

The BPS Introduction to Printing

Letterpress Makeready by Denis Logan

Makeready is a complicated art requiring the exercise of judgement, skill and experience. This paper touches on some of the methods pursued in the search for that elusive perfect print.

Novice pressmen may question the necessity of time and effort required performing makeready duties prior to the actual printing of a job. They may believe all type and blocks are .918" (23.32 mm) high and that beds and platens of all presses are flat and parallel. Their conscience may not bother them when they slip in a couple more sheets of packing, pile on a little more ink, and hope for the best! The type may punch so deep into the paper that it can be read from the back like Braille but this is not what printing is about!

Few platen presses, especially vintage ones, will have perfectly flat or level platens or beds. These parts may actually be dish-shaped through regular use of the central area, and must be permanently made ready, as will be explained later. For these reasons any job, with the exception of those comprising only one or two lines of type, should be made ready.

The term makeready covers all the operations necessary to overcome these deficiencies thus resulting in a faultless print. It may be divided into three distinct operations: the placing of underlays, interlays, and overlays.

The underlay is material placed under the type in the forme to bring it to a height of 0.918". This will enable the rollers to transfer a thin film of ink evenly to all parts of the forme. Blocks are more often treated in this way to the exception of any other form of makeready.

Overlays are material, usually tissue or bank paper, placed in the platen to provide for that variation in impression necessitated by the different characteristics of the forme. A pressure of approximately 75 lb. per square inch will be required for printing body type; display type and half tones, printing blacker, require much more pressure.

Interlays, material to bring blocks to type height, are placed between the mount and the plate. Usually this practice was confined to half tone blocks and permitted the printer to strengthen the denser areas of the print. He could also reduce highlight effects by carefully adding two or three areas of light bank paper under the block as overlays.

If the bed of a press is low in the centre, several oval sheets of thin paper, diminishing in size toward the middle, can be torn out and tipped on to a piece of paper. This should then be fixed to the bed of the machine in such a way that more or less makeready could be added as time goes on, but should always be at the bottom of filler sheets, etc. Make sure when fixing that the tape or gum does not extend on to any possible print areas.

The platen and bed of the press should approach each other absolutely parallel if the forme is to receive an even impression. If they don't, the platen must be levelled. To do this, lock up a 60 pt. letter in each corner of chase with one in the centre and, taking pulls, gradually adjust the platen screws until all of the type prints with an equal colour and impression.

When a heavy forme is substituted for a light one, additional packing will be required in front of the platen to overcome any spring in the press. Consequently on hinged type platen presses there will be a heavier impression at bottom than at the top of the forme, requiring the platen to be reset.

On a clam type platen, e.g. Heidelberg, Thompson and Arabs which have an independent impression system, usually through a toggle or slide, filler sheets must be removed to keep the forme and platen face level when the impression is increased. Decreasing impression means filler sheets will have to be added. I have seen a pressman, not aware of this requirement, adding wedges of makeready to presses in an attempt to rectify this simple design peculiarity of a clam type press.

All blocks and large type should be checked with a type-high gauge before use. Wood engravings should be checked for warping and any that are too high should be sanded down on the reverse side. An inch circle of paper behind the centre of a wood base cut four inches square will increase the impression on any block with no noticeable effect on the edges.

A hard tympan, requiring only a light impression, prevents excessive wear on the type. Soft packing and heavy impressions will damage a typeface very quickly. A good tip is to place an aluminium offset plate in the packing two or three sheets down from the tympan —the type will print much more crisply and with no impression showing through.

When printing from badly worn type, the rollers may be held off low characters by higher, less worn characters; an underlay of blotting paper may help to equalise the forme.

The packing for a heavy forme such as a book containing both type and halftones may consist of one sheet of fibreboard, two or three sheets of hard manila, the offset plate and three sheets of the stock being used. Oiled tympan paper or good quality brown wrapping paper should form the top sheet. The composition of the packing will depend on the nature of the job, the paper and the press. Filler sheets will have to be inserted or removed to complete this task. Using good rollers, properly adjusted, place a small amount of ink on the press. Inset the type forme and pull a print on the top sheet just enough for the highest spots to print weakly. Use this first pull to locate the gauge pins in position.

