of harder rubber is then applied and brings the roller to the required size. The advantage of this veneered construction is that a fairly hard, tough layer provides a working surface which has good resistance to abrasion and rubbing, and which will grind to a reasonably smooth surface.

It is reasonable to infer from what has already been said that a rubber roller which satisfactorily meets all the printers' requirements has not yet been developed. All rubber rollers have to be ground, and this presents a further disadvantage to letterpress printers due to the fact that no ground surface can be as smooth as a cast surface, and this may become apparent in the reproduction of solid areas of colour.

#### **Modern synthetic materials**

Let us turn now to other new materials which are being considered for the manufacture of printing rollers. First: plasticized polyvinyl chloride. Already several different makes of P. V. C. roller have appeared on the market, or have been announced as due to appear in the near future.

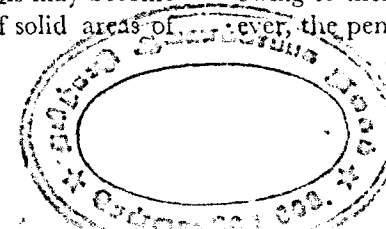
Manufacturers considering P.V.C. as a basic materials for rollers start with a distinct advantage. P.V.C. is inert and itself is quite unaffected by the ingredients of printing inks as used to-day. It is, however a rigid thermoplastic unless it is compounded with a plasticizer. It will be remembered that shortly after the war P.V.C. sheeting was available, and it will also be remembered that this sheeting when used for curtains and similar articles was rather prone to cracking. This was due to leaching out of the plasticizer. The same was true of early printing rollers, and this unfortunate start caused a good deal of pre-judgment of rollers made from P. V. C. Happily, the problem has been completely overcome. Now, rollers for letterpress printing are becoming available which have all the attributes of the composition roller, but which are not affected by varying conditions of humidity and temperature, and which do have 'tack', softness equal to composition, and on which ink does not dry. The rollers are cast and not ground on the surface, and therefore produce good solid colour areas.

Another type of cast roller which is being marketed is based on the reaction between polyester and isocyanate. It may be anticipated that the price of this roller will fall as more manufacturing experience is gained. If this does not happen, the market for it will be considerably restricted.

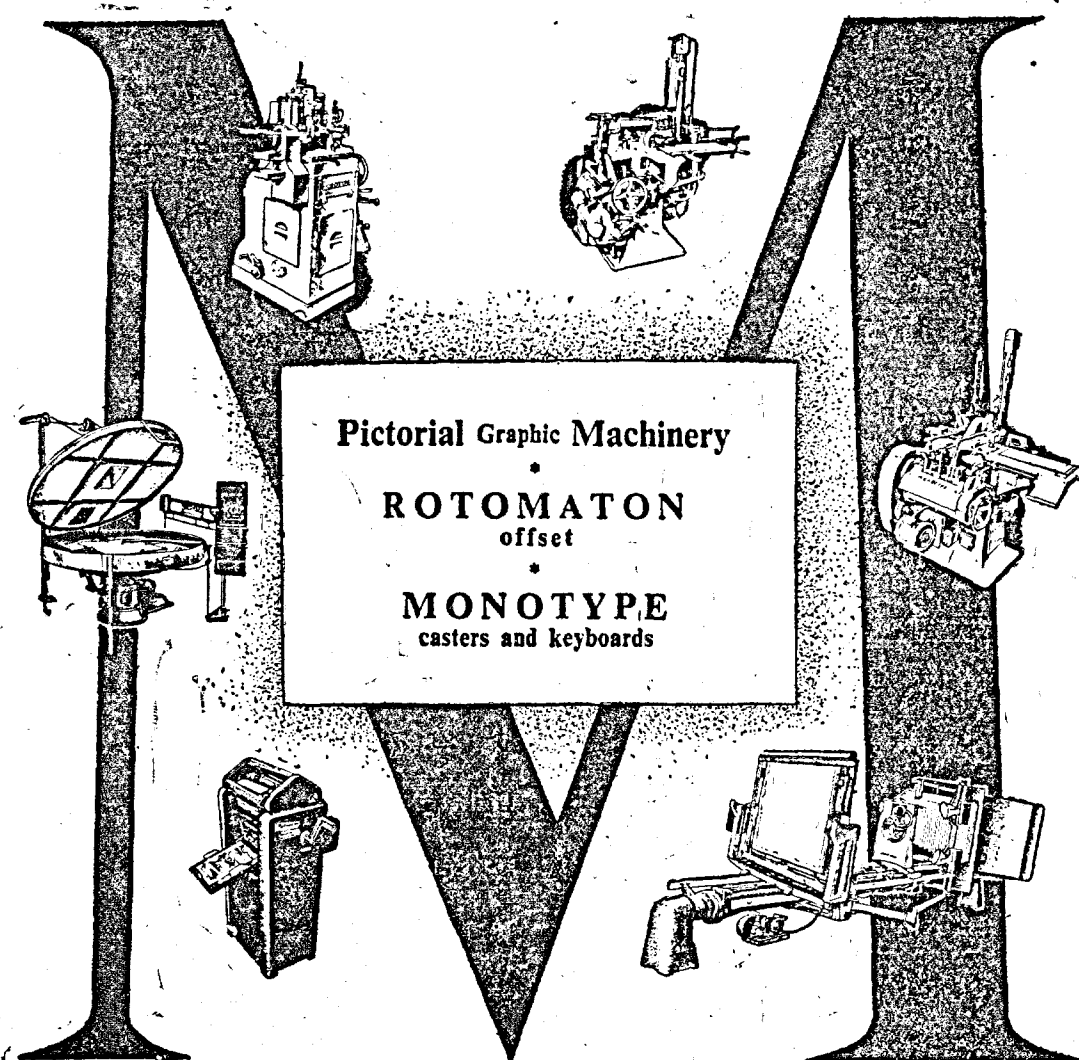
#### **No ultimate is yet in sight**

The author has attempted, in the space available, to trace the history of printing roller development to date. The trend does seem to be away from oil resistance synthetic rubbers owing to their acknowledged limitations; however, the pendulum may swing back. Polymer

(Continued on page 23)



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FOR OFFSET APPRENTICES (2)

## Achieving Colour Quality

By ERIC J. TONGUE

THE problem of maintaining an even colour strength throughout the run of a job seems to be one of the most difficult that the printer has to overcome.

Obviously the machine operator has no control over the quality of the retouching and platemaking and so we are not concerned with variations from these causes.

### Decide priority

The first step from the machine angle is to decide on the order in which the colours are to be printed, probably in collaboration with the artist or retoucher. If possible it is a great advantage to print the black or key colour first.

This will not only help to improve the register but it will enable the weight of the following colours to be judged more accurately. This procedure has one disadvantage. If there are areas where the black is solid or almost solid, printing a yellow or a yellow toned red over it will detract from the denseness of the black and, where this happens, a transparent yellow must be used. It may be that for some reason this is not acceptable and in this case the normal opaque yellow will have to be printed first.

If time allows pull a few impressions in black

from the key plate; these can be used during the makeready and at intervals during the run to judge weight of colour. The next step is to match the colour for strength and tone. Always use the same colours that were used to produce the job before if this information is available. If not, use the colour which gives the nearest match without alteration, and use the minimum number of other colours to obtain the exact match. Try to assess at this stage whether any reduction in strength will be necessary.

To test the match-up of the colour which has been mixed a small sample must be spread on to a sheet of the paper to be printed upon. For this sample to be of any value it must be spread on the paper in the same weight as if it had been printed, indeed the aim is to imitate a print as nearly as possible. This can be done by using a small hand-roller about an inch wide. These can be purchased or made up from an old feeder wheel. Charge the roller sparsely with ink and roll it out on to the paper. Now cut a section out of this sample and hold it over the copy. Choose a solid area to match up to. It is much more difficult to match up to chalk work or half-tone.

### A careful check

Examine the match with a hand magnifier in bright daylight or by a good daylight lamp. It is wise to err on the clean side for it is difficult to brighten up a colour once it has become dirty, especially if it has been run out on the rollers.

By the sample which has been run out it can be decided whether the ink will need to be reduced or strengthened. This judgment will only come by experience, but try to remember that sufficient ink must be carried properly to charge the image and to protect it from the friction of the dampers and rollers.

There must also be sufficient to fill up the grain of the paper and give a solid impression. On the other hand, only sufficient ink should be carried to do this, any excess will result in an impression in which the graduated tones will appear heavier than those actually on the plate. This not only detracts from the quality

of the print but it seriously misleads the artist or retoucher. Another result of excess ink is the mottled appearance of the solids.

#### **Ink control**

As soon as a satisfactory match has been made the ink may be adjusted for consistency. This will vary according to the type of paper, but as a general rule it should only be softened sufficiently to prevent plucking or set-off, and to enable the ink to transfer properly from rollers to plate, blanket and paper. If the subsequent impression seems light compared to the amount of ink on the rollers this usually indicates too stiff an ink or too much water.

Having judged that the ink is now ready for use put a small amount into the duct. It only wastes time to fill the duct up for it is very likely that it will have to be taken out again for further adjustments. Set the duct finely enough to enable at least four teeth to be taken on the duct ratchet. The reason for this is that if a slight reduction in the amount of ink carried is required, one tooth less will reduce it by a quarter; whereas, if the duct had been set at two or three teeth, a reduction of one tooth would reduce it by one-half or one-third, and this would prove to be too drastic for close control on the run.

Now run out the colour on to the rollers and pull about thirty waste sheets and one good sheet. Check this against the copy and adjust the ink duct where required. Repeat this procedure until a satisfactory result is obtained, but make sure before you obtain a pass that you have pulled sufficient waste to ensure that the result on the sheet reflects the setting of the duct.

Before starting to run always make sure by a matching test that the colour on the rollers is identical to that in the duct. Don't make the mistake of allowing the colour to clean up on the run. This may not appear very serious at the time but, when it happens on several succeeding colours and the sheets get out of their original order, the colour variation can be alarming.

When a pass has been obtained it should be pinned on the viewing board with a white

sheet beneath it. At frequent intervals sheets should be taken out of the delivery and compared with the passed sheet by placing them side by side. Don't place them on top of the pass sheet as this will give a false impression of the weight of colour. A pull of the colour being run on plain paper should be kept and then at intervals similar pulls can be taken and compared with the original one.

If the job appears to be running lighter or darker than the pass sheet don't rush to alter the duct setting; first check up on a solid are. If this also varies from the pass then the duct may be adjusted. Should the solid are appear correct then some other reason must exist for the apparent difference in appearance. This is probably due to thickening or sharpening of the halftone dots or chalk work and must be corrected on the plate and steps taken to prevent its recurrence. To diagnose these variations in the early stages is not easy. To do it properly the sheets must first be viewed from a normal distance—say two or three feet—to get the general effect, then a good magnifier must be used to examine the tone values in detail.

While running the yellow, variation in the tone values can be more easily detected by viewing the sheets through a blue glass which has the effect of making the impression appear black.

These blue viewers can be made up by inserting a piece of blue filter material between two pieces of thin negative glass and binding the edges together with adhesive tape.

The most common cause of colour variation is due to poor water control. Excessive water on the plate will obviously cause the impression to print lighter, a defect which grows worse as the run proceeds. Keep, therefore, a constant watch on the plate to see that it is just damp enough to keep the image clean. It should present the same appearance as if it had been damped over with a cloth which has been wrung out. Don't forget that as the temperature rises in the shop more water will be needed and vice versa.

*(Continued on page 23)*

## **THE MANUFACTURE OF INKS FOR NEWSPAPER PRODUCTION**

*(Continued from the last issue)*

An alternative means of manufacturing news ink is to use a machine known as a ball mill. These mills are virtually steel cylinders which are charged with steel balls different dimensions. The charge of balls is worked out in proportion to the cubic capacity of the mill. For each size of mill, there is a correct charge of balls and raw materials, and also an optimum speed at which the mill should be revolved in order to obtain an efficient dispersion caused by the cascading effect of the steel balls. These machines are extremely efficient

### **ACHIEVING COLOUR QUALITY**

*(Continued from page 22)*

#### **Avoid thin reducers**

Sometimes colour variation will occur, especially if the subject is a light one, through using a volatile oil of the paraffin type. As the subject is a light one and does not remove much ink from the rollers the oil has time to evaporate, leaving a more concentrated yet tackier film on the rollers. At first this tends to print darker but, as the ink becomes tackier, it refuses to transfer to the paper and the prints become lighter yet the rollers are charged with an ever-increasing amount of ink. Avoid the use of these thin reducers except in special circumstances. Where the subject is a light one increase the ink consumption by adding run-off solid tabs on the back edge of the sheet where they will be trimmed off.

#### **Watch your driers**

A similar variation in colour strength will be

and have certain manufacturing advantages where vast quantities of ink of one quality are required.

#### **Quantity Control**

Ink going over the mill can be examined on a gauge which will show the fineness of grind, and if there is any reason to doubt what appears on the gauge, a final check can be made under a microscope. Depth, tone and gloss properties of the ink manufacture can be checked by rolling out the ink on newsprint. This too, will give an indication of how much penetrations is likely to take place during printing.

Once the ink is manufactured, it can be despatched either in drums or in road tank wagons according to the requirements of the consumer. Generally speaking, internal storage of ink is arranged by having available a number of bulk storage tanks. It is usual too, to have filters arranged in pipe-work so that no ink can leave the premises without passing through at least two filters.

*Courtesy: Printing News*

experienced by the use of too much drier. The ink will become tacky on the rollers and refuse to transfer. It may be difficult to decide whether the ink is too stiff or whether it has become tacky on the rollers. A rough guide which will help is to note the conditions when the job was made ready; if the ink worked satisfactorily at first yet, after a ream or two, failed to transfer properly and began to pile up on the rollers, it is fairly safe to assume that there is too much drier in the ink. Alternatively, a reducer with a slower rate of evaporation is required. If the ink had been just too stiff it would have given difficulty from the start of the run.

When a long run is being printed it is better not to keep the eyes glued to the job for too long. When the eye has been concentrated on the same subject for sometime it carries an impression of that subject for a brief time even after the eyes are directed elsewhere. Because of this

*(Continued on page 23)*

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## NEWS

PRINTECH Diary Page :

News of people, production and  
events in the Printing, Paper and  
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### India

#### New Office-bearers of the Delhi Printers' Association

THE Annual General Meeting of the Delhi Printers' Association 24th September, 1957 in the new premises of the Delhi Press. Shri B. L. Baluja presided.

The condolence resolutions were passed at the sad demise of Lala Amar Nath of Delhi Press and Shri Badrinath Seth of Navin Press.

Presenting his report the Hony. General Secretary Shri Vedavrata described in brief, attempts made during last two years to make the Association interests of Printers of Delhi.

Touching the labour problem in Delhi Presses, Shri Vedavrata opined that no doubt, to some extent it is a universal problem these days and no sphere of employment, whether Government or private, can avoid its repercussions, yet its bad effects have been aggravated by the sweeping and indiscriminate and doctrinaire policies and whims of persons at the helm of affairs. Labours and social laws are enacted keeping in view problems created by big industries and establishments. But these are applied to small and medium industries also simply because they fall under the guillotine of the Factory Act. He gave the instance of the Industrial Disputes Act which has unnecessarily caused strained relations between employers and employees in small industries like printing presses without any appreciable benefit at the labour. Printing presses do not create any unemployment at all and yet they are being subjected to the rigours of various laws and rules meant for checking the unemployment. Shri Vedavrata reported that his interviewing at the Association level they have been able to great extent to check the rising trend of strikes, lock-outs and hostile and ugly demonstrations in the local printing trade. He advised printers to standardise terms of service in their presses and should try to win the co-operation of their employees.

NOVEMBER 1957

He disclosed that the Government and the Small Scale Industries Institute have already started scrutinising laws adversely affecting the Small Industries and hoped some good may come out of this move.

Listing some difficulties and problems facing the Delhi Printers and steps taken by the Association to alleviate and remove these, Shri Vedavrata mentioned the staggering of electric supply under which presses in Delhi have to observe their weekly closed day on Tuesday instead of Sunday which means a great hardship and handicap to presses. This matter has been taken up with the Chief Commissioner, Power Control Board and the State electricity Board and there is some hope of setting the needful done.

Similarly, a great problem will be created if the Government permits in his plan of removing presses from residential and commercial localities. It is a serious matter and the Association has taken it up with the State Industrial Advisory Board, Delhi Improvement Trust, Land and Development office and other offices concerned. The General Secretary acknowledged with thanks the support from the office of the All India Federation of Master Printers in this respect.

Shri Vedavrata reported that the Delhi Administration have included the printing industry also in the their scheme of cheap credit to small industries. He said that the State Bank of India and the Small Scale Industries Corporation yet require to be tackled to include presses in their schemes of credit and hire purchase facilities.

Shri Vedavrata disclosed that the Central Government has decided to start a School of Printing Technology in Delhi under the Delhi Polytechnic. Moreover, Government has a plan of a Central School of Printing Technology for which a committee has been formed to recommend among other things the place of its location.

After surveying other activities of the Association among which the Delhi State Printers' Conference of the last year was a great success, Shri Vedavrata paid special attention to the Fifth Session of the All India Printers Conference and Exhibition.

In the end Shri Vedavrata thanked his colleagues for fine co-operation and team spirit and expressed hope that their successors who would succeed to a better organiser and better placed association, would receive even more co-operation from all printers of Delhi.

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Shri Vishwanath of Delhi Press,

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Shri Vedavrata, New India Press,

#### HONY. JOINT SECRETARY :

Shri D. P. Sinha of New Age Press,

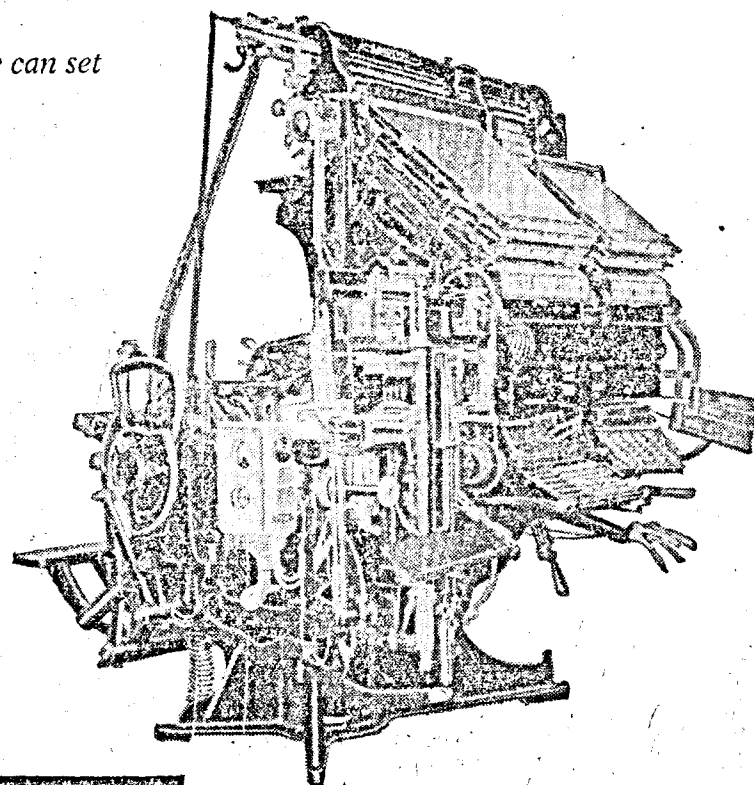
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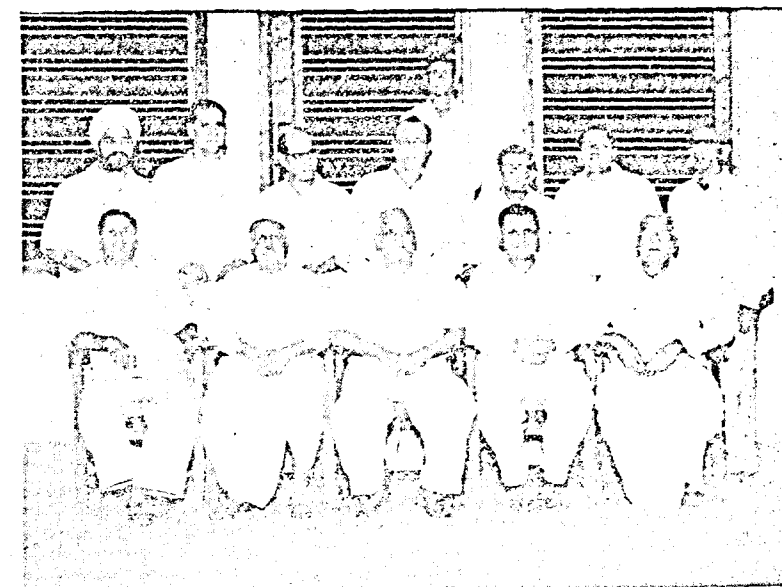
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### ORGANISING SECRETARY:

Shri Amarnath of Caxton Press.

