

READING THE PLATE

By Clive Goodacre

Before Drupa '82 few people had ever heard of plate readers. Previous methods of pre-setting the press had centred on taking readings from the film separations. But with the variations inherent in platemaking these systems have not been found suitable for general usage.

This approach is quite acceptable in newspaper production and is even being taken one stage further by companies like Eocom and LogEscan, who plan to feed information direct from their laser platemakers/facsimile receivers to the press. The precisely controlled and highly automated nature of platemaking in such a system makes it a viable method of pre-setting the press inking.

However, the variables in commercial web and sheet-fed offset are many — plates are often supplied by a variety of sources and films can be retained by the platemaker. These problems are overcome by the latest approach where the printing plate is scanned, and a microcomputer then calculates the zonal ink distribution, working either on or off-line.

Existing computer controlled inking devices such as those from MAN-Roland and Heidelberg can be easily extended to include plate scanning. Heidelberg announced its CPC3 plate image readers at the show along with Komori, Dainippon and Perretta. Its reader is independent of the press and therefore can serve a whole

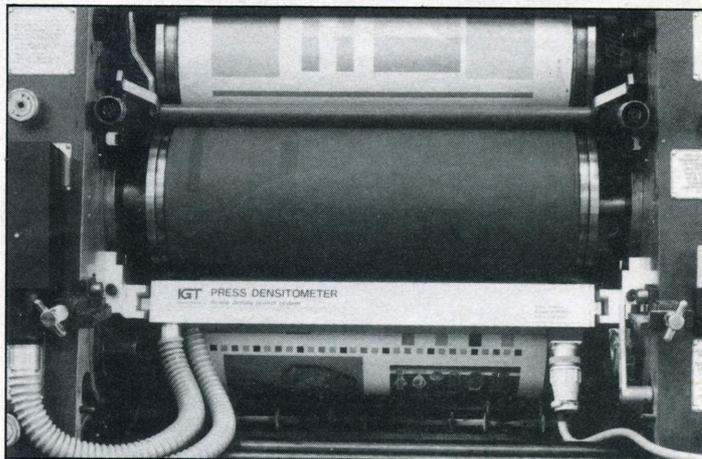
machine room of Heidelberg machines. Once the plate has been scanned the values of image areas are stored on cassette for transfer to CPC, and can also be printed out by percentages or as a graph.

Dainippon Screen's Printing Ink Control System PAM 100 is designed to take the plate vertically thus requiring a minimum of floor space. Its microcomputer can cope with 32 different sizes of press storing such information as number of ink duct keys, pitch of keys, printing area and so on.

Because it is not linked to any particular make of press the unit has a more general application and can be used for both old and new equipment. A print-out produced from the plate gives a bar graph with corresponding ink coverage percentages.

Perretta Graphics Corporation managed to find a minute stand area at the last moment to show its Colour Control System. The company, based in Pughkeepsie, New York, developed the system for its own use but has now made nine installations in the USA on both web and sheet-fed machines. It is an on-line system comprising a plate reader, keyboard and computer mounted on the press console and a special blade for each duct.

Each plate is scanned in turn and the ink zone densities for the complete set recorded on a single reusable EPROM chip which is manually transferred to the



IGT press densitometer.

computer. On pressing a button, motorised segments of the blade are pre-set ready for the run. The operator can call up a digital reading for any segment of any blade to check how much ink is feeding to a particular area.

Perretta says that savings in downtime of at least \$400 per unit, excluding paper, on web presses have been achieved using its system.

Another way in which existing machinery can be updated is by use of scanning densitometers. These operate in the same way as those on computer controlled inking systems, but do not act directly on duct setting.

At Drupa, Gretag launched its D732 model which is essentially an automatic densitometer enabling 200 colour control patches on a sheet to be read in six seconds. Sheets up to a maximum of 720x1060mm can be scanned according to instructions entered by floppy disc and the information compared with stored values. Deviations can be displayed on the unit's VDU in a number of ways including numerically, and as bar charts. Trends for all the colours can also be shown. All these readings can be printed out via a matrix printer while the disc can be stored for repeat runs.

Dainippon Screen has taken this approach one stage further in its Automatic Colour Printing Analyser which can be programmed to measure certain areas on a press sheet. First a sample print from a proof or production press is placed on the table. The positions and densities of chosen points in the picture to be checked such as highlights, shadows and any critical areas are memorised. Running sheets will then be read in exactly the same positions and a display indicates whether the density at each place is within tolerance.

Heidelberg CPC3 plate image reader.

Alternatively, the head will proceed to each position and a video camera and microscope show an enlarged display of the dot formation on a colour monitor.

The ultimate stage must be densitometric measurement on the press, so that any departure from preset tolerances will be identified instantly and remedied. Also, to base corrections on one single sheet can be very risky as presses can often fluctuate in and out of tolerance within a few impressions. This was IGT's argument, presenting its prototype densitometer.

A bar equipped with a number of measuring heads is fitted so that the density of each sheet is recorded while it is being transported from the last printing unit to the delivery. A microcomputer enables, for example, the average densities of a certain number of sheets to be calculated and the readings shown via a VDU, and also printed out. For a four colour press printing a sheet width of 700mm a densitometer with 20 measuring heads is suggested: five for each colour printed, four on solids and one on halftone areas.

The problem of the measuring heads becoming dirty has been solved by feeding filtered compressed air through them, blowing the paper against the impression cylinder. In this way the heads are kept free of fragments of paper, ink or powder.

More than any other exhibition Drupa '82 showed the quality that can be achieved by the latest generation of equipment equipped with computer-aided controls. Both web and sheet-fed presses were delivering work which a few years ago would only have been achieved by the best printers — certainly not under exhibition conditions. Also it was clear that the automatic press is now well within the bounds of possibility.

