

## HDP II

James Sholar\*

HDP II - Helio Data Processing, or Filmless Gravure, is operational. Pages are being produced through the Chromacom into the Helio Klischograph with absolutely no film being used in the production cycle. Bromide Operations are:

- A) Helio Controlled & Optr. Intens.
- B) Thousands of Bromides

In order to clarify HDP II, let me explain the designations of HDP I - HDP II, and HDP III that you may have seen in HELL literature. Development of Helio Data Processing began with the no longer discussed HDP I - a system developed by HELL for digital input to the Helio Klischograph. To be quite honest, HDP was not practical in the real world of Gravure Cylinder Manufacturing. Limited provisions were available to drive the K-202 with anything other than digital data. Difficult to say the least when it came to switching from bromides to digital data.

HDP II is now, and has taken all the considerations of different sources for data input. Digital data, bromide in puts, late breaking type, and last minute changes. All the things that happen in the real world of cylinder making for the rotogravure printing process. In other words, a practical engraving system to drive a Helio with digital information, and to practically introduce it into the production cycle.

HDP III is an engraving system under development designed to drive the electron beam engraver. It has no application to K-202 and is only brought forward as a point of information. How-

\*HELL Graphic Systems/Gravure Sales

ever, I am sure that any techniques or breakthroughs in this development will be applied to HDP II if feasible.

HDP II is an engraving system designed specifically to logically take digital data from the Chromacom Page Make Up System and engrave gravure cylinders from that data. This is the main objective of HDP II and it accomplishes the challenge very well. Because we are in a real world, provisions have been made to drive the Helio from data stored in mediums other than digital form. Bromides from sources other than the printer are also in the scheme of production requirements. These carriers can be in negative or positive form, halftone or continuous tone, including line work or not. The merging and mixing of data is accomplished through the simultaneous engraving capabilities of the optional electronics made available with HDP II. Digital only Helio (Mix - additions such as type to same page, merge - digital and bromide same cylinder) data processing does not require these additional electronics, but mixing bromide data with digital information will require the cabinets for one pass engraving. Bromides on the scan cylinder will also have to be of the same type, i.e. all halftone, all negative, because of the gradation limitations of the Helio.

In order to best merge data stored on many different substrates such as halftone negative mixed with halftone positive, mixed with continuous tone, a common data base is mandatory. The CN-420 flat bed Black and White Scanner is the best tool for this task. By digitizing all this variety of input to a common data base, gradations, color corrections, and retouch can be accomplished prior to execution on the Helio. The CN-420 scans at a resolution of up to 2500 LPI and can in put a catalog page in approximately 2 minutes. Forty-One C separations can be scanned sequentially and reassembled.

After all data has been assembled into Chromacom data format, an interpolation station, known as a Rasterkonverter, converts Chromacom data into digital Helio data format. This is the inform-

ation that actually drives the Helio in a digital only operating mode. The Rasterkonverter is basically a final page processing station equipped with high speed array processors in order to make these computations with production requirements a prerequisite. The Rastorkonverter can be located at a remote Helio site, or it may be on site at the Chromacom installation.

The interpolation station calculates:

- 1) Chromacom data into Helio data formats - Chromacom data is four byte information and Helio data is two bytes per cell
- 2) Separates Y-M-C-K onto separate disk packs simultaneously - cylinders are engraved sequentially by color
- 3) Sets the screen angle and cell shape
- 4) Sets the screen ruling
- 5) Sets the imposition - for the printing press

Even though the imposition is set at the interpolation station, imposition changes can be made at the Helio Klischograph. Late breaking type and last minute changes can still be made through utilization of the simultaneous engraving capability from the scan cylinder. You are not locked into because of a 100 percent digital data base. Utilization of the CPR-403 color proof recorder in the Chromacom System makes the all digital concept viable.

Requirements to upgrade existing Helio-Klischographs are:

- 1) Electronic cabinet up date only if simultaneous engraving capabilities is required - other hardware updates may be required according to hardware status level.
- 2) Addition of disk drive or drives as required. Only one disk pack is

required for most gravure cylinder printing sizes in angles 3-2 and 0 at 150 LPI. Ruling two packs may be required for angle 4; especially at some finer resolutions.

Advantages to HDP II:

- 1) Excellent to perfect register
- 2) Total elimination of the film that generates problems other than data transfer, such as: dirt, scratches, diffusion, mis-register, and multiple digitizations - i.e. digitized in system, re-digitized by Helio.
- 3) Excellent reproduction and enhanced detail due to:
  - A) Register.
  - B) No diffusion through films and bromides.
  - C) Manipulation of gradations to best suit individual customer requirements - degrees of detail contrast can still be applied at the Helio.
  - D) Easiest most reproductable method of applying GCR to job.
  - E) Faster turnarounds - the HDP link to the Helio completes the digital loop for reproduction. Hard copy proofs from the HELL CPR-403 proof recorder eliminates press proofings, enabling faster press start ups.
  - F) Logical transition to digital technology.
  - G) Should result in fewer press proofs because of digital consistency.
  - H) Finest data interpolation method yet applied to filmless gravure.

No one knows Helio's like we at  
HELL know the Helio Klischograph.

In conjunction with HDP, HELL Graphic Systems, Inc. offers a telecommunications system for data transfer to remote printing sites. A 1.5 MB T-1 channel is being used for transfer and can be carried by land line or by satellite.

Two companies are now involved in HDP-II:

A) Krueger Ringier

B) World Color Press, Salem Gravure Division