The following were elected members of the Executive Committee.

Shri Gowerdhan Kapur  
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„ B. C. Ray  
„ Gopi Nath Seth  
„ Brahm Dutt  
„ Amarchand  
Sardar Jugander Singh  
Shri Hari Ram.

### Graphic India Group

On 21 July 1956 some ex-students of the London School of Printing and Graphic Arts got together at the Bristol Grill, Bombay, and formed the Graphic India Group. The aims of this Group are to foster a spirit of association among the ex-students of the LSPGA resident in India; to organize such activities as will further the interests of printing in India; and to advise students proceeding to the LSPGA for studies and assist those coming to India. Membership of the Group is open to all ex-students of the LSPGA resident in India. The entrance fee is Rs. 20 and the annual subscription Rs. 12.

Mr. W. Ellis Thirkettle, Principal of the LSPGA, is the Honorary President of the Group. The Vice-President is Mr. J. M. Pinto (Times of India Press). Mr. Ratneshwar Dayal (Films Division, Government of India) is the Chairman, the General Secretaries are Messrs. D. M. Dhadwal (Kodak India Ltd.) and R. Subbu (Tata Commercial Printing Press); and the Joint Treasurers are Messrs. Sapre (Bombay Government Central Press) and V. D. Kuray (Metal Box Co. of India).

In the initial period one of the General Secretaries, Mr. D. M. Dhadwal, had the opportunity of contacting most of the ex-students of the LSPGA working in Delhi, Calcutta, Madras and Nagpur when on a familiarisation tour of the country on behalf of his Company.

With a view to acquainting members and their friends with the latest developments in printing and management the Group organizes technical meetings. Speakers at the technical meetings held include Mr. Kenneth Jowett, a Graphic Arts Consultant from London; and Messrs. Yunus Varawalla, Sapre, D. M. Dhadwal and T. Lawrie, all members of the Group. At one of the technical meetings Mr. Norman L. Contractor, President of the Bombay Master Printers' Association, was in the chair.

Luncheon meetings are held from time to time. Recent guest speakers were Mr. P. K. Roy, Business Manager of the Times of India Group of publications, and Mr. Edward J. Fielden, Managing Director, J. W. Thompson Co. (Eastern) Ltd.

Because of the persistent demands from many presses and manufacturing firms throughout the country the Group is considering the possibility of starting a Technical Service to enable such firms to have their difficulties and problems attended to and solved by a panel of experts. Correspondence in this connection will be welcomed by the Group at 34-38 Bank Street Fort, Bombay-1.

England

### Printing on Polyethylene

New and improved standards of multi-colour gravure printing on polyethylene film have been announced by the Bag Division of E. S. & A. Robinson Ltd. (Redcliffe Street, Bristol, 1). Made possible by the use of improved methods and equipment providing accurate registration.

NOVEMBER 1957

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and colour reproduction, this standard of printing on polyethylene is understood to have never been achieved before. Indeed, the process of printing on polyethylene has now been developed by the company to a point where it is understood to compare favourably with the finest quality of colour gravure printing on paper or cellulose film.

### Proceedings of the Patra Rotary Letterpress Conference

COPIES of the Proceedings of the Rotary Letterpress Conference arranged by the Printing, Packaging & Allied Trades Research Association in April 1957 are now available from the Association, at Fifteen shillings per copy post free, obtained from: PATRA, Patra House, Randalls Road, Leatherhead, Surrey, England.

The publication, which runs to 160 pages, includes the eight papers presented and full reports of the discussion on them. The papers are as follows:—

Rotary Letterpress - A General Survey, R. Clay (Richard Clay & Co. Ltd.)

Electronically Engraved Plates, D. J. Kyte (K. S. Paul Ltd.)

Rubber and Flexible Plastic Plates, D. McLaughlin (McLaughlin Machinery Ltd.)

Metal Plates for Rotary Letterpress, J. J. Butler (V. Siviter Smith & Co. Ltd.)

Stereotypes and Electrotypes for Rotary Printing, F. Funston (Hazell, Watson & Viney Ltd.)

Sheet-fed Machines, E. A. Timson, M. B. E. (Timsons Ltd.)

Reel-fed Machines, D. Fletcher (Victory-Kidder Printing Machine Co. Ltd.)

Offset Letterpress Printing, J. L. R. Wright (George Mann & Co. Ltd.)

It will be recalled that the conference was the outcome of a recommendation made at the Eastbourne Letterpress Methods Conference that the future of rotary letterpress printing - whether sheet-fed or reel-fed - "calls for the closest possible attention by every master printer, every machine designer and PATRA".

The conference papers and discussions are published in the belief that the information given and the views expressed will be of considerable interest to the industry and may help to promote a better understanding between machine maker and printer in the light of present-day requirements.

### ROLLER DEVELOPMENT GOES ON AND ON

(Continued from page 19)

chemists are continually working with a view to producing more attractive synthetic rubbers, and hybrid substances which cannot truly be called plastic or rubber are appearing. These may offer the chance to rubber technologists to regain the initiative in the search for the perfect printing roller.

Courtesy: Paper and Print

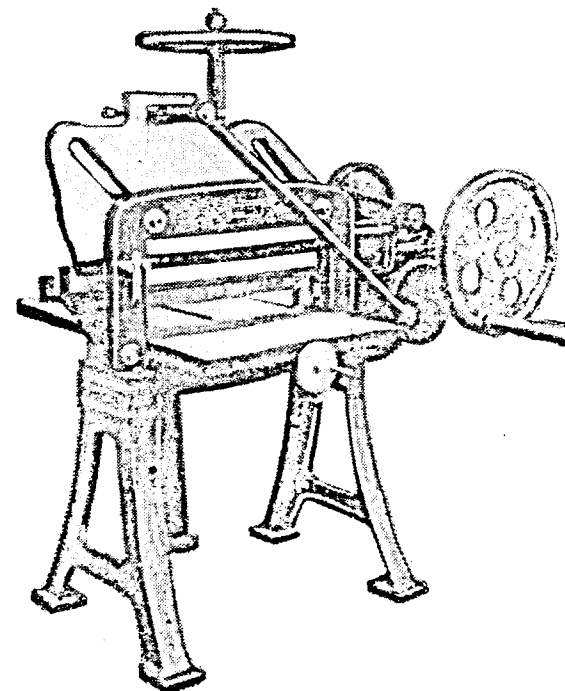
### ACHIEVING COLOUR QUALITY

(Continued from page 23)

curious phenomenon slight variations between the running sheets and the pass sheets may be missed. Look at the sheets carefully then look away and focus on something different. Remember that your first impression is most likely to be the correct one. If in doubt get more experienced opinions but don't act on them blindly; consider each opinion carefully and use them all as a help in arriving at a wise decision. Finally, the paper should always be run in the same order for each colour. This will ensure that the first ream will contain the start of the run for every colour and, as the first hundred or so sheets are never the same as the remainder of the job, it is an advantage to have them all in one ream. They can then be easily removed if necessary. This procedure will also enable the driest sheets to be run first for the following colour.

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All correspondence regarding the Federation should be addressed to the Hony. Secretary.

Regarding matter for publication, subscription and advertisements should be addressed to the Hon. Editor.

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## SOME MORE INKING PROBLEMS

By

E. A. D. HUTCHINGS

DUE to the all-over impression on a platen press, mottling is more often encountered than on cylinder machines. The main causes however, are either the use of a greasy or thin ink when printing on tub, or hard sized papers) or too heavy an impression. The packing is often a contributory factor, when printing solid tints, when the packing should be only medium hard to reduce the squash effect.

Where it is suspected that the ink is to blame tests can be made with inks of slightly more body and of stiffer consistency. When the correct type of ink is already in use and the fault continues the addition of a little magnesium powder will often eliminate the trouble. Magnesium powder can also be used as an additive to the ink in some cases of plucking or picking.

When printing solid tint plates uniform, firm but light pressure should be applied. If the colour is light while the stock is dark and rough surfaced it is often necessary to print two workings, the first being worked with heavy impression and only a little ink while the second working will be run with more ink but lighter impression.

### Set-off

The basic cause of set-off is superfluous ink standing on the surface of the printed sheet when subsequent sheets fall on top of it. Anti-set-off spray units and other ancillary devices have done much to reduce the trouble while increased press speeds, by reducing the time between printing and final delivery, have increased the risk. Apart from the normal causes of set-off, which are running with the wrong

type of ink, carrying too much ink, or stacking the printed work in too heavy a pile, a slight wipe which may escape detection will often cause set-off.

Machine printers should learn to appreciate the true character of type founts in order to be able to assess the correct amount of ink to cover the face while giving sufficient pressure to transfer this ink from the forme to the paper.

Careful consideration must be given to the stock being printed. Paper containing a high proportion of size will absorb only a very limited amount of vehicle, the amount increasing as the size is reduced. On a normal printing paper one pound of ink will print about 1,000,000 square inches of type matter set solid. Using this figure as a rough measure the different absorbencies of those stock commonly carried can be assessed and ink can be selected or corrected accordingly.

Where the stock is absorbent set-off can best be prevented by causing the ink to penetrate into the paper more rapidly. On soft sized super-calendered and ordinary printing papers this can be done by adding a few spots of paraffin and terebene, while on imitation or art paper a small quantity of a solid solvent such as ordinary lard or solid oil may be used. As an alternative to these one of the wax preparations provided by the ink-makers for this purpose can be used.

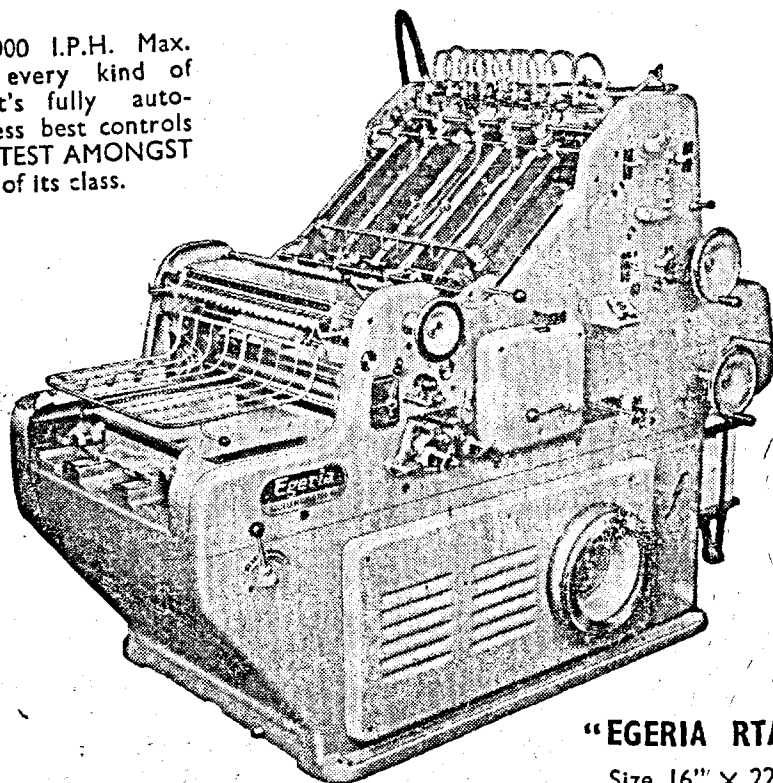
When a non-absorbent hard-sized or tub-sized stock is being worked it is essential to use an ink made specially for this type of paper. The cylinder or platen should be packed hard to produce a firm impression and good colour

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with a minimum ink film. A small amount of paste driers may also be added to the ink to speed drying, but this will also cause the ink to dry faster on the press. On no account should liquid driers or any other thinning agent be used. This will cause a heavier film to be run to give correct coverage and can increase the risk of set-off, besides producing other unwanted effects.

Ensure that the ink is well distributed by setting the duct so that the vibrator brings away as wide a surface supply as is reasonably possible. A full set of distributor rollers must also be carried. Poor distribution is often the cause of trouble.

### Chalking

Chalking, sometimes referred to as 'powdering' is particularly prevalent when printing on some of the process art papers in common use to-day. The ink apparently dries satisfactorily on the surface yet when rubbed the pigment will powder. What has in fact occurred is that the vehicle and binder in the ink have drained into the paper leaving the pigment on the surface without binding.

Prevention rather than cure is the main objective here and tests should be carried out with ink and paper prior to running the job to ensure that the materials are suited to each other and will not chalk. Some process arts have an absorbency little short of blotting paper. Other caused are the use of the wrong ink; using an ink which has been over reduced; or an ink which through drying too slowly, will permit the vehicle to drain away before the ink sets.

Where tests show that chalking is occurring and the best possible ink available is being used, it is possible to modify the effect. Where the colour is not to be overprinted, a little paste driers can be added to accelerate the drying and to assist in binding the ink on the surface of the stock. If colour is to be overprinted, add a stiffer ink or a stiff varnish. The addition of this varnish will counteract the excessive absorbency of the paper and leave sufficient vehicle on the surface to bind the pigment.

When chalking occurs on a job which has been printed there are two courses left open to avoid reprinting. If only a small number of sheets are affected, they can be individually dusted with French chalk or magnesium powder. This will prevent the ink from rubbing in all but the worst cases. Where a large number of sheets have been printed and are chalking they can be overprinted with a light varnish which will cover the affected print and bind it to the surface.

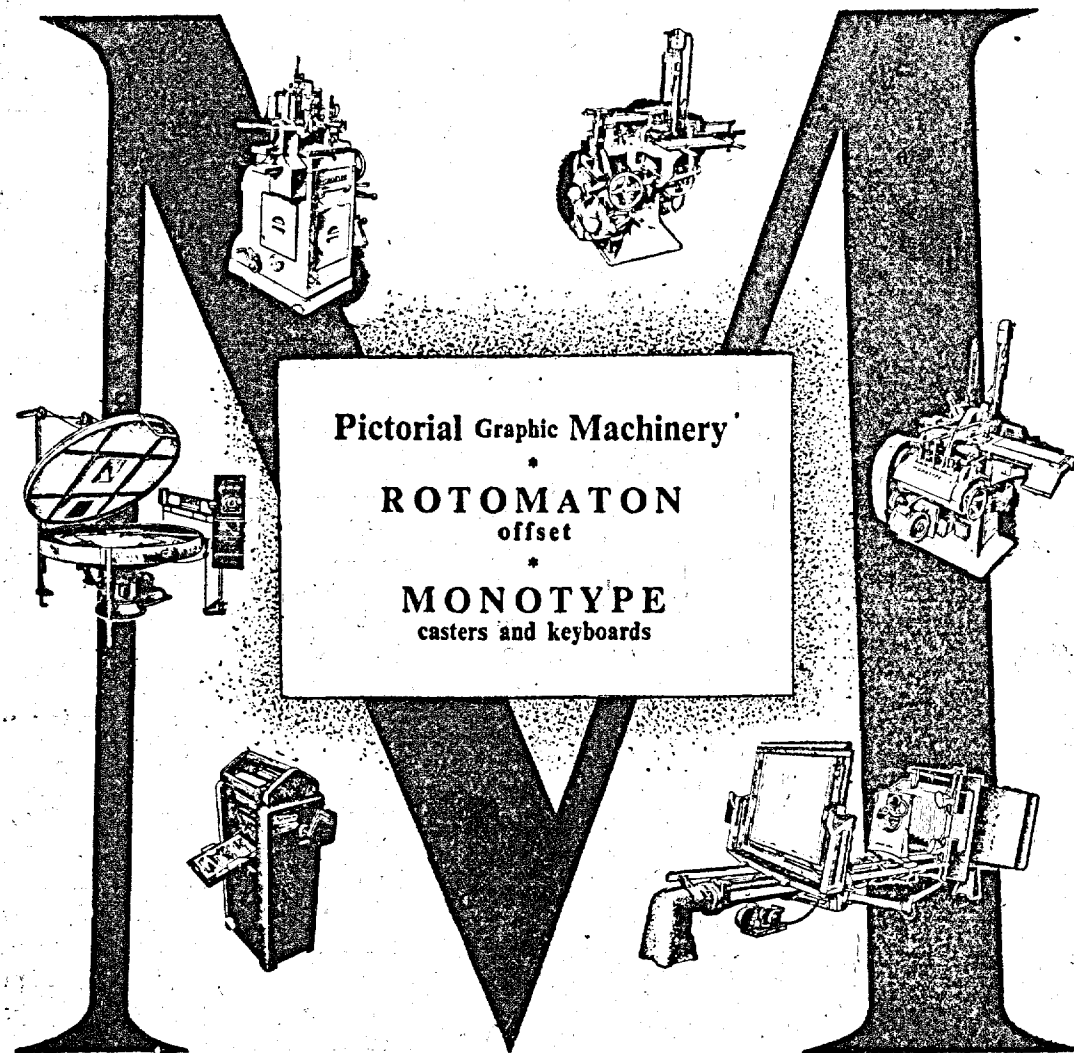
### Crystallization

The development of quick-set and similar inks has led to a substantial reduction in the prevalence of this trouble; the basic cause is the ink drying too hard in multi-colour printing before a subsequent colour is printed over it. The hard surface of this ink reticulates as it dries and offers no 'key' to the subsequent colour, which gathers in the hollows formed by the dried ink, leaving the higher parts uncovered. When inks other than quick-set types are used the work should be planned so that second and subsequent colours are worked before the ink is completely dry. When an ink is found to be drying too rapidly the drying rate can be retarded by adding a non-drying agent such as petroleum jelly. However, care must be exercised in its use or non-drying may result.

It is unfortunate that, unless careful tests are carried out prior to printing, crystallization will not be known to exist until the non-acceptance of the subsequent colour is observed. Should this be the case and only a few sheets are affected, these should be rubbed over with magnesium powder. This action will slightly roughen the hard, greasy surface of the print and produce the requisite key for the colour being run. When a considerable number of sheets are affected the ink of the second working will require the addition of a small quantity of an ink solvent. This will attack the hard undersurface and soften it sufficiently to allow the colour to key to it.

Courtesy: Print in Britain

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PRINTECH

## Checking the Quality of Line and Half-Tone Blocks

By

R. V. Cannon, A.R.P.S.

WHEN checking the quality of line and half-tone blocks it must be remembered that there are no official standards for printing depth in this country, but during the many years that photoengravers have produced these blocks for printers certain unofficial standards have been established.

As the majority of line blocks are made on 16 gauge zinc, which in actual thickness is .064 in., the depth in the open areas of good quality work should be approximately thirty thousandths of an inch; a little under halfway through the thickness of the metal. Some photo-engravers etch line work deeper than this, especially when the finished block is required for rubber stereotypes (in which case this type of block is sometimes etched on thicker gauge metal). On the other hand, with considerable variation in the type and quality of printing machine and paper, etc., it is probable that under certain circumstances plates with less depth will print perfectly well.

When checking line blocks for depth, attention should also be given to the close areas for shallow etching. Apart from the possibility of filling in when printing from the original block there is even greater danger of this happening if the block has to be stereod. This particular fault can be the result of careless workmanship during the process of powdering; the Dragons Blood is not brushed out sufficiently and the close areas fill in before they have received the correct amount of etching, although it must be

remembered that these areas cannot have the same depth as the more open areas; for example, where coarse tints have been added to the line reproduction five to seven thousandths of an inch should be ample depth.

Line blocks should also be free from top and bottom shoulder. Bottom shoulder, which is usually the result of bad powdering with Dragons Blood, or insufficient etching after powdering, is not always considered a serious defect because, being close to the non-printing surface, with normal conditions of printing, and providing the block is deep, there should be little danger of the shoulder printing up.

Top shoulder is a much more serious defect; it is situated just below the printing surface and, due to the photo-engraver's practice of blackening the non-printing areas it is not easily detected.

There are a number of reasons for its presence such as over-rolling after the first etch, overheating the plate after the first roll, too much powdering and not enough etching in the early stages. With some methods of line etching it can be caused by too short a "finishing" bath. (The latter is the term given to process of removing shoulder after a satisfactory printing depth has been obtained). Failure to remove the shoulder may result in a thickened or double line when printing.

