

PROJECTION PLATEMAKING - THE FOUNDATIONS OF COMPUTER-TO-PLATE TECHNOLOGY

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Abstract: Projection platemaking has gained industry-wide recognition. Our message has been one of great material and labor savings and increased productivity for the black & white and spot-color printer. With the electronic printing age at our doorstep, printers are now looking for the direct link from photocomposer to plate. The new photocomposer camera provides this link, with projection platemaking as the foundations. This latest technology means even less time to get to plate and even greater savings in labor and materials.

Introduction

Last year, I introduced Rachwal's Super 70 Projection Platemaking System. I explained the technology and mentioned our intentions to interface to electronic publishing. Today, I would like to bring you up-to-date on the developments.

1. First, we are no longer Rachwal Industries, but instead Rachwal Systems, reflecting our development of "systems for prepress automation"

2. Secondly, we've recently enhanced our projection head which now provides another automated feature - "bottling". This automatically adjusts the angle of the page on the plate to prevent the flaring of inside pages on large signatures.

3. The most important strides have been in our interface to high-speed photocomposers.

The Super 70 Projection Platemaking System

The System produces printing plates for a wide variety of black & white and spot-color applications including books, directories, manuals, price lists and financial publications.



Fig. 1. Rachwal's Super 70 Projection Platemaking System eliminates the most time-consuming steps of conventional pre-press and platemaking methods. No more collating, stripping, opaquing or preparing flats.

It's composed of a camera station, control console and projection platemaker. At the camera station, text and halftones are photographed in page-order sequence onto 70mm roll film. You no longer have to collate pages. The film is then developed and loaded into the projector of the platemaker.

The control console is the brains behind the operation. It controls all functions of the platemaker - telling the platemaker what page to select and how to position it on the plate. This eliminates the stripping and flat preparation.

At the platemaker, each page is projected to full-size to expose the complete plate. Exposures average less than five seconds per page. The platemaker exposes a wide variety of additive and subtractive plates, blue lines, and bright light film.

Our new projection head provides improved optics and an additional automated feature -- "bottling". This automatically corrects for the flaring of inside pages on large signatures by automatically adjusting the angle of each page on the plate as required. If done conventionally, this operation would represent many labor intensive hours.

Additionally, a new method of preparing job plans is available. This increases the variety and complexity of the jobs that the System can handle and it's a program that's simple to perform by non-computer oriented operators. It makes it simple to accommodate bottling and shingling (moving the page up or down and side-to-side).

Let's summarize the benefits of Projection Platemaking:

- Reduce material costs. The cost of conventional film is around 40 - 80 cents per page. Compare this to Rachwal film at 8 - 10 cents per page.
- Increase productivity. Two people can do the work of four. There's no longer any need to collate copy, strip, opaque or prepare another flat.
- Enhance pre-press flexibility. The same roll of 70mm film can be used for either web or sheetfed presses.
- Save storage. A few file cabinets of roll film can replace a warehouse of flats.
- Interface to electronic publishing.

Rachwal and Electronic Publishing

For years, our intent has been to interface our System to electronic phototypesetters. I'd like to explain some of the benefits this provides and show how we have done it.

Rachwal's Photocomposer Camera An Interface to Electronic Publishing

Our new photocomposer camera system is mounted inside selected high-speed phototypesetters where it images fully-paginated copy from a page make-up station directly onto 70mm roll film.

The first installation has been made with the Information International Pagesetters (Models 470, 570; Comp 80/2 and 80/3).

Some of the benefits of this direct-imaging process:

- Save material costs by eliminating RC paper and full-size negatives.
- Double productivity and cut copy-to-plate time by eliminating the handling of copy at the camera station.

Let's compare the cost savings with this new technique:

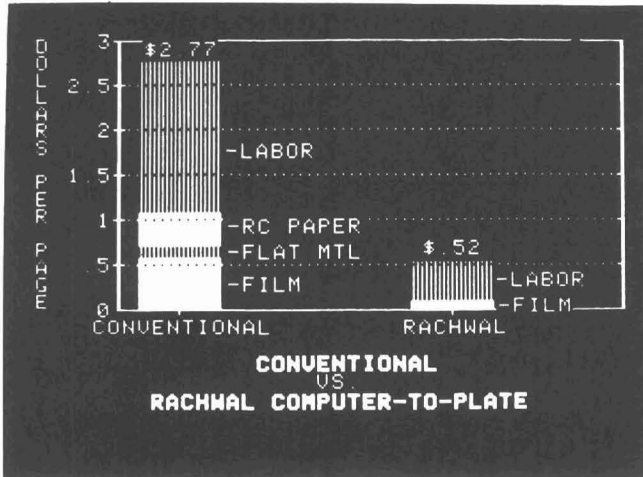


Fig. 2. The cost savings of Rachwal's Computer-to-Plate Vs. Conventional Methods.

Compare the steps you save over conventional prepress and platemaking methods. Your time to get to plate is substantially reduced and your productivity is greatly improved.

Conventional

Collate camera-ready art
photograph art
process film
rule-up flat
strip negative
opaque negative
burn plate

Rachwal

process film
burn plate

Figure 3 below shows the location of these devices inside the typesetter. The camera and lens are located directly over the phototypesetter's CRT.

