PRESS COLOUR CONTROL

HEADING FOR THE CLOSED LOOP

By Bob Foley, Pira

A number of years ago the thinking behind colour control on the press reached a crossroads — basically, whether to simplify the mechanics of inking or to introduce a degree of sophistication made possible partly by the evolution of the microchip.

The former, known as single roll inking, was beautifully simple in concept: the complete replenishment of the ink film with every revolution. With the same thickness of ink required for solid, text or halftone, lateral adjustment of the ink feed was not necessary. As well, the 15 or more rollers comprising an average roller train were reduced to two or three, a saving in terms of materials and also in the number of nip settings.

However, the industry turned the other way at the crossroads and embarked on a route leading to remote control and automation of control. It would be incorrect to suggest that systems have become more automated through their evolution as the first system available, MAN-Roland CCI developed in 1977, is still the nearest to a fully automated, closed loop system (although a certain degree of operator intervention is still required).

Leaving MAN-Roland CCI aside for the moment, colour control of lithographic presses can be sub-divided arbitrarily into three categories. The first category, the simplest, is the remote control of the ink ducts. As discussed in Printing World's Technical Report March 3 by Bob Durrant, a web press travelling in excess at speeds of 1600 ft/min produces many copies in the time elapsed between identification of colour variation and its rectification by physical means on the press. Central duct control was imperative, and it was this concept that has been taken up by most sheet-fed press manufacturers.

The simplest form of system has motorised ink screws individually or collectively controlled from a console. A profile of the duct settings can be provided by LED or VDU. The inherent faults of the conventional single flexible duct blade, namely the influences of the hydrostatic and hydrodynamic forces, have been removed by the innovation of the segmented duct. This design is not new; a patent for it was taken out in about 1880.

Planeta with its Varicontrol system still stands by the single flexible blade, 'the tried and tested ink knife' in its own words. Other systems which can be included in this category are the Roland RCI, Heidelberg CPC1 and Koenig & Bauer Colortronic system, available for sheet-fed presses. The Colortronic is able to store the duct settings for the subsequent job, preset while the press is running. Additionally, systems for storage of duct settings on magnetic cards or punched tape are being tested.

The first two systems are the most common in the UK, and are the two oldest. The Colortronic is interesting in that two presses of different size if necessary can be controlled via one console. This not only opens up possibilities of variable manning arrangements but also would seem to be a logical progression in the reduction of hardware and hence cost by the addition of minor increase in processing power. Some consoles include facilities for damp and register adjustment with usually a digital display; this will become commonplace.

Above: Harris Densicontrol system

One of the interesting developments in this area is the Komori PQC system. Besides having remote ink duct adjustment and data storage facilities, it also has a unique scanning system to register plate cylinders to one another when the press is turning slowly, prior to printing. This is carried out by a scanning head located on the side frame, scanning marks laid down on the plate. A computer printout indicates the relative positions of each cylinder.

For web presses in this category we can include Solna SCC and Wifag Mars, although the Solna SCC can be fitted with a duct presetting option.

The second category can be defined as comprising those systems with data input storage facilities. This can be of paramount importance for particular areas of printing for different reasons, and can be undertaken by different methods. For newspapers, the prime requirement is