Underbite is another serious fault in line blocks. It is more frequently found in the finer detail such as small type matter,

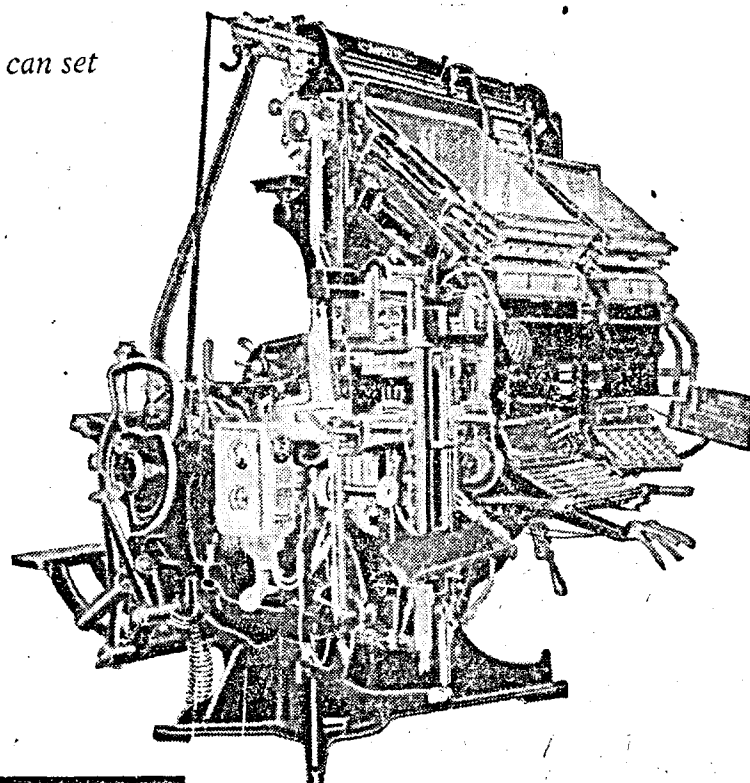
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punctuation marks and also the ends of lines, especially the kind that taper away to a fine point.

It is similar in appearance to the overhanging cliff which has had the lower part worn away by continual action of the sea washing against it. If pressure is applied to the surface will eventually give way and collapse. Similarly, the lines on a block which are under-ritten, when subjected to a long run on the machine may eventually give way and collapse.

The same problem will arise in newspaper printing after successive mouldings have been made from the block. The fault is caused through not providing sufficient side protection with Dragons Blood or by excessive etching after four way powdering. It is the usual practice of the craftsman to examine the line batch in between each etch for signs of under-rite and at this stage it is invariably necessary for him to provide further protection to the vulnerable points by retouching before replacing the batch back into the machine for further etching. It is far more likely to occur in rocking bath than machine etching because the wash of the acid against the sides of the lines is similar to the pounding of the waves against the cliff face.

With good quality line reproductions it is always a good policy to make a check of the engravers proof with the original line sketch or any possible thickening or thinning of the image lines. As already mentioned, a faint trace of top shoulder will often show a thickened line on the proof. Another reason for this particular fault is bad negative processing. Thinning of the line image is usually the result of excessive etching in the initial stage before the rolling and powdering operation or when the shoulder is being removed in the "finishing" bath.

When the line reproduction contains a number of large solid areas it is always advisable to make a check for any sign of surface pitting. In this case the plate and not the engraver's proof should be checked for this fault.

### **Protecting the back of Plates**

A large proportion of line blocks are now delivered unmounted and this makes it possible for the printer to examine the backs for the presence of any etched areas. This is a fault which should very rarely occur because during the actual etching of the line batch the back is protected with a coating of acid resisting shellac.

The trouble arises when the shellac is too thin and likely to come off during etching and allow penetration of the back to occur. The fault could be serious if present on blocks with large areas of solid, because the affected parts would gradually sink under pressure when running on the machine. The metal manufacturers are doing their best to provide the metal already sprayed with an acid resisting backote. It is already being done with "Primag" magnesium alloy plates, but the problem with zinc is how to prevent the metal softening when stoving the backote on.

When the etching of the line batch has been completed it is the practice of the majority of photo-engravers to blacken it up with a solution of copper sulphate and then to lightly rub the printing surface with a stick of charcoal until it shows up clean and bright. This is done mainly to show up the waste metal portions more clearly and so reduce the possibility of error when routing them away. The client also likes the appearance of a block treated in this manner and a further advantage is that it shows very clearly whether any surface pitting has occurred. On the other hand it does tend to camouflage the presence of shoulder and underbite and therefore, if there is any doubt over the quality of the line block it is advisable to clean out the copper sulphate with a stiff brush before making a close examination.

The problem of half-tone depth is a little more complicated because it is closely related to the screen ruling used for the reproduction and the paper to be used for printing. Again there are no official standards but the following figures are recommended as a representative scale by the British Federation of Master

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Printers in their "Precision Aid" leaflet, Measuring Depth of Half-tone Plates.

| Screen | High-lights | Middle Tone | Shadow   |
|--------|-------------|-------------|----------|
| 65     | .0055 in    | .0040 in    | .0026 in |
| 85     | .0045 in    | .0030 in    | .0020 in |
| 100    | .0032 in    | .0024 in    | .0017 in |
| 120    | .0026 in    | .0018 in    | .0013 in |
| 133    | .0023 in    | .0017 in    | .0011 in |
| 150    | .0020 in    | .0014 in    | .0009 in |

Further information on this subject can be obtained in the following article: Printing Depth of Half-Tones (Cox and Cannon) British and Colonial Printer, December 4, 1953.

With regard to how fine it is necessary to etch the highlight dots on fine screen half-tone, my own opinion is that because there is less danger of underbitten dots than in coarse screen they can safely be etched to needle point providing the tops of the dots are not damaged in any way. With coarse screen I prefer a lightly firmer dot to be left in these areas because of the stress the plate is subjected to when moulding for stereos. Many coarse screen half-tones are rolled and deepened and unless this operation is performed correctly a sub-standard block will be produced. For example, an excessive first etch previous to rolling, will finally produce a mushroom type dot which is in danger of breaking off during moulding.

If fairly large expanses of highlight are inclined to print dirty this may possibly be due to the dots in these areas having been etched too sharp. This usually means that the tops of the dots have been damaged.

Fine screen half-tones which are to be printed on uncoated paper should have a little more depth than is necessary for printing on coated paper. The middle tones should also be checked to make sure that they have been etched a little lighter to allow for the reduction of the contrast range when printing on the softer paper. This is also very important in coarse screen work. A check should be made that middle tones are deep and clean with no shoulder left over from the rolling and deepening operation.

When ordering coarse screen half-tones,

specify proofs on newsprint and not on art paper otherwise disappointing results will be obtained when they appear in the newspaper. While on the subject of paper, whenever half-tones fine or coarse are to be printed on special papers make certain that you supply the photo-engraver with some for proofing.

Finally, it is a good plan to check the screen ruling. A very simple screen tester for this purpose can be obtained from F. E. Brown and Co., Leicester, England.

*Courtesy: Printing News.*

#### Where did that word "Flong" come from?

WHAT is a flong? This question stumped the contestants in a recent television quiz, just as mention of stereo and stereotyping completely mystifies people outside the printing industry. Indeed within the trade itself the old-time stereotyper jealously guarded the secret of his particular make-up of "wet" flong.

Why flong? The word must have had more comic variations than most, the usual crack being neatly summed up in L. S. Dixon's novel leaflet "Whose Flong?" It is derived from the French "Flan," meaning custard, or a doughy mass, which seemed to be an apt description for the old plaster of paris method and also the first efforts at paper mache moulds. In crossing the Channel "flan," to the English ears sounded like "flong," and the name has stuck.

The speed up and efficiency of the rotary printing of newspapers has been dictated by the development of dry flong, which has been pioneered in this country by L. S. Dixon and Co., Ltd., for the past 45 years.

During this period original rough faced, dirty looking board has developed into the Dixotype "Seven Grade" plan of today a range of seven qualities, each a different colour and to meet a different requirement, whether it be abnormal shrinkage, high casting strength, or for first class half tone reproduction.

The general public however will no doubt continue to be baffled by the question "What is flong?"

## 12 பாயின்ட் பவானி ரோமன்

ஒருவன் தன்னைத்தான் நேசிப்பானாகில், அவன் தன்னையே கவனமாய்க் காத்துவரவேண்டும். இரவில் முன்று யாமங்களில் ஒன்றிலாயினும் ஞானி விழிப்புடன் கவனமாயிருப்பானாக.

ஒவ்வொரு மனிதனும் முதலில் தான் நன்னெறியில் நிலை பெறவேண்டும்; பிறகுதான் மற்றவர்களுக்குப் போதிக்கவேண்டும். இத்தகைய ஞானி கிலேசமடைவதில்லை.

மற்றவர்களுக்குப் போதிக்கிறபடி ஒருவன் தன்னைப் பண்படுத்திக் கொள்ளட்டும். தன்னை நன்கு அடக்கியாண்ட பிறகு, பிறரை அடக்கியான முடியும். ஏனெனில் தன்னை அடக்கிக் கொள்வதே கடனமான காரியம்.

ஒருவன் தானே தனக்குத் தலைவன். வேறுயார் தலைவனாயிருக்க முடியும்? தன்னை நன்கு அடக்கிவைத்துக் கொண்டால் ஒருவன் பெறுதற்கரிய தலைவனைப் பெற்றவனாவான்.

முடனுடைய பாவம் அவனிடமே பிறந்தது, அவனே படைத்தது, வயிரம் மற்ற மணிகளை அறுப்பதுபோல், அவன் செய்த பாவமே அவனை அழித்துவிடும்.

மாலுவக் கொடி கடம்ப மரத்தைச் சுற்றிப் படர்ந்து மரத்தையே அழுக்கி விடுவதுபோல், ஒருவனுடைய தீவினையே அவனை அழுக்கிவிடுகிறது; பகைவர் செய்யவிரும்பும் தீமையை அவன் தானாகவே செய்துகொள்கிறான்.

ஷெ பவானி ரோமன் எழுத்துக்கள்

18, 14, 12, 11, 10, 9 பாயிண்டுகளில் கிடைக்கும்

தயாரிப்போர்:

நார்ட்டன் அண்டு கம்பெனி

ஸ்பார்ட்டன் டைப் பெளண்டரி

சூனை, சென்னை-7

FOR OFFSET APPRENTICES (4)

## Setting the Ink Duct

By ERIC J. TONGUE

SETTING the ink duct properly is not a job that can be dismissed as a simple operation; it calls for a very delicate touch and fine judgment.

The ink duct blade consists of a finely tempered and machined piece of steel and it can very easily be ruined by careless treatment.

It often happens, that when an operator takes over a machine it is found that the blade cannot be adjusted to give a fine even film of colour on the duct roller, or that the blade will not respond in certain spots to the adjustment of the keys. It may be found that even with a new machine or a new blade similar deficiencies exist. In these cases a new edge must be ground on the duct blade. To do this the blade must be fitted into the machine and located by the brackets and for location screws which are usually situated at the back of the frame which holds the duct blade. Make sure that that adjusting screws are slackened off and are not straining the blade into a convex shape. Once the blade has been bolted into position the adjusting screws are evenly tightened and a small supply of abrasive is placed in the duct, valve grinding paste will be found quite effective. Add to the paste a little machine oil and a trace of colour, just enough to enable the mixture to be seen on the duct roller. The

machine is then run with the duct turning to its fullest extent.

Whilst the machine is running the adjusting screws are constantly adjusted to keep a fine, even film of abrasive revolving round the roller. Of course, the adjusting screws must be sufficiently tightened to keep the blade pressed against the roller, otherwise the abrasive will have no effect.

In this way the high spots on the blade will be gradually worn down. How long the treatment must continue will depend on the original condition of the blade but an hour's run with the abrasive being constantly agitated will show a marked improvement. Once the blade is levelled, avoid straining it by over-tightening the screws especially on the ends. When setting the duct for a job, fit the plate in position on the machine and turn the machine until the work on the plate can be seen from the ink duct. After placing a small amount of ink in the duct, decide which section of the plate needs the least ink and set the duct blade in this section to pass a minimum amount of colour. Now, by looking at the image on the plate, judge how much more ink will be required in the other sections. If there is three times as much work in one section then the blade will have to be opened to allow three times as much ink and so on. Set the duct ratchet on about four teeth, so that if the ratchet is subsequently adjusted by half a tooth it will result in a variation of one-eighth more or less ink. This will be an adequate control for most jobs.

Once the job is running, very fine adjustments to the duct setting will be required and beginners usually find it very difficult not to over correct, with the result that the adjusting screws are constantly being altered throughout the run of the job. To assist in making a fine adjustment the screw should be cleared of all hard ink and thoroughly lubricated. Practise watching the thickness of the ink film on the duct roller and notice how the lines of ink formed by the action of the ratchet help to show up the variation in the thickness of the ink film.

Some machines are fitted with a duct roller

which revolves continuously and the amount of ink fed to the rollers is controlled by adjusting the length of time the vibrating roller dwells on the duct roller. In these cases watch the mark which the vibrator leaves on the duct roller for variations in the ink film.

There are two main types of adjusting screws in use; One type has milled heads the other has small cross bars fitted into the heads. The former must be held firmly and just squeezed one way or the other to obtain a fine adjustment; the latter can be adjusted by tapping the cross bars lightly with a small spanner.

It is very easy to under-estimate the time it takes for a fine adjustment to the duct to become apparent on the sheet and this often

leads the operator to make a second adjustment which is later found to have been unnecessary.

Only long practice and control over one's natural impatience to see the result on the sheet will overcome the fault. As a rough guide it can be remembered that it takes at least seventy-five sheets for a duct alteration to become apparent on the sheet and this estimate will vary with different machines. To cut down this period of time it will help if, when making an adjustment, a little ink is also added to the rollers with a knife or, if less is needed, a strip of paper is passed round the rollers and then removed by reversing the machine.

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## pH Solution is Important in.

## Clean Offset Printing

OBTAINING a clean, dense print on papers run through an offset press is no accident. There are many graphic arts supplies that must be intelligently bought and intelligently controlled. We are all familiar with Durometer readings for rollers, tack measurements of ink, grain size of plates, hardness of blankets, pH of fountain solutions, etc. Most of the characteristics of these products are rather well defined by tests made upon them, but not so with pH.

To better understand pH, let's consider its definition. PH is the measure of potential (p) hydrogen (H) available in a solution. The amount of potential hydrogen controls the alkalinity or acidity of the solution. To simplify the readings, a scale was developed assigning the number 1 to the extreme acid end of the scale, the number 7 to the neutral point, and the number 14 to the extreme alkaline end. It is well to remember that to change the acidity or the alkalinity of a solution one pH number is a tenfold step; that is, a pH of 4 to 3, keeping in mind that the lower the number the greater the acidity.

So we see that pH is only the measure of the strength of an acidic or alkaline solution. It does not tell us what acids or alkalis are in the solution. What does this mean to the lithographer? It means that if, under a certain set of conditions, he has arrived at a fountain solution mixture that is working well, and he controls his fountain solution to that pH, he should not be troubled with problems arising

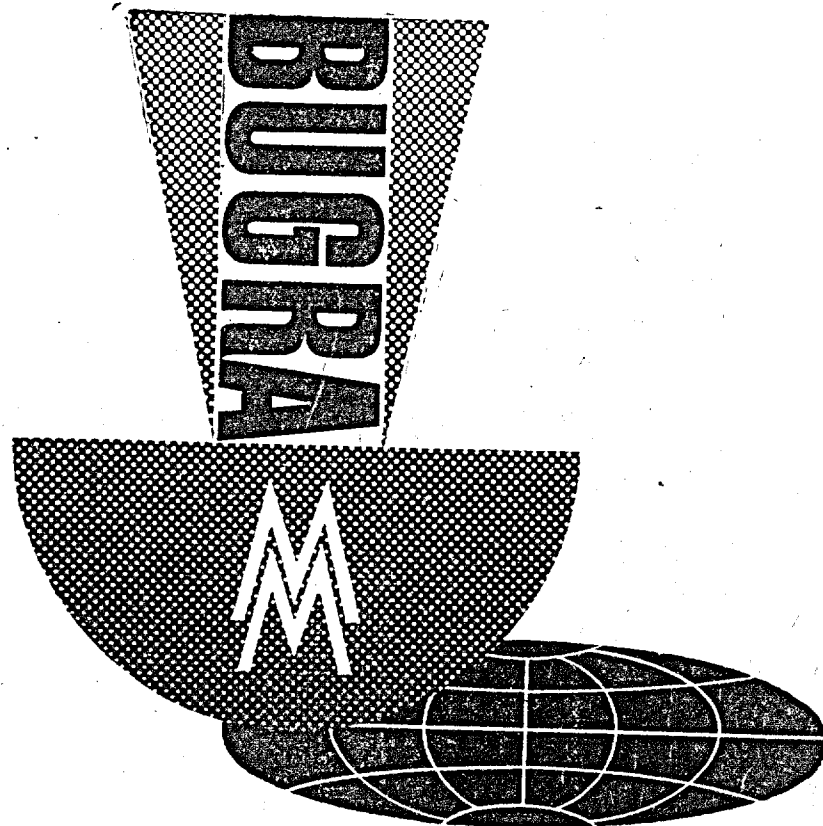
from the acidity of his solution. It does not mean that his present solution at the present pH is the right one for a different job with different ink, paper, layout, etc. The most important factor is, what chemicals were used to arrive at that pH.

When a greasing or scumming condition develops on a job, you can go just so far with a lower pH, as you will run into many other problems such as blinding the plate and short plate life, slow ink dry, and stripping. The better approach to the problem is to change the kind of solution you are using and maintain a normal pH. There are prepared solutions on the market that will do an excellent job of eliminating greasing and scumming on the infrequent job that causes trouble for a lithographer.

Another thing that can cause trouble is the indiscriminate use of gum arabic. The writer knew a lithographer using twenty-two ounces of gum to a three-gallon bucket of fountain solution on the last two units of a four-colour offset press. The job was scumming badly. When the gum was dropped to one ounce to the gallon and the acidic content modified, the scum cleared up.

To summarize, pH is not the only factor in clean printing on an offset press. The type of acids and salts used in a fountain solution are extremely important—TECHNICAL REVIEW, St. Louis Club of Printing House Craftsmen.

*Courtesy: The Inland Printer*



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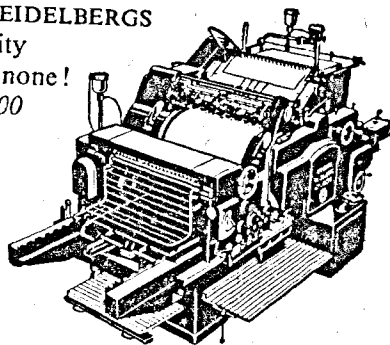


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## Technical Description of the New Original Heidelberg Cylinder

EARLY in its history, Schnellpressenfabrik produced quite a number of printing machines of all sizes, but in the 1920's it was decided, under the present managing director, Hubert A.H. Sternberg, to produce fewer machines, hence there arose the well-known platen and cylinder presses. It was then decided to add the new cylinder size to this range. Prior to its introduction to the trade, this new member of the Original Heidelberg press family has undergone eight years of research and two years of testing under rigid working conditions in Germany as well as abroad.

### Major features of the new press

As in the 21 in. × 28 in. size, the advantageous application of the rotary principle to flatbed printing has also been utilised in the 15 in. × 20½ in. Heidelberg cylinder. One of the most important design features of Heidelberg's cylinder machines is the large single revolution cylinder combined with six point support for the type bed, machine makeready time is reduced to an absolute minimum. Latest letterpress developments which make for reduced makeready and increased production are particularly applicable to this new machine.

Those printers who are already operating 21 in. × 28 in. Original Heidelberg cylinders will recognise many essential features of this machine incorporated in the new 15 in. × 20½ in. O.H.C. Simplicity of the machine, with a minimum of adjustment and ease of operation allow quick get away and cut down idle time. Instruction plates and scales speed up adjustments—no trial and error methods. Single lever control precludes operational errors—all

press functions are automatically set in correct sequence.

### Curved feedboard

The feeder has no tapes or feed rolls. A curved feedboard is a new exclusive feature of the 5 in. × 20½ in. OHC. It gives sheets maximum stability when being registered, particularly important for thin and troublesome papers. Mechanical grippers, requiring no adjustment for weight or size of paper, give positive sheet control.