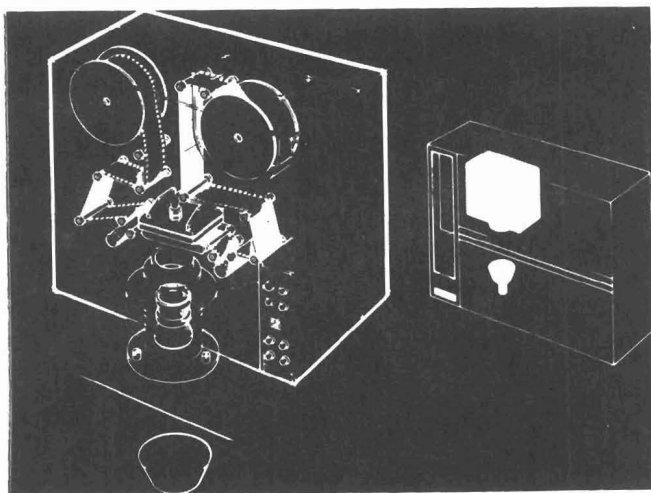


Fig. 3. The Rachwal Photocomposer Camera is mounted inside selected high-speed phototypesetters where it images pages directly from the CRT onto 70mm roll film.

Inside the Photocomposer Camera

The Camera mounts on standard interface surfaces within the photocomposer. Installation or removal takes less than five minutes.



Fig. 4. The prototype Photocomposer Camera is shown here inside the Triple-I phototypesetter.

Figure 5 shows the production version of the camera. The film gives an indication of its size. There are three doors to allow convenient loading, threading, and removal of film. The front panel has push button switches and indicator lights for simple operation.

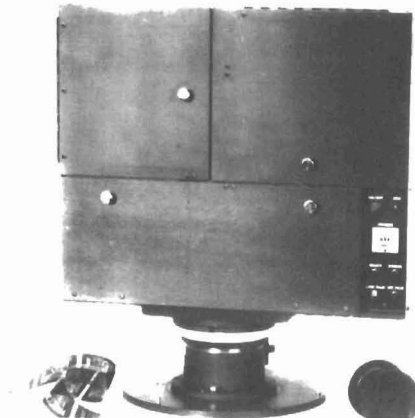


Fig. 5. Photograph of Rachwal's Photocomposer Camera

Figure 6 shows the camera with the doors open. The doors are interlocked so that the camera won't run unless the doors are closed.

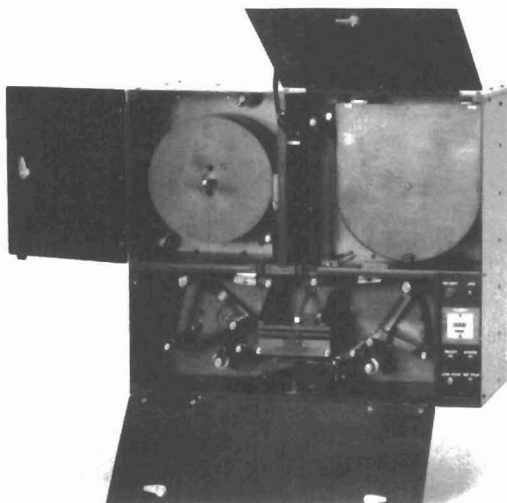


Fig. 6. Inside the Photocomposer Camera.

Maximum image size at the plate exceeds 8 1/2" X 11", and anything smaller is always possible. The Camera's cassette holds up to 2500 full-frame or 5000 half-frame images, allowing long runs without operator attention.

Once imaged, the film is loaded into the projector of the Rachwal Super 70 Platemaker. Under computer control, the projector moves to the appropriate position on the plate and projects each page image to full size to expose the plate. The process is repeated as each page is exposed automatically in correct imposition.

The work that has come off the photocomposer camera shows images with sharpness that equals or exceeds that of conventional methods.

Figure 7 is a page from a telephone directory illustrating both text and line art.

The image shows a page from a telephone directory. At the top left, it is titled '611 Restaurants' and 'Restaurants'. Below this, there is a list of restaurant names and phone numbers, such as 'ALL GARAGE', 'BONATELLI'S', 'JEFFERSON SQUARE INN', and 'LUZZI'S'. There are several logos and graphics interspersed with the text, including a circular logo with 'ALL GARAGE' and 'PARADE', a logo for 'JEFFERSON SQUARE INN' with a crown, and a large logo for 'Luzzi's' with a crown and the text 'ITALIAN - AMERICAN RESTAURANT'. There are also some smaller logos and text blocks, such as 'BONATELLI'S Fine Italian Cuisine' and 'JOIN US FOR BREAKFAST, LUNCH & DINNER'. The overall layout is dense and contains a mix of text and graphics.

Figure 7. Sample of work from Photocomposer Camera. The System also images halftones.

Since this System doesn't produce RC paper originals, we have developed two other methods of obtaining proofing copies.

You can produce "blue line" proofs by imaging blue line paper on the platemaker in the same manner you image plates, or you can use the Tameran proofing device from Tameran Inc. of Chagrin Falls, Ohio. This proofing device gives quality plain paper proofs from Rachwal's 70mm film by projecting each page through a series of mirrors onto the electrostatic copier.

The Rachwal Super 70 Projection Platemaking System provides productivity and profits for today, and now, with the photocomposer camera interface to electronic publishing, the System will provide well into the future.