Pull a trial print on the paper intended for the job. The tympan should be firmly attached, usually at the bottom of the press so that it can be opened readily. The filler sheets should also be lightly attached to the platen face, bearing in mind that sheets may have to be removed or added during the makeready stage. If these are taped at the left and right hand side of the platen face it can make the task a little easier but, again, do make sure that the tape does not extend onto the final image size. Check the pull for final positioning at this point, making sure it is square and in the correct place with all corrections completed. This should be the final format of the job as it will be very difficult to alter after the makeready is completed.

While the trial print is still up against the pins, stab three holes through the packing with a sharp bradawl or a dart. These register marks should be outside the printing area and consist of two at the bottom (lay) of the sheet and one at the left or feed side. These holes should pass through at least the top three of the filler sheets. This first pull is now taken from the press.

Examine the overlay sheet with the printed side up under a strong light. Mark out with a pencil the sections that need more or less pressure. The first series of concentric outlines will indicate where slightly additional impression is called for. A second series of lines are marked inside the first to show where the impression is quite weak. Lastly, a third series of outlines are pencilled inside the second ones, designating areas where the print vanishes completely. This results in a series of three irregular outlines, diminishing in size toward the centre of the overlay sheet.

Each series of outlines must now have thin patches of paper pasted inside the drawn lines. For overlaying type and line-blocks use tissue, bank paper or 80 gsm paper depending on the amount of extra impression required. A ready source of good quality tissue paper is usually to be found at your nearest wine merchants wrapped around good quality wine. Iron the tissue flat, store to be used as required, and drink the wine. Do not attempt this the other way round!

Commencing with the smallest patches in the centre, tip a piece of tissue lightly to the overlay inside the lines with makeready paste. Wallpaper paste is excellent for this use, but do take care not to use it directly in any metal surface or it will cause rust. With a sharp knife carefully trim away only the tissue paper that extends beyond the drawn outlines. After all the small circles are patched up, proceed to next the largest circle, finishing the largest contours last.

The resulting overlay sheet will be composed of three layers inside the smallest outline, two layers over the second and only one over the largest area. Areas that show too much impression will have those circles scraped or peeled off, or cut out completely on the overlay sheet.

Open the platen and paste a patched overlay sheet just under the top sheet, in register with the stab holes. Remove one sheet of production paper from the packing to compensate for the thickness of the overlay.

Move the fibreboard from the bottom to just below the first overlay sheet. One line of thought is that the overlay sheet should not be less than .012" nor more than .024" underneath the top sheet. An overlay too near the top may show the makeready outline. If placed too deep, it may lose much of the desired effect because the press distributes any additional impression over a wider area.

Close the packing and pull another trial print; this one should show a marked improvement over the first. Perhaps no further impression will be needed but if any areas still print weak, a second overlay should be made, as was the first. This overlay will be placed over the register marks on the first sheet. For high quality letterpress printing a second or third overlay may be required to bring out fine the graduation of tone in any halftone plates. Never put on an extra sheet of packing over the entire forme unless more impression is needed everywhere.

Overlaying is complicated by the tendency of the press to yield when pressure is added to any part of the forme. Often the overlays will cause the impression to bear off from parts of the forme that were originally all right.

I have heard that small areas or bad letters that do not print properly can have these sections built up by applying thin coat of liquid nail polish with a fine brush. This quick drying liquid could build up faulty letters during the final touches, but it is not something I have done myself for I prefer to change the offending damaged type.

By slowly building up the low areas only you will not be hitting the paper too hard. With a hand press one will find that it is easy to print a full forme without breaking your wrist pulling the handle. After all parts of the forme have been brought up to equal impression the job is ready to be run. Place a small amount of ink on the disk and the forme should print perfectly.

Opinions of pressmen on makeready differ and many different methods are used. Some advocate patching directly on to the top sheet to save time, others confine all of the makeready to overlays. Each system has its adherents and none of them are wrong; you must experiment with the various methods and decide what is best for you.

No matter what method is employed, it should be remembered that in letterpress the pressman has perfect control of every minute section of the forme and each part can be brought to a perfect impression. This is one reason why letterpress is capable of the finest printing. A little extra effort by pressmen will result in print that will proudly be a credit to their art.

It is worth keeping a note of the packing requirements for each of the next few jobs you produce. You will not have to keep all the details for you will find many jobs have similar packing to one another. You may find it useful, however, for those few tricky jobs that always seem to cause problems.

After all parts of the forme have been brought up to equal impression the job is ready to be run. Place a small amount of ink on the disk and the forme should print perfectly.