A new concept in delivery features the unique slowed-down period of the chain grippers, just as the sheet is deposited on the delivery pile, thus giving trouble-free and smooth delivery at maximum running speeds.

A synchronised action of front and side guides and a gripper control sheet transfer to the cylinder guarantees hairline register, even at changing speeds, perfect unyielding impression strength. The 14½ in. diameter of the cylinder does not lift or lower for printing and return strokes as in the case of two-revolution designs nor intermittently stop and start as in stop cylinder designs. The cylinder journals are rigidly locked on impression position.

Four forme rollers in three different diameters assure coverage to meet every job requirement. All four forme rollers clear the maximum forme.

Some of the other features are—complete accessibility of forme without swing aways one stroke lubrication infinite speed control and preloading device.

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## INAUGURATION OF PLANT WIESLOCH SCHNELLPRESSENFABRIK A G HEIDELBERG AND THE INTERNATIONAL REPRESENTATIVES MEETING FROM 13 TO 15 JULY 1957

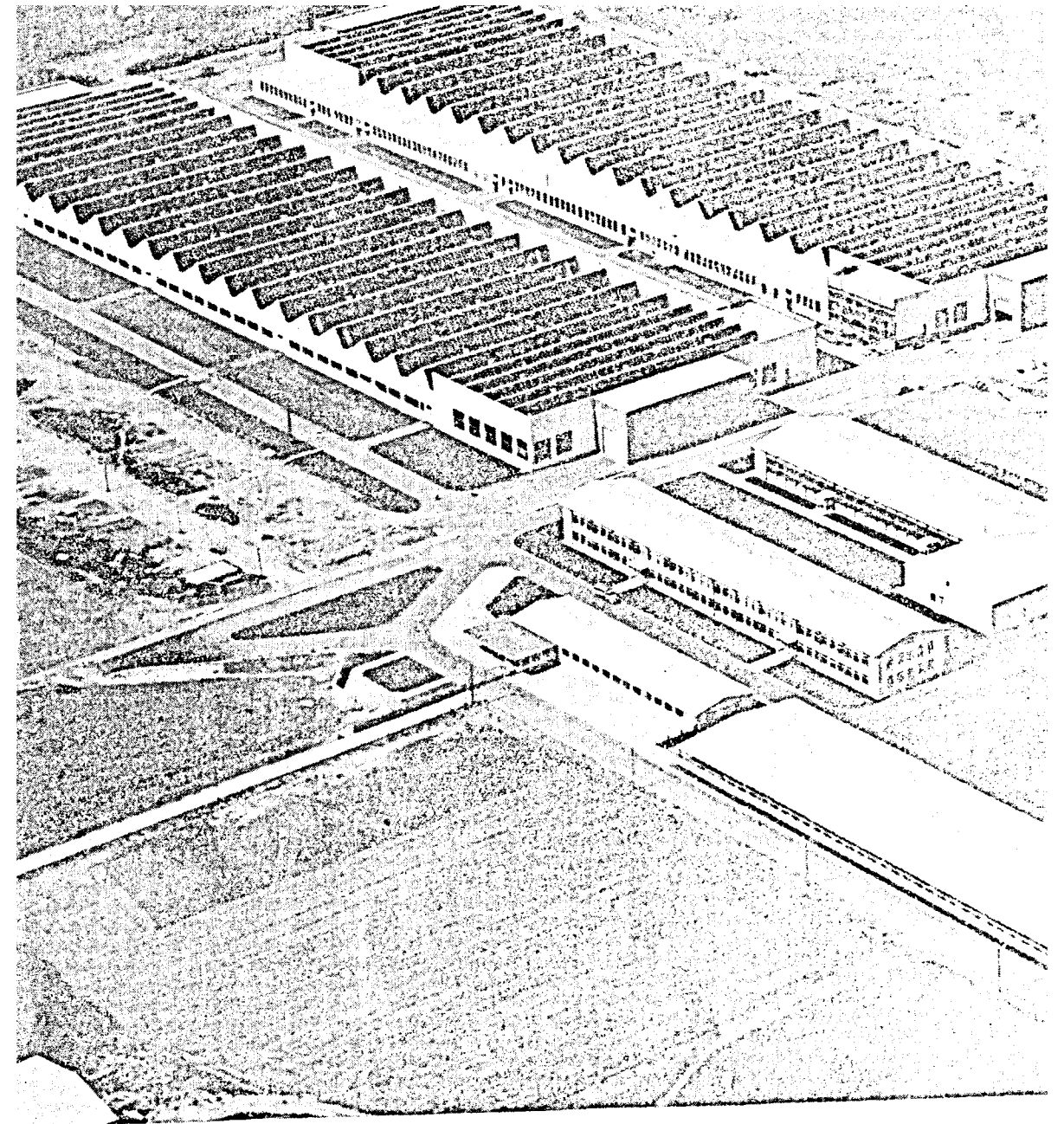
ON 13 July 1957, the new plant of Schnellpressenfabrik AG Heidelberg at Wiesloch was inaugurated. The entire world wide sales and service organisation was invited to come to Heidelberg on this day to participate in the opening ceremonies together with members of the parent company. At the same time the new plant was dedicated, a representatives' meeting of the entire Heidelberg sales and service organisation took place. More than 300 ladies and gentlemen of the sales organisations from Germany, Europe and countries abroad accepted the invitation and came to Heidelberg.

The opening ceremonies of the new factory were conducted in the morning of 15 July 1957. Musical pieces played by the orchestra of the National Theater Mannheim provided a festive atmosphere. After the dedication, a tour of the new manufacturing hall for the automatic platen presses and an inspection of the office and reception buildings was conducted for the guests who formed small language groups. After a brief address by Mr. Sternberg in six languages—"Open Sesame"—the guests then saw for the first time three new  $15 \times 20\frac{1}{2}$ " Original Heidelberg cylinder and  $10 \times 15$ " and  $12 \times 18$ " Original Heidelberg Automatic Platen Presses. The machines ran with maximum speeds. After a tour of the manufacturing hall for the  $15 \times 20\frac{1}{2}$ " Original Heidelberg cylinder, the official meeting took place which was followed by individual discussions with members of the sales and service organisations.

On the following Sunday morning, all guest and members of the Schnellpressenfabrik gathered for a river boat trip on the Neckar. The two chartered ships sailed upstream the romantic Neckar Valley which is dotted by castles and old towns. While passengers on the upper decks were either "talking shops" about the new  $15 \times 20\frac{1}{2}$ " Original Heidelberg cylinder or were in a rip-roaring mood, the management of Schnellpresse negotiated with the various representatives below deck.

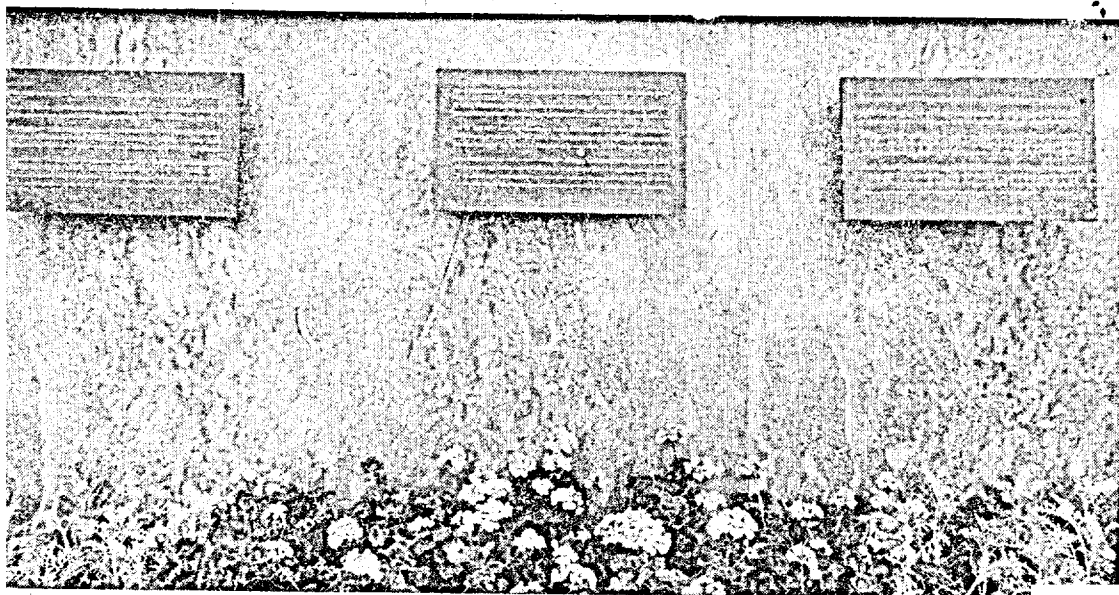
Monday was devoted to serious work again. The chief fitters and the salesmen were given an opportunity to study the new machine, the newly developed gantry and the lifting device.

Next to the dedication ceremonies and the work done during the meeting and the discussions, the eventful days in Heidelberg also included very many happy hours for all participants. The following pages are to provide an illustrated report on the dedication of plant IV in the morning of 13 July, of the representatives' meeting, the individual discussions and the happy hours of the merry get-together in the evening of 13 July and during the boat trip on the Neckar on 14 July 1957.



Aerial view of plant Wiesloch of Schnellpressenfabrik AG Heidelberg

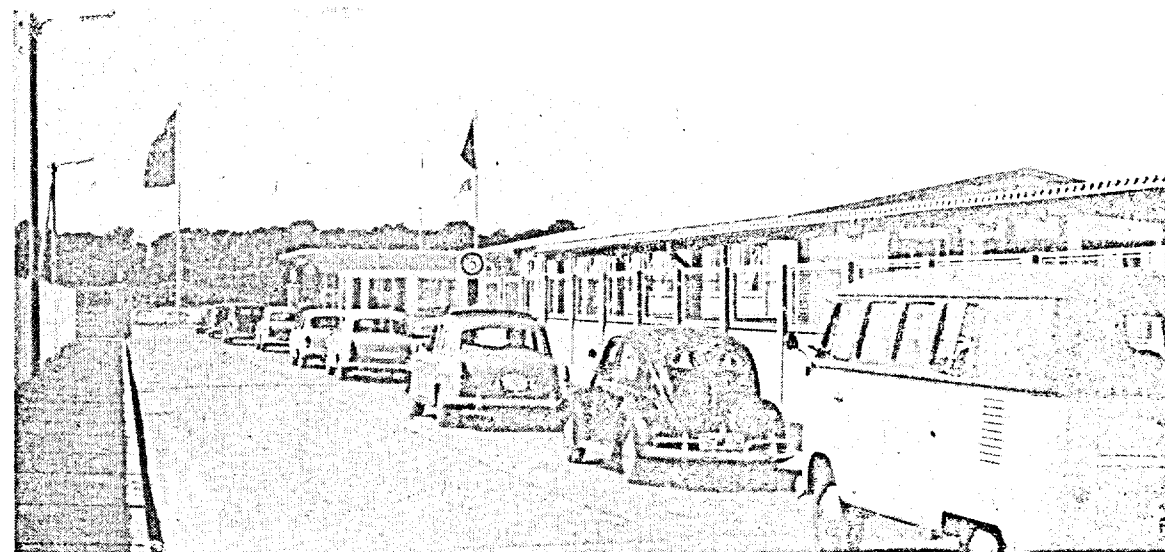
Here on 13th, 14th and 15th July 1957, the international representatives' meeting took place where 300 representatives from all countries of the world united to spend happy hours and to do serious work.



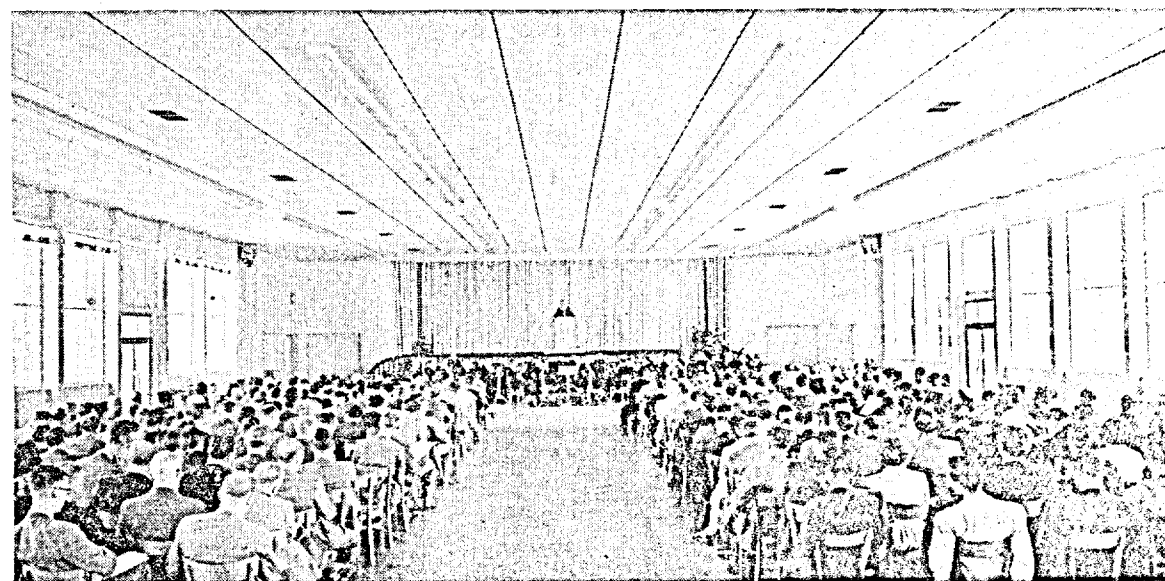
At the entrance of the new plant in Wiesloch, plaques welcome our visitors with the following wording .

“ This manufacturing plant, built within 12 months, is dedicated to the Printers of the World. Original Heidelberg Printing Machines have earned a name for unparalleled efficiency, and in the years to come, our production in this plant will maintain and enhance that tradition. On 13 July 1957, the inauguration ceremony was performed by Mr. Hubert H. A. Sternberg, who planned the factory layout. More than, 3,000 employees sent their greetings to the Printers of the World, who upto that date were operating more than 80,000 Heidelbergers.

The operation of the factory and the Production Lines was then started by our skilled workers and supervised by our foremen, controllers, department heads and the engineers, all of whom will earnestly strive to provide the Graphic Arts Industry throughout the world with machines of the highest standard, thereby serving the well-being of peoples of all nations. ”



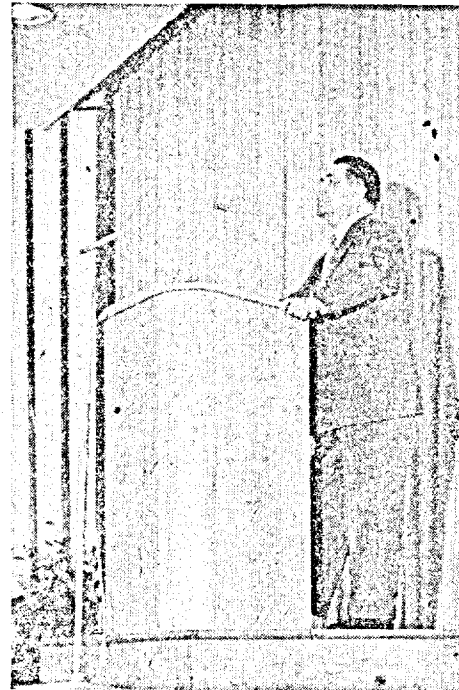
On Saturday morning, buses and own cars took the guests and members of the factory to the new plant at Wiesloch. The car convoy on the Autobahn had a length of more than 2 miles.



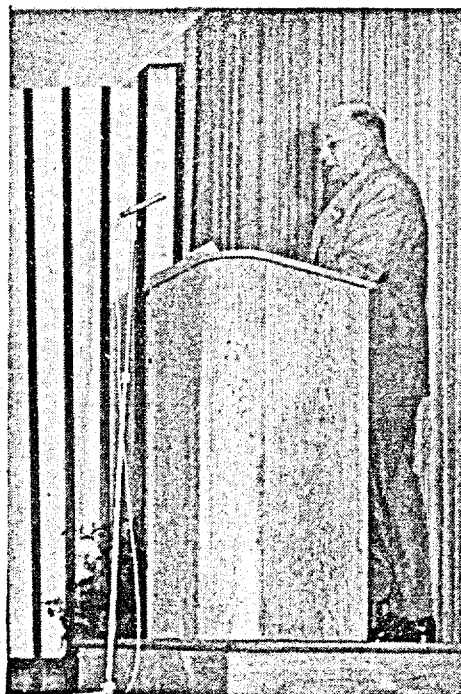
During the Dedication Ceremonies, the orchestra of the National Theater Mannheim played, and then Managing Director, Mr. Hubert H. A. Sternberg, delivered his inauguration address.



The inauguration address of Managing Director, Mr. Hubert H. A. Sternberg



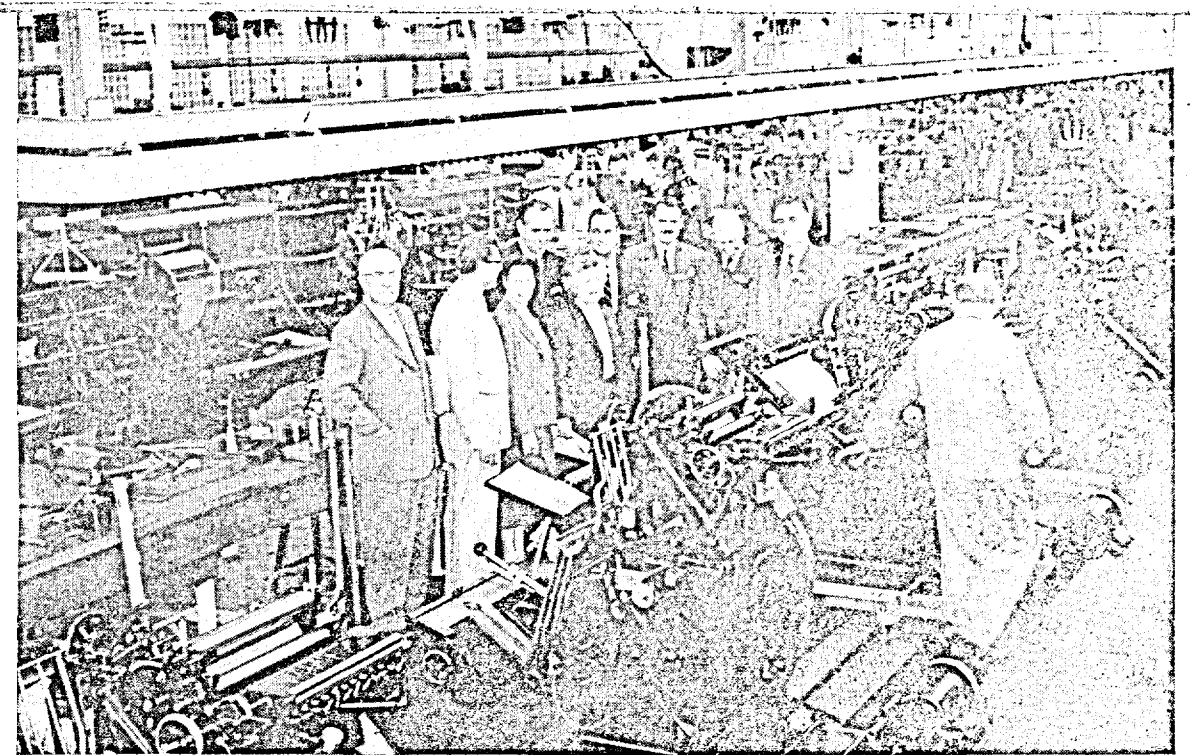
Address by Director Dr. Ludwig Henrici



Mr. Hunziker spoke on behalf of the foreign representatives



Mr. Boos spoke on behalf of the German representatives



(Top)

Following the opening ceremonies, a factory inspection took place. One of the highlights of the tour was the inspection of one of the large 826 ft. long manufacturing halls where our 10×15" and 12×18" Original Heidelbergs are machined and assembled.

(Bottom)

View of one of the 826 ft. long manufacturing halls of the Plant Wiesloch of Schnellpressenfabrik AG Heidelberg. Planning was based on the principle to provide an utmost degree of economy in production, to give the workmen good work places under excellent lighting conditions and to improve general working conditions.





(Top)

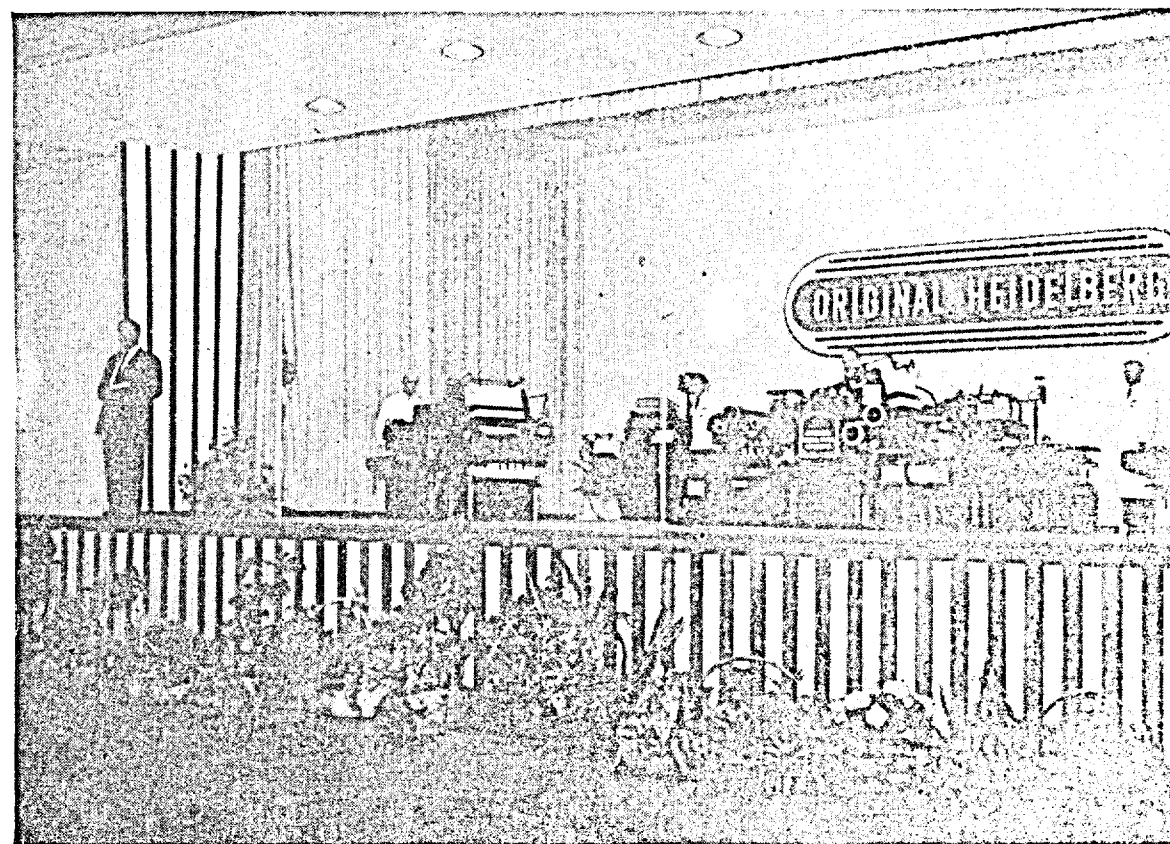
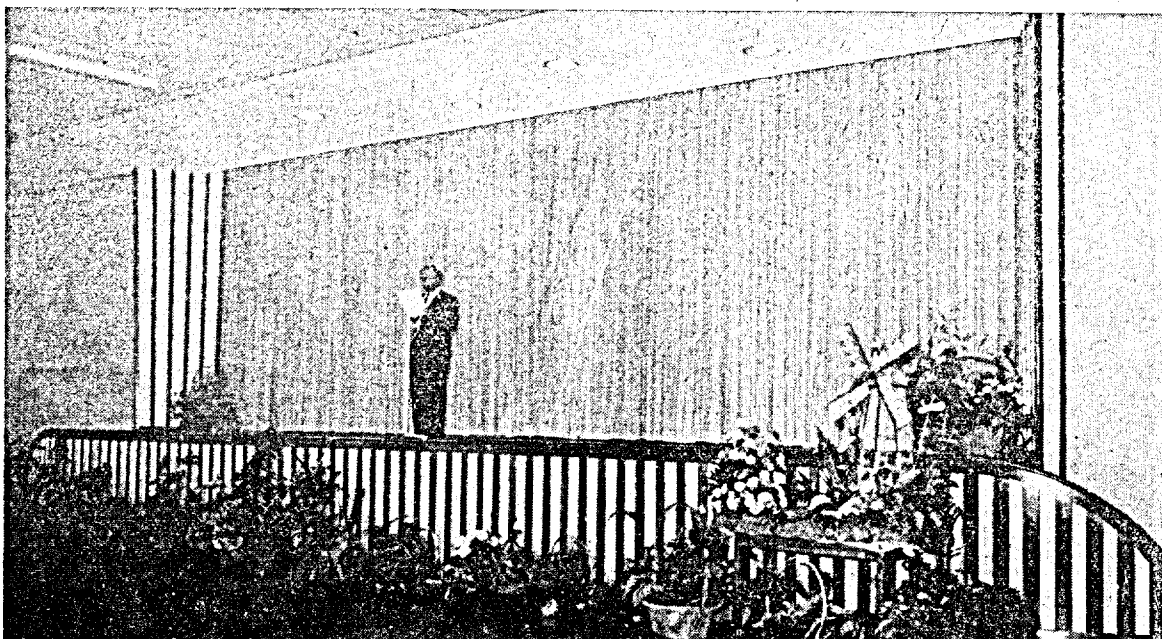
The Wiesloch plant. The assembly lines for the final assembly of the 10×15" and 12×18" Original Heidelbergs is about twice as long as the old assembly line in the factory at Heidelberg.

-(Bottom)

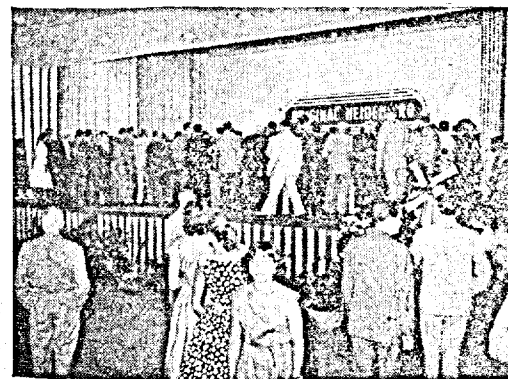
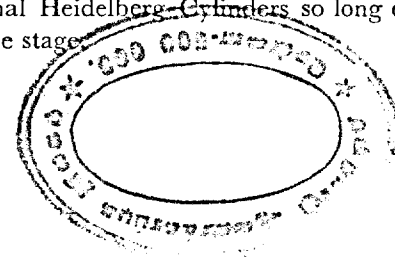
In front of the closed curtain, Managing Director Mr. Hubert H. A. Sternberg then addressed the assembly as follows:

"Dear Members of the Heidelberg Family:

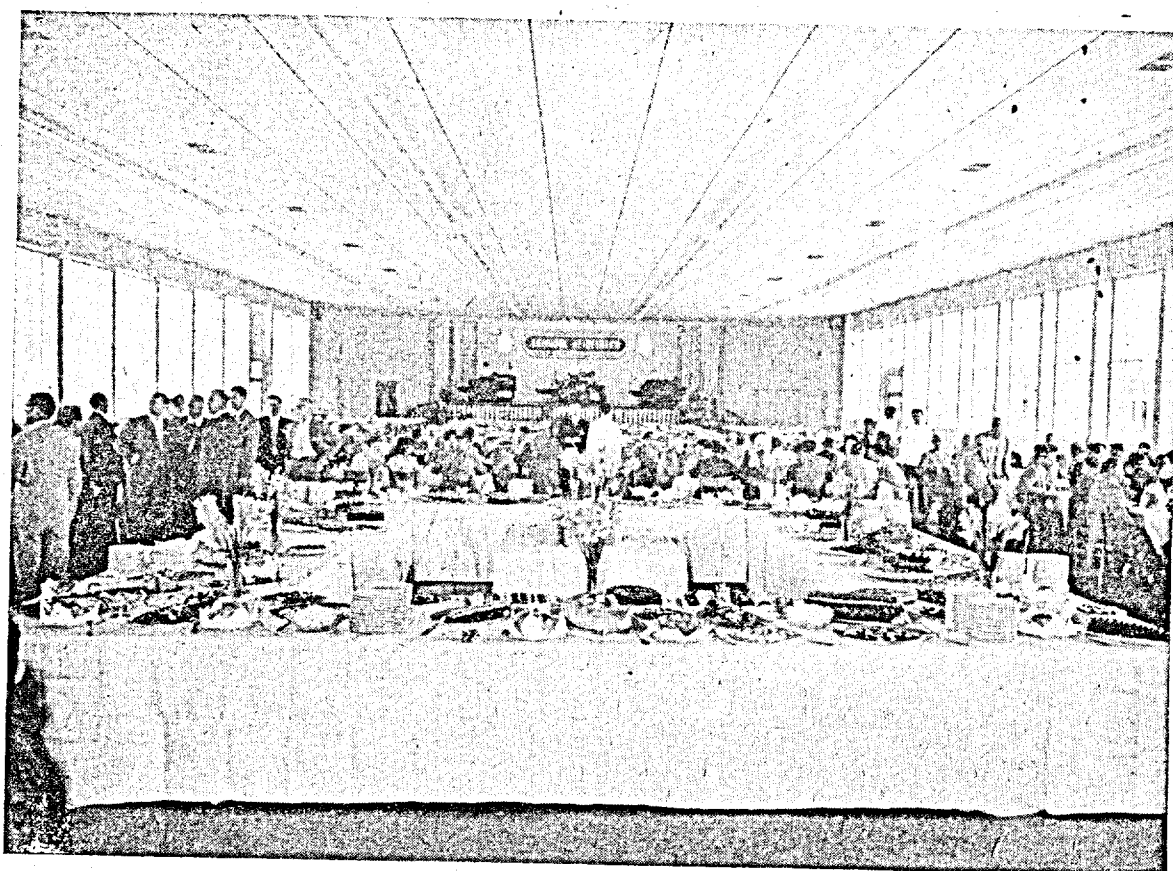
I hope the inspection of half of the new plant at Wiesloch has not made you too tired. For what will now happen is what you have been awaiting for a long time. I hope that our surprise will be successful when I now call: 'Open — Sesame!'" and then ...



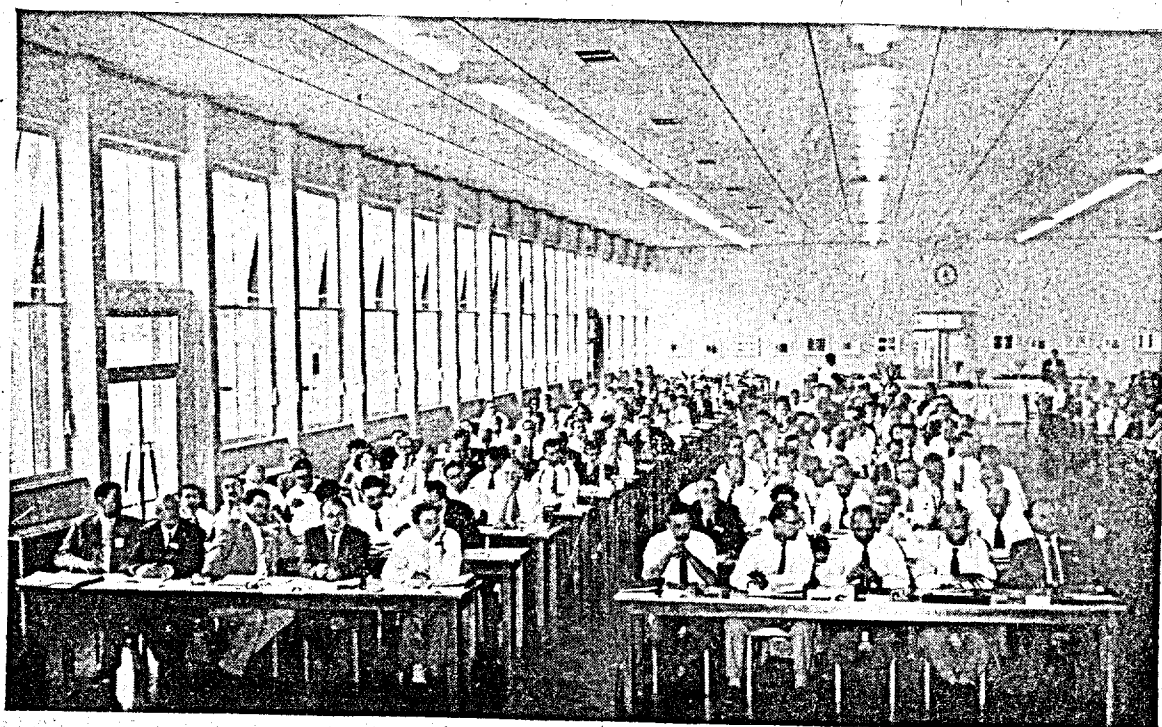
...the curtain opened and six Original Heidelbergs, among them three of the 15×20½" Original Heidelberg-Cylinders so long expected were running at top speeds on the stage.



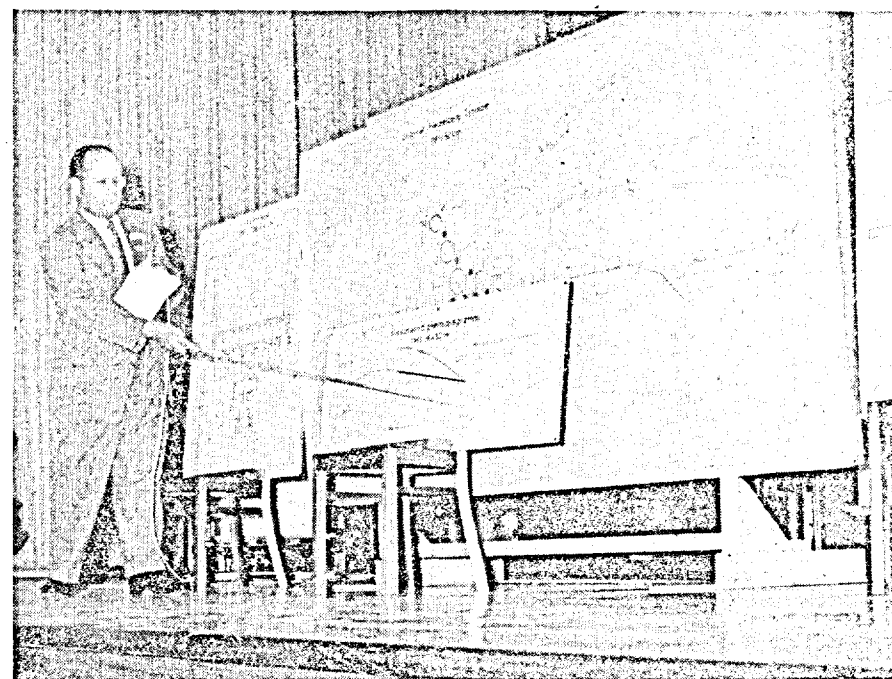
And then 300 representatives dashed to the stage to have a closer look at the machines.



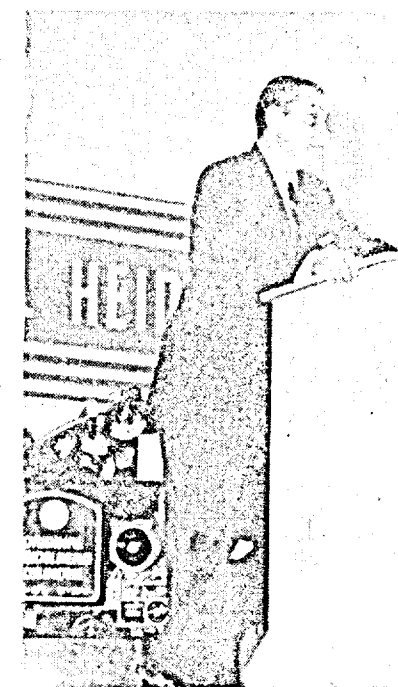
A cold lunch with refreshments united all our guests to a well-earned meal.



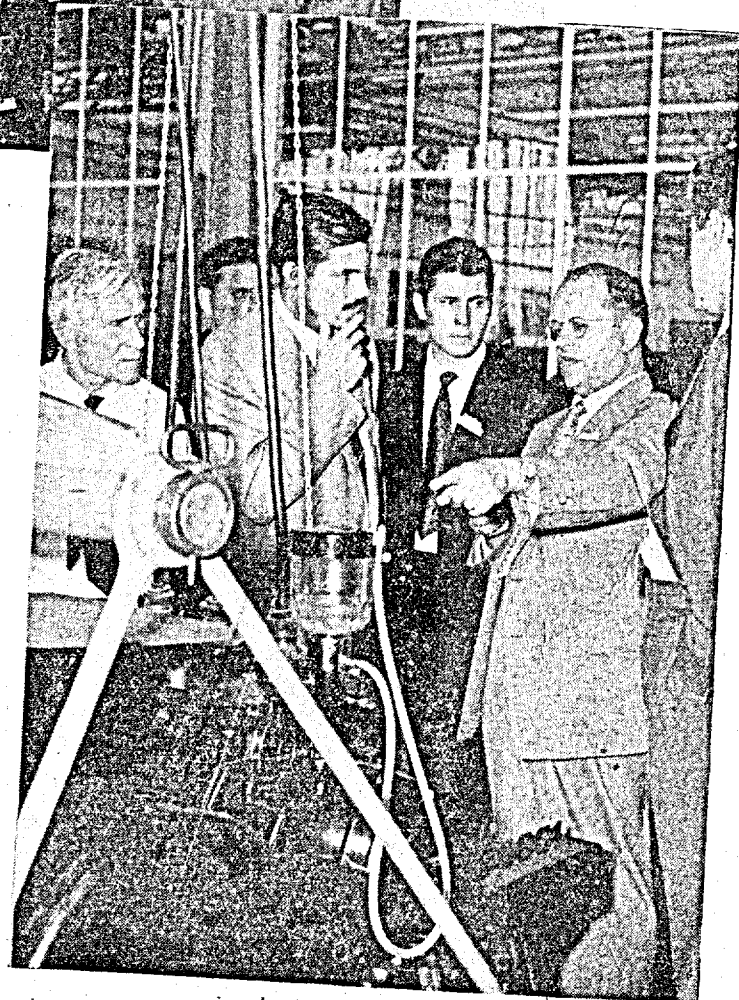
Later in the afternoon, the representatives' meeting took place in the course of which Mr. Sternberg announced the policy for future sales developments.



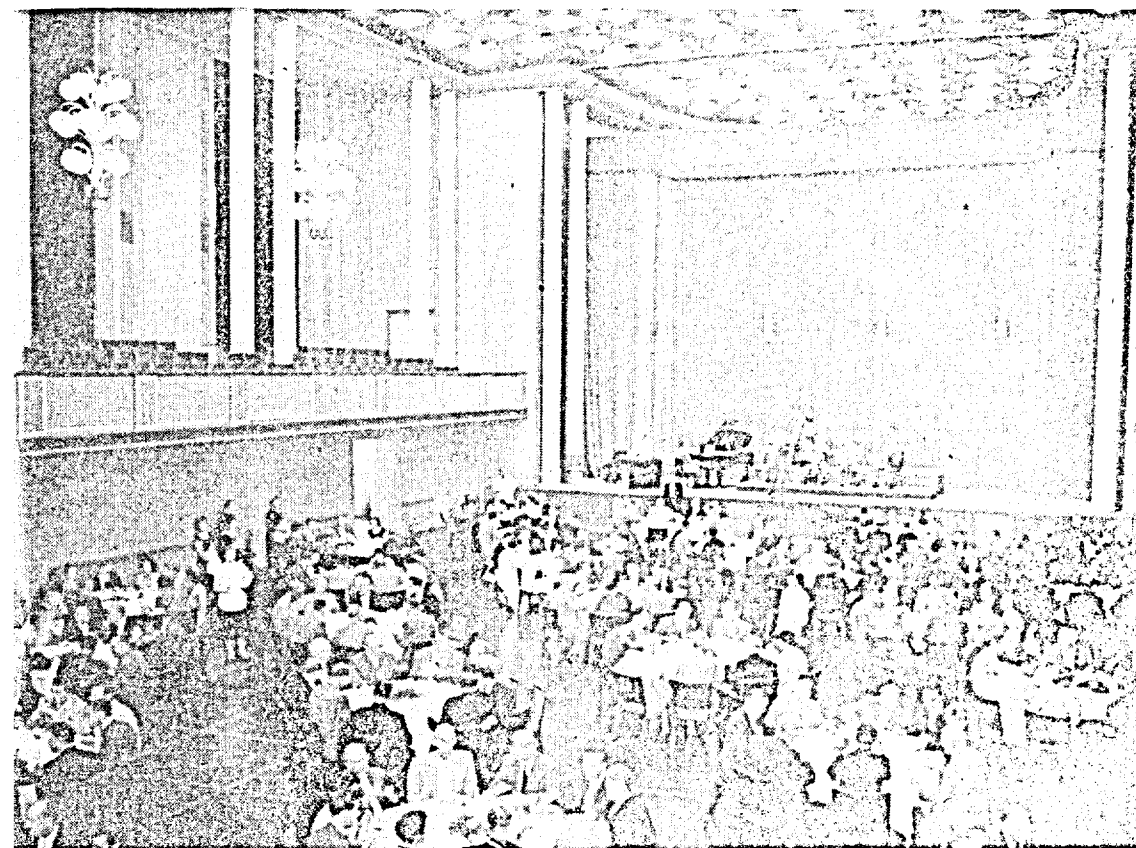
Our Chief Designer and leading Engineer, Mr. Artur Buttner, then explained the technical features of the  $15 \times 20\frac{1}{2}$ " Original Heidelberg Cylinder.



This was followed by reports of Mr. Bauer, Production Manager of the firm Hornung, Stuttgart, and Mr. W. P. Lauffs of Los Angeles on the experience they had in printing for two years with the  $15 \times 20\frac{1}{2}$ " Original Heidelberg Cylinder.



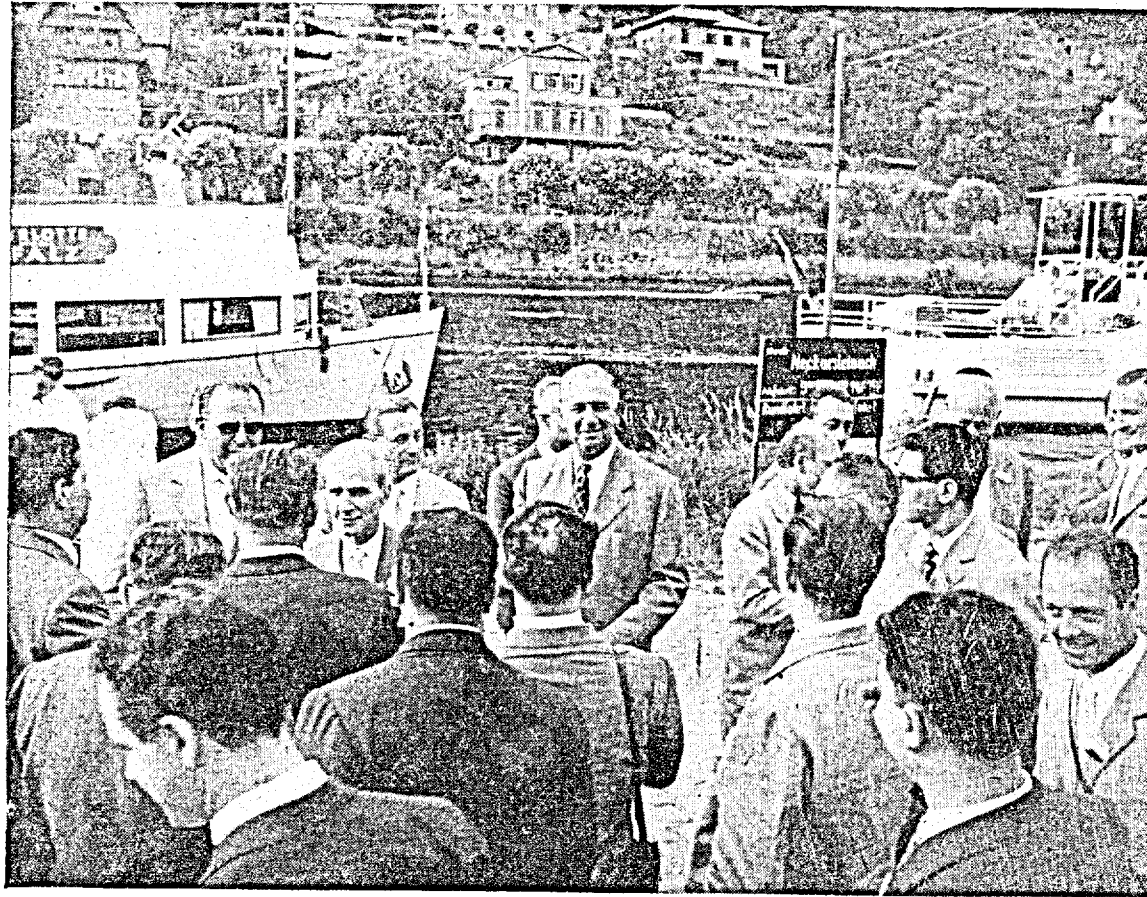
An inspection of the manufacturing hall for the 15×20½" Original Heidelberg Cylinder and the newly developed gantries and lifting devices also took place in the afternoon.



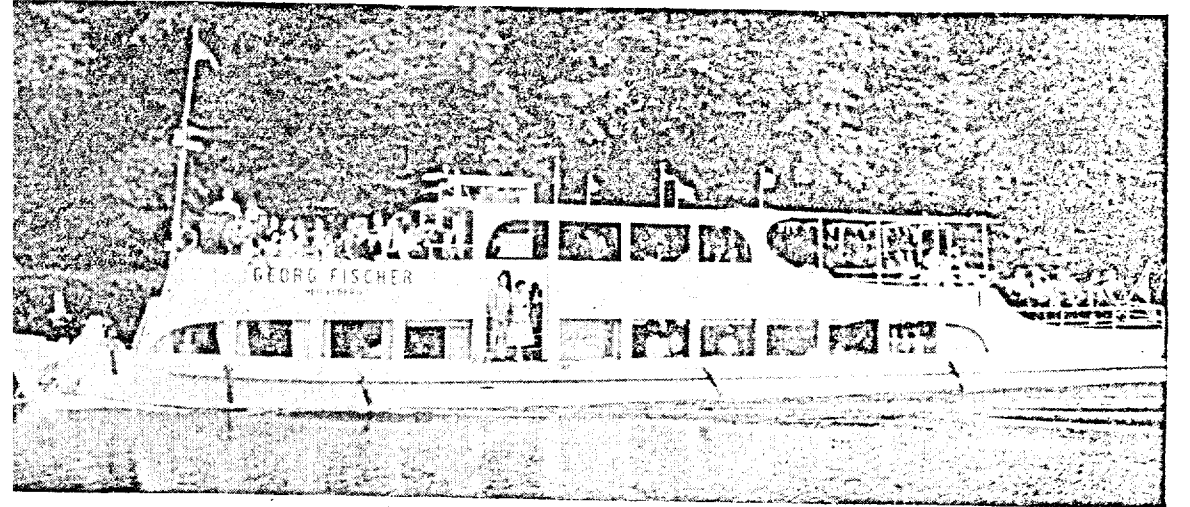
The evening united all our guests and members of Schnellpressenfabrik for a joint banquet at Mannheim.



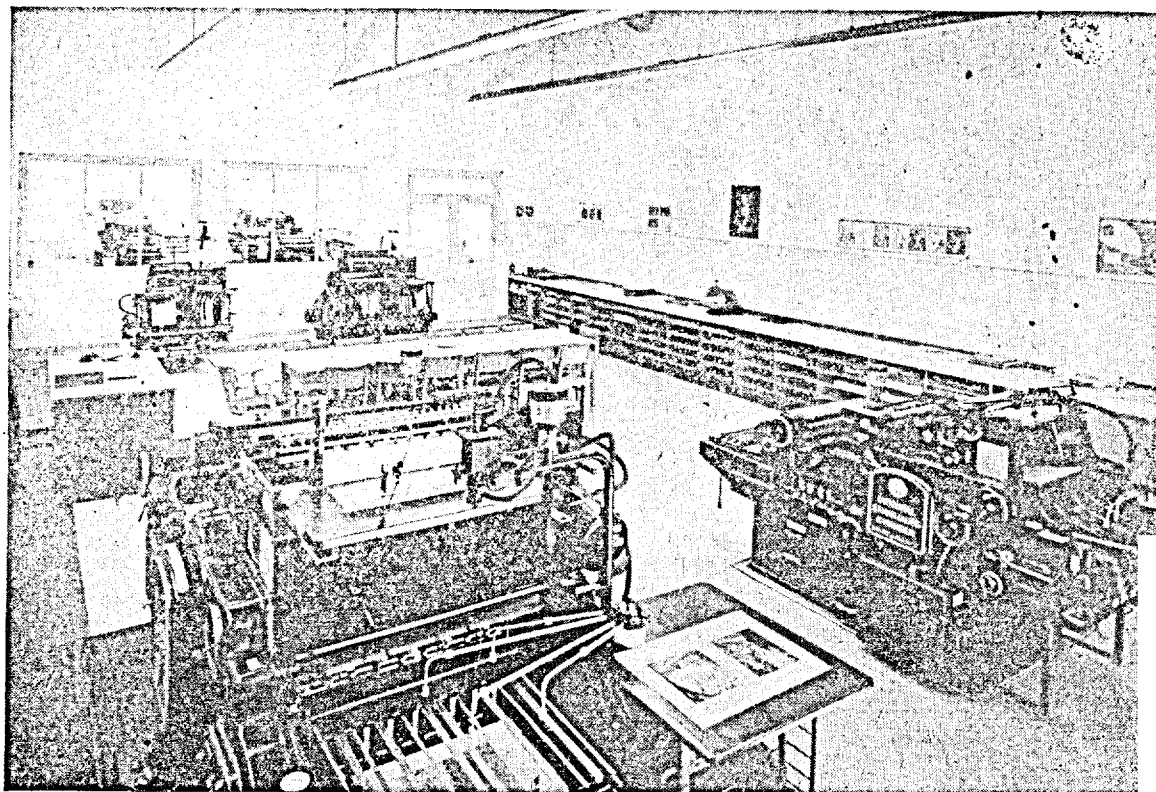
Spirits were high.



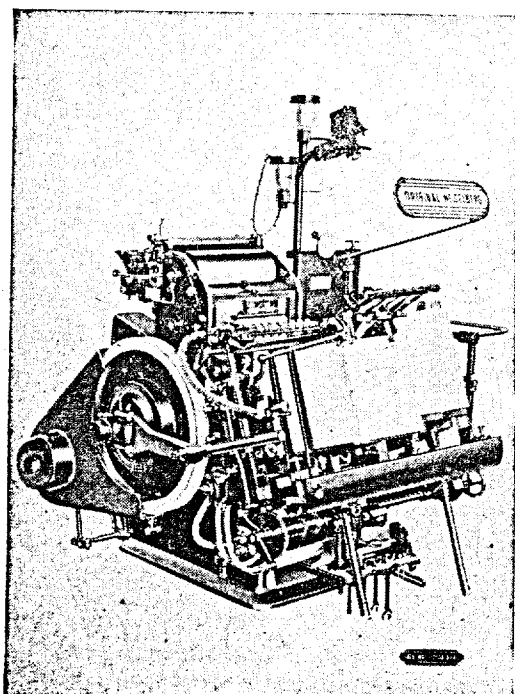
Next morning, Mr. Sternberg welcomed our guests to a joint river boat trip.



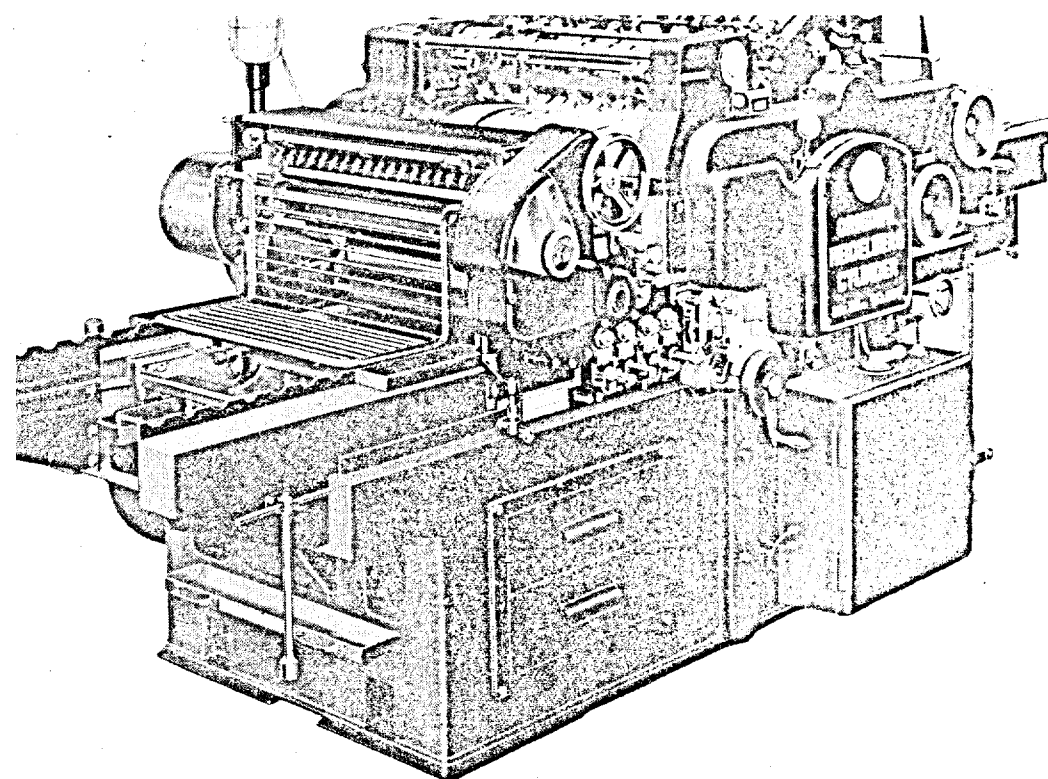
During a lovely trip through the Neckar valley, management negotiated aboard the "Liselotte von der Pfalz" with the various representatives and furnished details for the new sales policy.



Monday was reserved for further sales negotiations and inspections of the factory in Heidelberg. One of the highlights of the Heidelberg tour was the inspection of the new Heidelberg Pressmen's School. In future two training classes will be conducted.

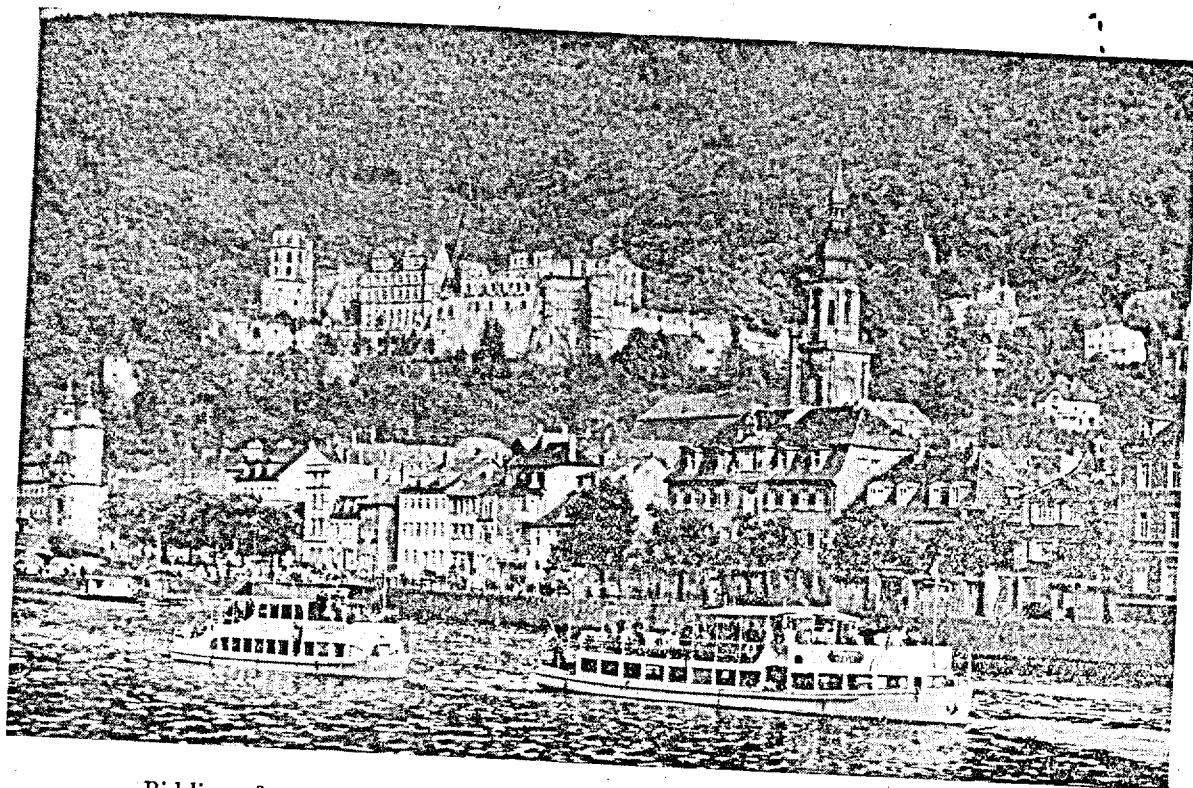


The 10×15" Original Heidelberg and its bigger brother 12×18½" Original Heidelberg will further on still be the "bread and butter" machines and our representatives will try to increase the sales figures by ensuring improved working and coverage of customers.



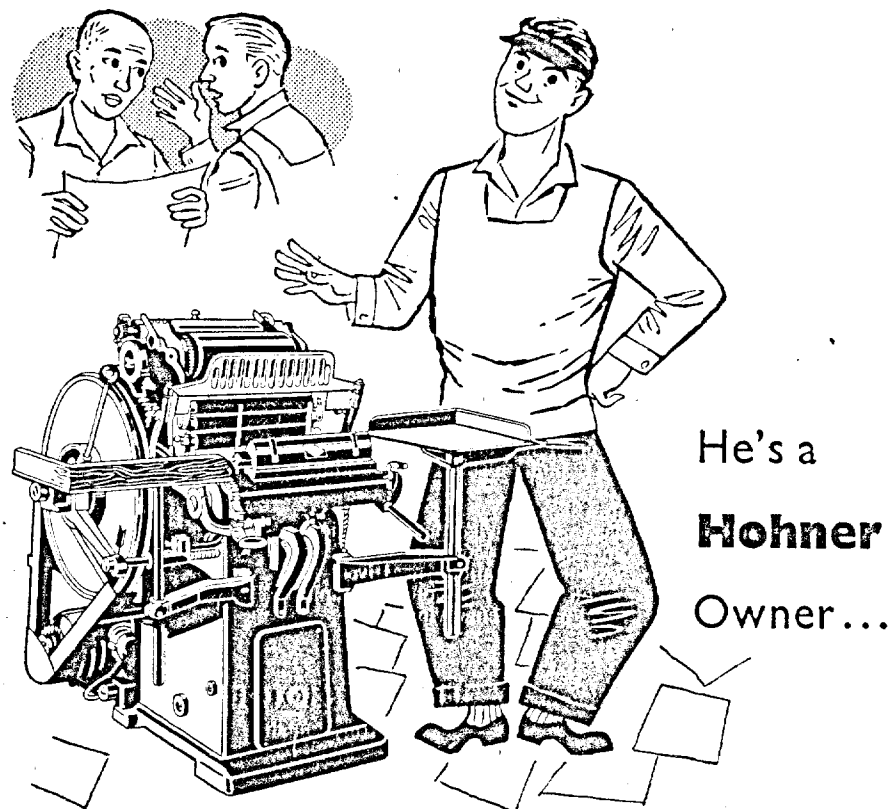
With the new 15×20½" Original Heidelberg Cylinder we are rounding off our range of manufacture. This will provide our sales and service organisation with new profit possibilities and a well-founded and convincing sales programme.

According to the opinion of our representatives after this meeting, we are convinced that this machine will conquer the market in that sheet size which is in any way comparable.



Bidding farewell, here is a view of the Heidelberg Castle and our two Neckar boats returning home.

We extend our greetings to all representatives throughout world, and particularly to those who did not have the opportunity to participate in these unforgettable three days.



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### Detergents for Letterpress Printers

PETROLEUM distillate is one of the detergents listed in PATRA'S latest Letterpress Conference Manual, Detergents for Letterpress Printing, which has been issued to members of the Association. The publication of this manual follows a Conference recommendation that 'some detergent, neither toxic nor unduly inflammable, should be developed to replace paraffin'.

At the outset, the Manual states that the ideal, universal, cheap, non-toxic and non-inflammable detergent for the various letterpress operations does not exist, nor is it likely to exist as far as can be seen.

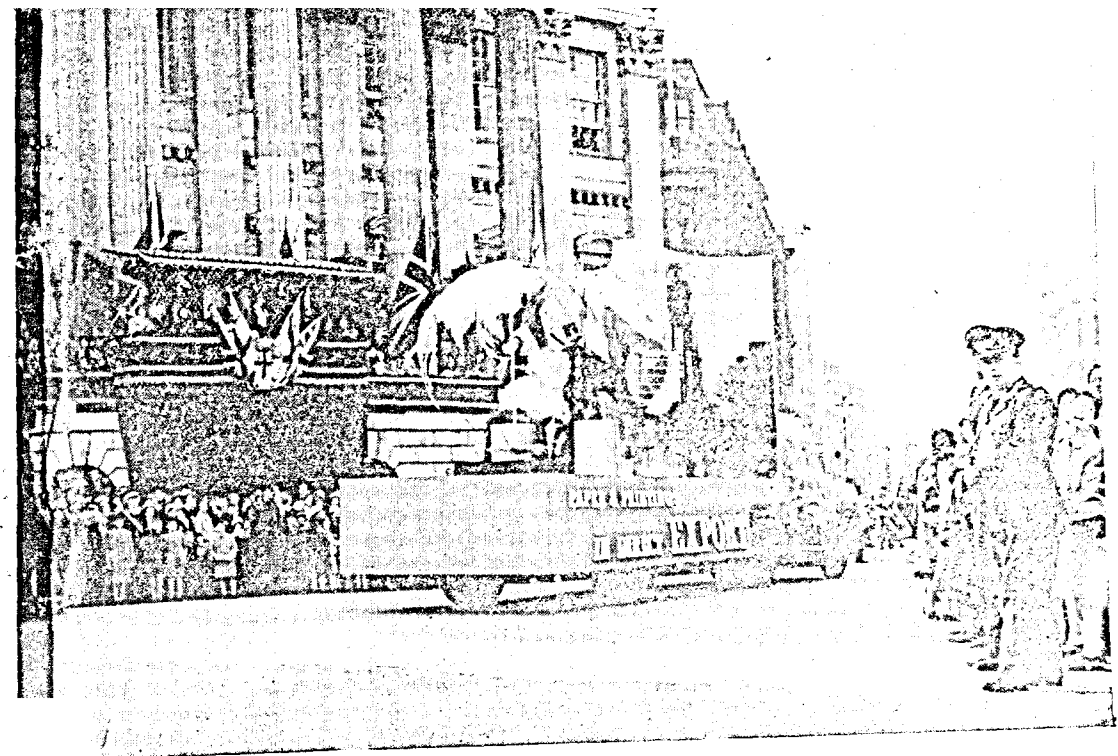
It is noted that detergents are of two kinds—organic solvents such as petrol, paraffin, trichlorethylene and solutions of chemicals in water, e.g. lye. Both have disadvantages; of the former most are inflammable and those which are not have toxic properties; and the latter cannot be used where there is likelihood of contact with steel machinery and equipment, with wooden block mounts, with composition rollers or with zincs or magnesium blocks on account of the risk of corrosion.

Since, therefore, most of the detergents have to be of the first category, various precautions must be taken in using them. In this connection, the Manual emphasises that they should always be used under good conditions of ventilation and never be used near naked flames. Further, as there is a risk of dermatitis with some people, excessive amounts of all detergents should be kept off the skin.

Another important point raised is that the detergents listed will destroy the adhesive properties of most pressure-sensitive block mounting films. To overcome this the edges of the block and mount should be sealed with a binders' flexible glue or a plasticised shellac.

Advice on using suitable detergents is given for the following typical letterpress operations: forme cleaning, washing-up machines and rollers, removing dried ink from the forme and the cleaning of plastic and rubber plates.

For each of the various detergents recommended for these operations notes are given on their use and precautions that should be taken.



One of the Floats in the Pageant



A closeup of the new Lord Mayor of London, Sir Denis H. Truscott looking out of his Golden Coach during the Lord Mayor's Show.

The  
Lord  
Mayor's  
Show,  
London  
Nov. 1957

## THE LORD MAYORS' SHOW LONDON - NOVEMBER 1957

IT HAS become a tradition that the Lord Mayor's show represents a theme associated with the interest of the new Lord Mayor. The new Lord Mayor is Sir Dennis H. Truscott. He is the chairman and joint managing director of Brown, Knight & Truscott Ltd. of Tonbridge and London. He is aged 49 and is the third member of his family to hold office in 77 years. At present he is the President of the Printing, Packing and Allied Trades Research Association (PATRA). England spends more than £ 140,000 each year on development and research in printing and allied trades, to increase the industry's efficiency and output and so to meet the ever growing demand for print.

Each year the newly elected Mayor rides through the city in procession to take oath of office before the Lord Chief Justice and to lay claims to the city's ancient rights and privileges. The Lord Mayor's show dates from 1215. The first waterborne procession took place in 1453. In later years the Mayor rode on horse back, but in 1711 a coach was used for the first time; the Lord Mayor in the previous year having fallen from his horse. The present Lord Mayor's coach is 200 years old this year.

The theme of this year's pageant was "Paper and Printing Keeps the World Turning". The theme was conveyed by means of floats and walking figures. The slogan of the theme was illustrated by three large cogs. The first, a driving cog, having slots in it to periodically disclose the constituent parts of printing—Paper, ink, machinery, men—and the cogs connected to a large globe which turned slowly. The globe used was the one used by H. R. H. the Duke of Edinburgh for his TV programme in the International Geophysical year.

Among the paper manufacturers who spon-

sored the pageant was Ms. Wiggins Teape & Co. Ltd., whose papers are well known in India through their Indian branches Ms. Wiggins Teape & Alex Pirie (Export) Ltd., Calcutta and Bombay and Ms. Charles Morgan & Co Ltd. in Madras.

### PRIZES FOR CHILDREN'S BOOK MANUSCRIPTS

To stimulate and encourage the writing and illustrating of good children's books, the Southern Languages Book Trust announces a prize contest for original manuscripts in any one of the following five languages: Tamil, Telugu, Malayalam, Kannada and English. There will be eight prizes in all, one for factual and another for imaginative manuscripts in each of the four age groups, namely, 12-15; 9-12; 6-9; and 3-6. Each prize will amount to Rs. 700, comprising an outright award of Rs. 350 and an advance against royalties of Rs. 350 additional. For the 3-6 age group, prizes will be awarded for collaboration of artist and author, or to story and pictures done by the same person.

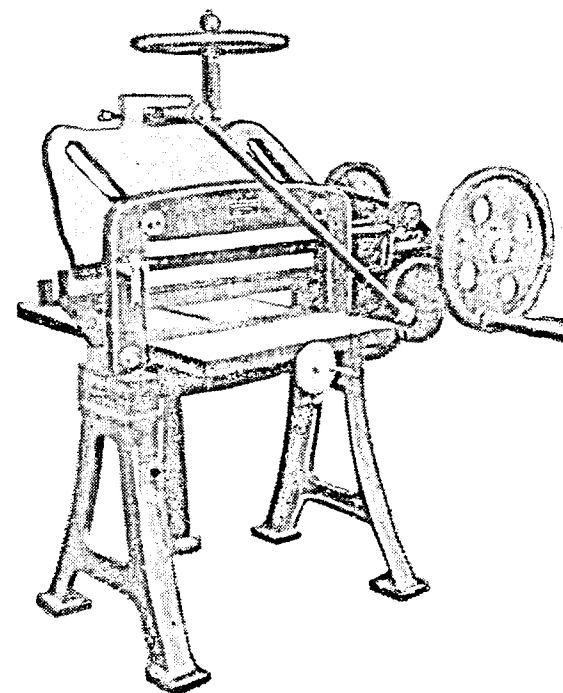
Manuscripts in the Imaginative categories may be stories, humour poetry or fairy tales, but need not be limited to these types, of writing. Manuscripts in the Factual categories may be biographical, historical, scientific, or combinations of several, but need not be limited to these.

The manuscripts will be judged by competent persons in each language.

The Trust proposes to arrange for the publication of the prize winning manuscripts in all four South Indian languages, other than English, on a royalty basis.

Those who wish to participate in the Contest are requested to submit their manuscripts to Special Officer for Children's Books, Southern Languages Book Trust, 3, Wheatcroft Road, Nungambakkam, Madras, 31, on or before the 15th of February, 1958. Complete rules of the Contest are available at the above address.

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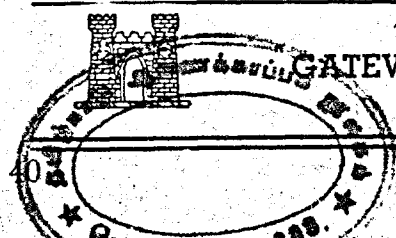
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No. 6

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S. SRINIVASA RAO, L.P.T.

*Hony. Editor*

V. R. SIVARAM, L.P.T.

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- 16 NEWS

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## Molten Metal Flows Upward in Timson Casting Box

GETTING the molten metal to flow 'upwards' from the melting pot into the casting box is, according to Timsons of Kettering and London, largely the answer to the perennial printer's problem of porous plates. Porosity in curved plates is due to air bubbles being trapped in the mould when the metal is poured in.

It is reasonable to assume that if metal is injected from the bottom of the mould, air bubbles will be driven in front of the intruding metal and the air will find its way out through small vents at the top.

Timsons have achieved this by arranging their new semi-automatic casting box so that the connecting valve between the crucible and the mould is at the foot of the box and that, when tilted for pouring, the top of the mould is below the metal level.

Apart from porosity, the two major causes of weakness in curved plates are 'sinks' caused by too rapid chilling of the surface of the metal so forming a skin behind which the metal cools and contracts to form a hollow or sunken surface; and 'cokey face' due to metal being too hot and scorching the face of the flong. This produces minute gas bubbles which collect on the face of the plate.

### The Remedy

The experts say that the remedy for 'sinks' is to raise the temperature of the metal and to see that the mould is not too cold.

Reduction of the metal temperature is the cure for 'cokey face'.

While not denying the need for a skilled operator, Timsons feel that by a generous arrangement of thermostatically-controlled heater throughout the machine, their casting box goes a long way towards solving these three difficulties, which have probably caused

more heart-burning than any of the many complex and varied processes used in the printing industry.

### Heating Arrangement

There are two electric heaters in the crucible itself and these enable a full pot of some 3½ cwt. of metal to reach the working temperature in the quickest possible time. In the valve through which the molten metal passes to reach the mould, there are additional heaters, while yet another heater at the farther end of the casting box ensures itself that the chilling is not too rapid.

### Heat Conserved

The direct connection of the casting box with the crucible by the heated valve prevents any loss of temperature and eliminates exposure to atmospheric conditions.

The ribbed-back plate is cast without a tail which, apart from conserving metal, saves a further trimming operation.

Mat loading is simple. The tail fits into a slot and clamps at the side are brought into position in a matter of a few seconds. An additional guarantee of complete rigidity is the suction created by a pump drawing air out of the perforated bed plate of the box.

Minimum heat loss and maximum fuel saving is assured by the complete fibreglass insulation, even down to the lid of the melting-pot.

This machine is not designed for the large scale production of stereos. It is built for the fairly fast handling of high-quality plates at speeds of around six to eight every half-hour.

Timsons make these casting boxes as ancillary equipment for their rotary presses, which cover a wide range of sizes.

JANUARY 1958

12 பாயின்ட் பவானி ரோமன்

ஒருவன் தன்னைத்தான் நேசிப்பானாகில், அவன் தன்னையே கவனமாய்க் காத்துவரவேண்டும். இரவில் முன்றுயாமங்களில் ஒன்றிலாயினும் ஞானி விழிப்புடன் கவனமாயிருப்பானாக.

ஒவ்வொரு மனிதனும் முதலில் தான் நன்னெறியில் நிலை பெறவேண்டும்; பிறகுதான் மற்றவர்களுக்குப் போதிக்கவேண்டும். இத்தகைய ஞானி 'கிலேசமடைவதில்லை'.

மற்றவர்களுக்குப் போதிக்கிறபடி ஒருவன் தன்னைப் பண்படுத்திக் கொள்ளட்டும். தன்னை நன்கு அடக்கியாண்ட பிறகு, பிறரை அடக்கியான முடியும். ஏனெனில் தன்னை அடக்கிக் கொள்வதே கடினமான காரியம்.

ஒருவன் தானே தனக்குத் தலைவன். வேறு யார் தலைவனாயிருக்க முடியும்? தன்னை நன்கு அடக்கிவைத்துக் கொண்டால் ஒருவன் பெறுதற்கரிய தலைவனைப் பெற்றவனாவான்.

முடனுடைய பாவம் அவனிடமே பிறந்தது, அவனே படைத்தது, வயிரம் மற்ற மனிதனை அறுப்பதுபோல், அவன் செய்த பாவமே அவனை அழித்துவிடும்.

மாலுவக் கொடி கடம்ப மரத்தைச் சுற்றிப் படர்ந்து மரத்தையே அழுக்கி விடுவதுபோல், ஒருவனுடைய தீவினையே அவனை அழுக்கிவிடுகிறது; பகைவர் செய்யவிரும்பும் தீமையை அவன் தானாகவே செய்துகொள்கிறான்.

ஷெ பவானி ரோமன் எழுத்துக்கள்  
18, 14, 12, 11, 10, 9 பாயிண்டுகளில் கிடைக்கும்

தயாரிப்போர்:  
நார்ட்டன் அண்டு கம்பெனி  
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தூளை, சென்னை-7

## ESPARTO PAPERS

By

F. A. CRAIG

(*Papermaking Fibres* states that esparto is self-seeding and grows in clumps. The plant carries a long straight stem sheathed by three leaves (only these leaves are used for papermaking). A feature of the leaf is its peculiar power to fold longitudinally and so conserve moisture during the prevailing dry weather. Arab labourers pull the leaves from the root and gather into sheaves. Camels carry the sheaves to a depot where the grass is dried in the sun for two or three weeks prior to shipment.)

*Esparto Grass* is native to large coastal areas in North Africa and to certain smaller areas in the south of Spain. For the most part it grows in a wild state, but it is also cultivated, especially in Spain. The grass, which in its different varieties attains a length of from 12 to 30 inches, is round, tough and wiry. Indigenously, it has long been used for the making of ropes, mats, baskets and slippers. It was first introduced to this country England as a paper-making fibre about 1855 by Thomas Routledge, one time paper maker at Shotley Grove in Durham, a mill now long defunct. At that time wood pulp had not become established and Routledge had the idea that esparto would serve as a substitute for rags, the supply of which was rapidly becoming inadequate to meet the growing demand for paper. After many disappointments Routledge, from 1860 onwards, had the satisfaction of seeing esparto widely adopted by British mills, not merely as a material complementary to rags but as a fibre in its own right producing a wide range of papers distinctive in character.

### Varieties and Properties

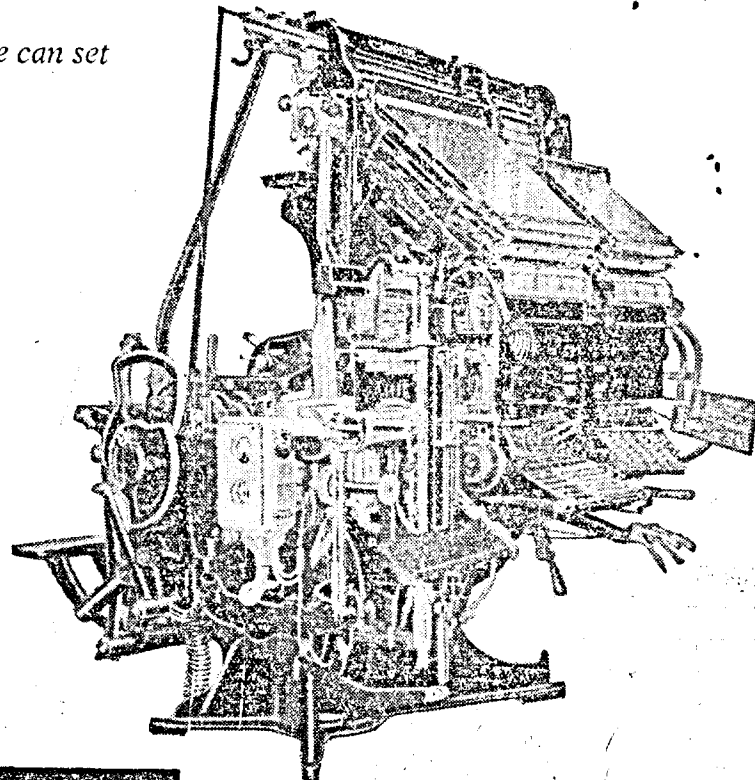
*Spanish Grass*, which is of one variety only is generally recognized as being the best quality. It also gives the highest yield of bleached pulp which is about fifty per cent. Of African grass there are several qualities all of which take

their names from the district in which they were grown or of the port from which they were shipped. Hence there are Uran, Arzew, Algiers, Philippeville and Bona from Algeria; Tunis, Susa, Sfax and Gabes from Tunisia, and Tripoli from Tripolitania. These grasses vary quite considerably in external appearance, particularly relative to length, thickness, colour and cleanliness, and their yield of bleached pulp can vary from forty-two per cent to forty-eight per cent. Speaking generally the finer qualities are the most suitable for the production of writings and fine printings, while the coarser varieties are better adapted for the making of high bulking book papers. The grass is shipped in large, bulky bales that weigh about 3½ cwts bound with esparto ropes or iron bands. Occasionally a portion of a consignment adventitiously arrives at the mill in a loose condition with the result that the grass storage shed has for a time the appearance of a farmer's barn. The ultimate esparto fibre is short, fine, smooth and cylindrical with pointed ends. At 1.5 mm. it is one of the shortest of the common paper making fibres being less than half the length of the coniferous wood fibre, which accounts for the low tearing strength of esparto papers. But the outstanding property of the esparto fibre is that it can produce printing papers which are close in texture and

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surface, but which also possess high bulk and opacity. *Esparto papers also have the lowest degree of expansion when moistened which makes them eminently suitable for achieving good colour register in printing.*

### Preparatory and Making Operations

*Esparto Grass* is harvested by pulling it from the soft, sandy soil in which it grows, it is therefore liable to carry a considerable quantity of roots, weeds, sand and other foreign matter which, as far as possible, and should be eliminated before the boiling operation takes place. The roots, which present the chief difficulty, are hard and indigestible, and were they not removed from the pulp, they would be broken up in the beating operation and result in a specky, shivy, unsightly, sheet. Originally, *esparto* was hand-selected by women in a manner similar to that still employed in the sorting of rags. The grass was spread out on wire-mesh tables, the women carefully removing roots and weeds, while the sand and other mineral matter dropped through the mesh. For many years now, however, the cleaning of the grass has been done entirely by mechanical means.

**Dusting:** The considerable amount of dust which is always present in *esparto* is removed by passing the grass through a high-speed conical duster or willow located on ground level in the grass storage shed. The grass is then conveyed by a continuous elevator to the grass boilers which are situated in the highest part of the mill.

**Boiling:** Prior to around 1920 *esparto* grass was cooked in 2½/3 ton digesters, but since that period the Sinclair vomiting type of boiler of 5 tons capacity has come into general use. The Chemical used is, invariably, caustic soda. The Sinclair boiler is an upright cylinder with a domed top which houses a perforated baffle plate or spreader and it has a false bottom of perforated plates on which the charge of grass rests, allowing the cooking liquor to drain to the compartment below. At opposite sides here are two vertical pipes leading from the lowest point in the boiler to the spreader at the top. When the boiler is charged steam entering

at the bottom forces the liquor up the pipes to the spreader, by which means it is sprayed over the grass through which it runs and drains to the bottom to re-start the cycle. In the cooking operation there are three variable factors, viz: the strength of the liquor, the steam pressure and the length of time the process continues, any or all of which may be varied to suit the particular grade of grass in use or the specific results required. When the boiling is completed, the spent liquor is drained off and run to storage tanks; subsequently it is subjected to an auxiliary process to recover the soda it contains, an operation which, for several reasons, is of the highest importance to every *esparto* mill.

After boiling, the *esparto*, though still grass-like in form is soft and mushy, dark olive green to brown in colour, with a strong, pungent odour. It receives its preliminary washing with the aid of a powerful water jet, through the emptying valve to a storage chest below. This water jet, which works at a pressure of 80 p.s.i. and is not unlike the business end of a fireman's hose, also transforms the *esparto* from its grass-like form into a soft, pulpy mass ready for the next operation.

**Washing and Bleaching:** All *esparto* grass is bleached from a pale cream to a good white colour; there are no semi-bleached or unbleached varieties. Generally the bleaching is conducted semi continuously in a series of large vertical cylindrical vessels, termed bleaching towers, usually six to twelve in number according to the rate of output required. The grass if first washed continuously in a large breaker until the wash water is clear and then the requisite quantity of bleaching liquor is added to the charge, which is then pumped to the first tower from whence it is pumped successively through the whole of the battery. By the time the pulp reaches the last tower it is bleached to the required colour and the chlorine of the bleaching liquor has been entirely consumed. The bleached pulp, now at the half-stuff stage, is then concentrated to a consistency suitable for passing on to the beaters. The *esparto* roots, which at one time

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were painfully picked out of the bleaching engines by hand, are now completely removed by an extensive screening system at this stage.

**Beating:** The treatment of esparto at the beating stage demands a technique slightly different from that of coniferous wood-pulp and considerably different from that required for rag. The chief reason for this is the natural lengths of the respective fibres. Whereas rag and wood pulp both require reduction in length, esparto is so short that in many cases preservation of length is imperative. Traditionally, esparto was beaten in Hollanders, but for many years it was also successfully, treated in Tower and Taylor beaters, the light rolls of which were adequate to deal with a short-fibred material. Today good class esparto writings and printings are being made in mills that possess no beaters, they having gone over to continuous beating with modern units. The degree of treatment at the beating stage is of primary importance in the production of esparto papers because the effect on them of beating is most marked. A free-beaten esparto stock will produce a soft, high-bulking featherweight, while a wet-beaten stuff will produce a firm hard writing. One of the bugbears of the maker of esparto papers is a defect termed 'ricing', a peculiarity not experienced with other paper-making fibres. It gives rise to the formation of small hard lumps, of pin head size, and can occur in the boilers, at the half-stuff stage, or in the machine chests. If it is not successfully screened out it appears in the paper as small specks which are dark on the surface and translucent in the look-thro'. The occurrence of this defect has never yet been satisfactorily explained nor entirely prevented. Although the esparto fibre differs considerably from those of rag or wood-pulp when suitably treated it blends admirably with both to make a wide range of high grade writing and printing papers.

**Making:** The method of production of fine writings from esparto and part-esparto furnishes closely approximates that of rag and wood-pulp writings but in the making of esparto printings substantial advances both in machine

widths and speeds have been achieved. Some esparto mills moreover have now twin-wire machines that produce papers free from wire-mark on the underside, a feature which enhances printing quality. The short-fibred material takes the impression of the dandy roll easily, and a clear, clean watermark is one of the characteristics of the esparto paper. As the bulk of the esparto grades are required for printing they are almost invariably artificially matured to ensure that the printer gets them flat and in a condition suitable for immediate use.

#### Varieties of Esparto Papers

The term "Esparto Paper" is applied to a wide range of qualities that have a substantial proportion of esparto fibre in their furnish. The range includes writings, printings, covers, pastings, duplicators, cartridges, pulp boards, interleaving blottings and body papers for gumming, coating and enamelling. While a few of these papers may be made from 100 per cent esparto furnish the majority of them carry varying proportions of bleached sulphite wood pulp to augment the relatively low strength of this short-fibred material.

**Writings:** Small proportions of espart are frequently used in the furnish of high-grade tub sized and air dried writings, but the lower grade E.S. cream woves and laids are often composed of a high percentage of esparto. These papers, which are of close formation and have good opacity, are used extensively for the making of personal stationery and white commercial envelopes.

**Printings:** This class includes M/F and S/C printings, lithos and imitation art. They are either pure or principally esparto furnish. Their chief characteristic is a dimensional stability that promotes good register on the printing machine. As a further aid to ensuring greatest resistance to expansion they are usually made the narrow way across the machine. Feather-weights and antiques are also in the printings class but they differ considerably from the other printings. Made from 100 per cent esparto and carrying no loading, they are the bulkiest papers made.

They are used chiefly as book papers for the cheap popular novel class. Resulting from their treatment, both in the beaters and on the machine, they are soft and spongy; in printing they tend to pick and fluff badly.

*Pastings:* These are hard-sized, thin, white or coloured papers usually made from an esparto-sulphite mixutre. They are used extensively for covering strawboard cartons and showcards. The principal properties required of this class are that they should be free of pinholes and lie flat after pasting.

*Duplicators* are made to various degrees of absorbency according to their particular use. They are used on duplicating machines where the rapid duplication of a small number of copies is required. The more absorbent qualities are made mainly from esparto; the harder varieties contain higher percentages of sulphite. They are made white and tinted, and the better grades are usually watermarked.

*Cartridges* made from esparto are of two kinds, printing and drawing, and both are usually of a medium substance. The offset cartridge must be hard-sized and have a firm, flat, non-fluffing surface, which may be either of a matt or a smooth finish. It is widely used for printing illustrated matter, in which use the twin-wire variety is seen to advantage. The drawing cartridge is used chiefly for scholastic work and for this purpose must have a surface that will withstand erasures.

*Cover Papers.* Of the comprehensive range of cover papers produced in Britain the better qualities are made from esparto, usually with an admixture of chemical wood fibre to give the greater strength required in this papers. In the main, covers are made in heavy, substances

but matching ranges are often available in thinner weights that are applicable to a wide range of high-grade pamphlet work. The esparto furnish lends itself well to the infinite variety of clean tints and colours, and the many attractive embossings applied to cover materials.

*Pulp Boards.* This class of board is made in medium to heavy substances both on single wire and twin wire machines, in a wide range of tints and finishes. The top grade is of an all-esparto furnish with a water-finish applied at the paper machine. The substance are often specified as being of so many sheets, a custom that derives from the time when all boards consisted of sheets of paper pasted together.

The following table shows the current usage:

|          |                                     |
|----------|-------------------------------------|
| 2 sheet= | 14 lb. royal 100s (85 D.C. 500s),   |
| 3 sheet= | 16½ lb. royal 100s (100 D.C. 500s), |
| 4 sheet= | 21 lb. royal 100s (130 D.C. 500s),  |
| 5 sheet= | 25 lb. royal 100s (150 D.C. 500s),  |
| 6 sheet= | 29 lb royal 100s (175 D.C. 500s).   |

#### Identification of Esparto Papers

Where the esparto content of a paper is high, its identification by ordinary means is less difficult than that of many other papers. The chief characteristics of the esparto writing or printing are, a clear look thro, close uniform texture, smooth surface without glaze, short tear, and a kindly mellow handle. Where the paper is watermarked there is a deep, clear-cut impression. A further aid to identification, other than by microscopic analysis, is the application of a weak solution of aniline sulphate which will give a pink re-action to a paper of substantial esparto content.

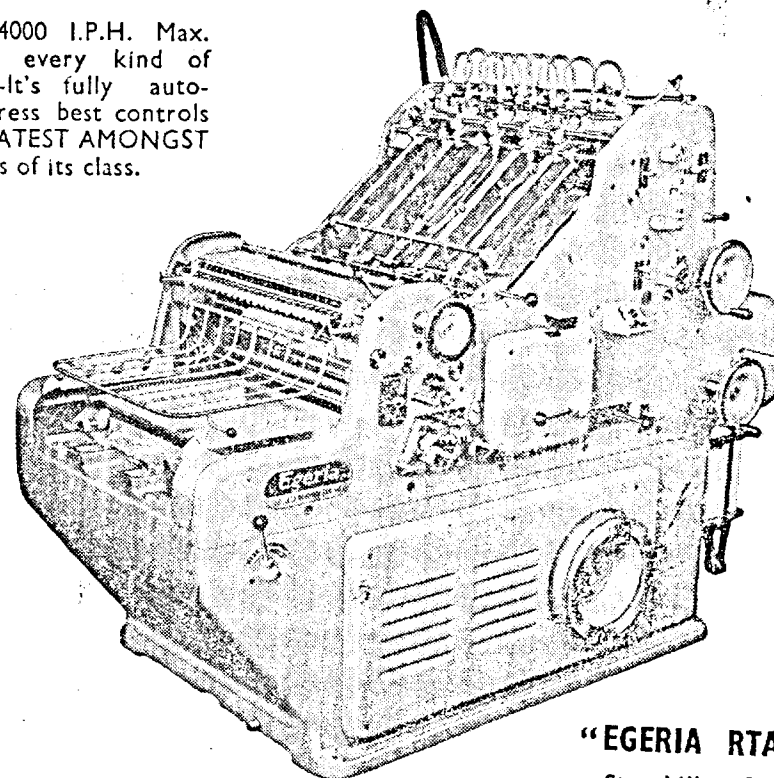
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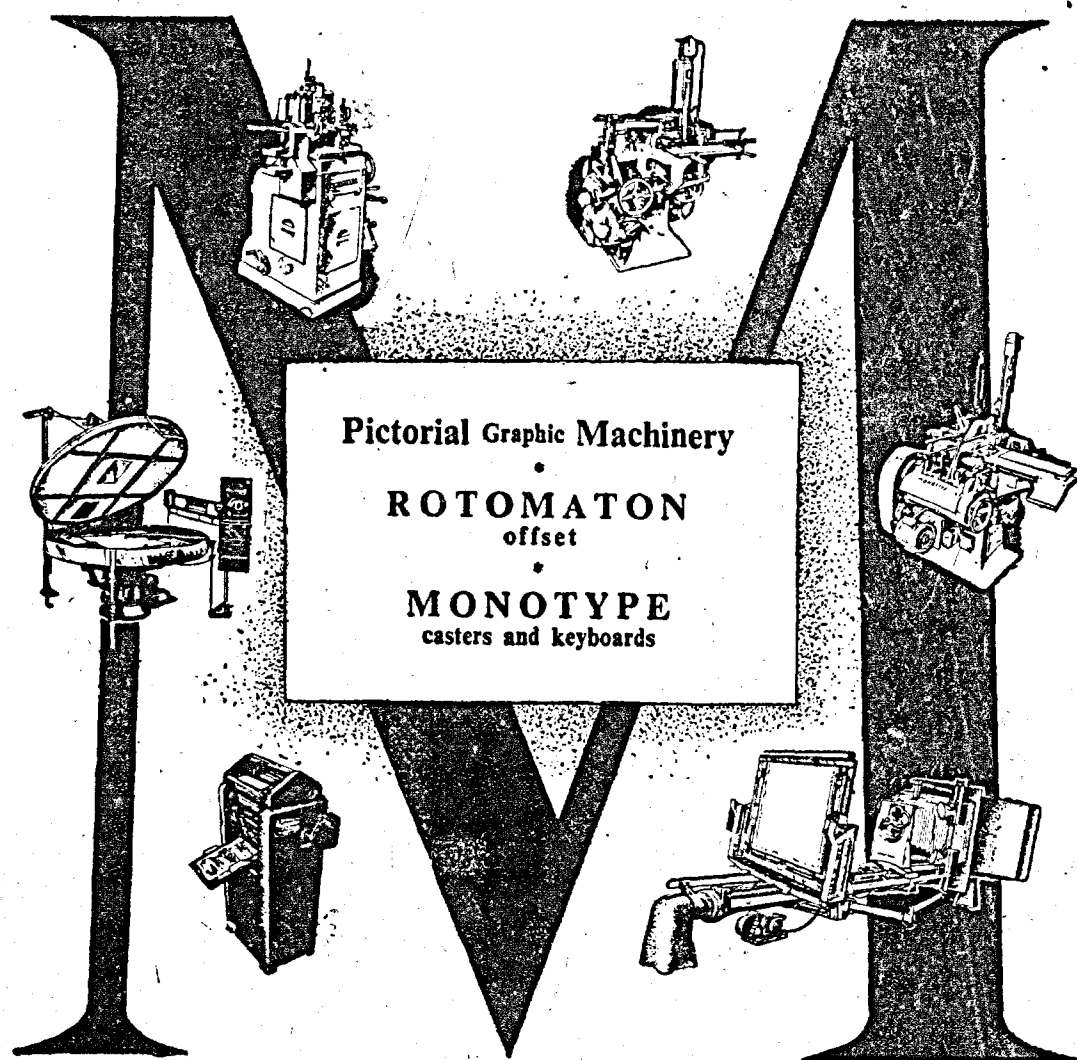
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## HINTS TO APPRENTICES (4)

### Care of Inking & Damping Rollers

By ERIC J. TONGUE

AN IMPORTANT factor in producing first-class work is to see that the inking and damping rollers are kept in good condition. When taking over a machine the plate and damping rollers should be removed at the first opportunity and inspected.

The plate rollers may be composed of vulcanised oil, in which case they should present a dull surface and have a somewhat velvety feel. If they appear glazed or shining this must be removed by rubbing lightly with fine emery paper, being careful to keep the roller thoroughly wet. If the inking rollers have surfaces of synthetic rubber it will be found that glazing is not so apparent but a tendency to refuse to accept ink may develop; this can be overcome by removing the ink-resisting film with pumice powder. These remarks apply equally to the composition distributing rollers. Should the distributors have leather covering all hard ink which has accumulated in patches should be removed, the rollers being rubbed down level with sandpaper. They may then be reglazed with a coating or two of thin shellac.

Where steel geared rollers and riders are being used these may be cleaned of all rust or stains by rubbing evenly along the whole

surface with pumice powder and machine oil.

A harsher abrasive will do the job quicker, but it will wear away the surface and the rollers will soon become unlevel. Even pumice powder will eventually cause hollows and for this reason every effort should be made to prevent these rollers from becoming rusty or ink resisting.

Where it is found that the steel geared rollers are unlevel the position is more serious, because grinding down will alter the surface speed. This will sometimes result in gear streaks or scum bands. Experience suggests that .005 in. may be ground off safely, but, beyond this, trouble may be encountered. These rollers may be recoated by spraying with brass or copper, and in some cases an ebonite or vulcanised surface may be put on. They will then possess the added advantage of being much less prone to stripping as well as being quite level.

Go over all the rollers with a pair of calipers testing for hollows. If the leather distributors are found to be unlevel they may be stripped down and the worn flannels replaced by new material. Should they still appear unlevel it will be because the leather skins have lost shape and need renewing. A temporary measure to overcome this trouble where time is important is to leave the outer leather a little on the baggy side. This will enable contact to be obtained while awaiting new skins.

The condition of the rollers brackets and cups is most important and is a point sometimes overlooked. While the rollers are out of the machine check over the inking roller brackets, if possible renewing those that are worn. Make sure to fit washers to the ends of the plate rollers to overcome end play, which is a common cause of scum bands.

If the machine is fitted with a washing-up device it will have been noticed that a certain amount of ink accumulates at the ends of the rollers. After each wash-up spend a few minutes wiping this accumulation off by hand. If this is not done the solvents and driers in the ink will cause the vulcanised rollers to crack and eventually split open.

The use of a solvent recommended by the

# NEWS

**PRINTECH Diary Page:**  
News of people, production and events in the Printing, Paper and Publishing World

## 'Use new Etching Resist with Conventional Reducers'

A new etching resist for use on plates and films has been produced by Kodak Ltd., and is available to the printing and allied industries.

The manufacturers state that the new resist known as 'Staging Lacquer'—is for staging out during dot-etching of films and plates. It may be used, say the firm, with conventional reducers such as Farmer's reducer or iodine-cyanide or with the thiourea reducer made up to Kodak Formula B14.

The new etching resist has excellent adhesive properties, the manufacturers point out, and will not frill or become detached after repeated etching and rinsing. When local etching is complete, it is stated, the staging acquer can be readily removed by swabbing with dilute acetic acid, an expensive solvent not being required.

## Fine-Line Work

A further advantage, say the manufacturers, is that the viscosity of the staging lacquer makes it particularly suitable for fine-line work.

The Kodak staging lacquer may be applied to the emulsion with brush or ruling pen. Hot air may be applied to hasten drying of the lacquer, add the manufacturers.

*Printing News*

## New Plastic Inking Rollers

The search for alternatives to the composition roller continues and a new material announced by Imperial Chemical Industries has interesting possibilities. It is a plastic compound based on the now well-known 'polyesters' in combination with 'diisocyanates' to produce what are known as 'polyurethane', which is now used for hard rubbers of high mechanical strength or soft rubbers suitable for inking rollers. They are also the basis of the low density foams which form the spongelike materials which have become so freely available.

The new rollers are stated to maintain a high degree of 'tack', which is essential for the printing of fine half-

tones, and are available in a wide range of hardnesses. They possess excellent inking properties and are already in use in many applications of both letterpress and lithographic printing.

A highly glazed surface is obtained by casting the new material in conventional roller moulds, as used for composition rollers. This is an improvement over previous production techniques for rubber rollers, which are usually ground to size, producing a surface porosity which gives difficulty in cleaning.

## Big Expansion in Israel-Made Paper

A large-scale expansion programme is being embarked upon by the American-Israeli Paper Mills of Hadera which will make Israel virtually independent of paper imports.

The programme calls for the doubling of the mills' present capacity of 15,000 tons per annum, and for the construction of a pulp mill with an output of 15,000 tons a year, said a report from Tel Aviv early this week.

The cost of the programme is estimated at nearly 10 million.

American-Israeli Paper Mills went into operation four years ago. They were established by a group of foreign investors headed by Joseph M. Mazer of the Hudson Pulp and Paper Corporation. At present, the mill supply about half of Israel's requirements.

*Printing News*

## A Publishing Firm in Australia installs two Klischographs

The Leader Publishing Co., Northcote, Victoria, recently became the first newspaper firm in the Commonwealth to bring into operation two "Klischograph" electric block-making machines.

The company, publishers of a chain of six suburban weekly newspapers, now has infinite scope for "on the spot" pictorial work, and rush presentation.

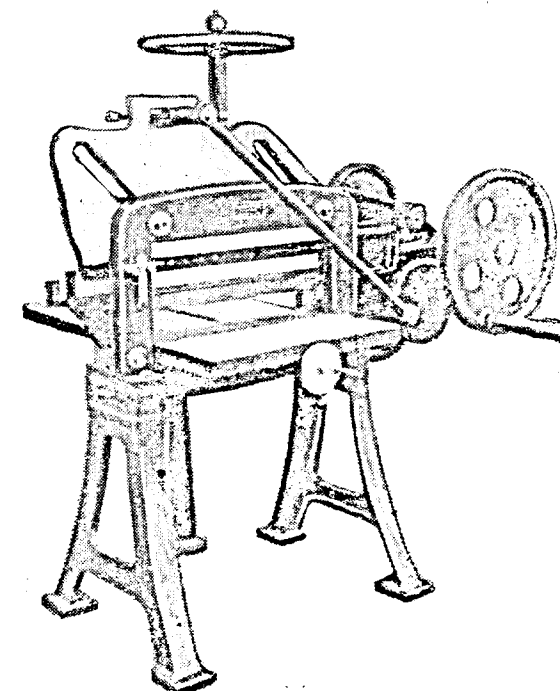
The machines facilitate production of high quality half-tone and line reproductions at short notice and low cost. This allows better pictorial support for news, and assists advertising presentation, according to a report in a recent issue of Newspaper News.

The half-tone machine has been in operation for some weeks, and has shown that photographs can be produced on newsprint with a degree of fidelity equal to anything previously known.

The recently acquired Klischograph line machine has given free rein to the cartoonists and advertising layout staff of the Leader.

This has resulted in exceedingly bright and readable papers, adds the report.

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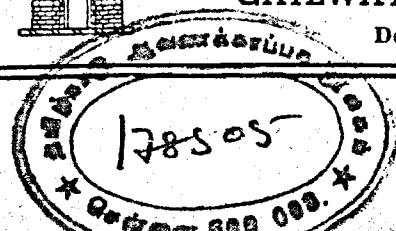
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