



# **Controlling Quality on Imagesetters and Processors**

**Matthew Boulton College**

## CONTROLLING QUALITY ON IMAGESSETTERS AND PROCESSORS

Outputting film from an imagesetter is starting to become out of date with the advent of computer to plate systems. It gives a printer more flexibility with film output because it means that last minute alterations can be 'planned and stripped' into the final film assembly without wasting plates.

### Photographic Film

Photographic film consists essentially of a vinyl plastic base which is coated with a light sensitive emulsion on one side and a thin gelatine coating containing anti-halation compounds on the other. This stops light being reflected back into the emulsion.



*Photographic Film:*  
**A:** Light sensitive emulsion  
**B:** Vinyl base  
**C:** Anti-halation layer

The imagesetter produces photographic film which is either in *negative* or *positive* form.

### Negative:

Opaque black areas for the non-image areas  
 Transparent areas for the image areas

### Positive:

Opaque black areas for the image areas  
 Transparent areas for the non-image areas

A negative or positive can be output in either *correct* or *reverse reading* and emulsion side up or emulsion side down.

### Lithographic Platemaking

Most pages are planned for offset lithographic printing with the emulsion side upwards, *reverse reading*. When the plates are produced the planned and stripped pages are turned over to read 'correct reading'. The film emulsion is in direct contact with the plate coating and is exposed. This produces a 'correct reading' lithographic plate.

### Images Used in Offset Lithography

**elɹɹ ɹoɹ ɹɹɹC**

**Cars For Sale**

**elɹɹ ɹoɹ ɹɹɹC**

**Cars For Sale**

### *Reverse Reading Film -*

*Image emulsion side up. This is turned over to be 'correct reading' when it is in contact with the plate prior to exposure.*

*Correct Reading Image - Printing plate*

*Reverse Reading Image - Blanket*

*Correct Reading Print*

### **Control of Image Density**

When a new imagesetter is installed it is normally the job of the supplier to establish the standard for film output.

This is done by using a densitometer which helps find a balance for accurate tone reproduction. A densitometer can be used to measure:

- The original image
- The film output from the imagesetter
- The proofs
- The press run

The density measurements can be used to adjust the imagesetter. For example, if the density of the film is too great, the exposure value can be adjusted for the imagesetter. The density readings from the film can also be used to make adjustments to the film processor.

Once the imagesetter has been calibrated the results can be measured from a test page run on the printing press. This will indicate the total dot gain. This information can be used to create a transfer function which can be used in Photoshop software. This will adjust the imagesetter to compensate for dot gain

Good housekeeping is important to maintaining quality standards. This includes the careful maintenance of the imagesetter optics, mirrors, prisms etc. Lubrication of moving parts and dust prevention are all vital to correct working of the imagesetter.

### **Film Processor**

Film processing machines are designed to carry the exposed film through a series of baths in which the film is:

- Developed
- Fixed
- Washed
- Dried

Most processors contain roller transport for the film. The baths are temperature controlled and automatically replenished, the whole sequence being closely monitored to produce consistent results.

Replenishment of developer solution is most important to maintaining image quality. This is maintained by replenishing - adding fresh chemicals when a predetermined amount of film has been processed.

Film processors require periodic cleaning, lubricating and checking of film transport systems to maintain constant quality output.

## **CONTROLLING QUALITY ON IMAGESSETTERS AND PROCESSORS**

- (1) What is replacing film processing in the prepress area?
- (2) Name the 3 layers in a piece of film?
- (3) What is the function of the anti-halation layer in a piece of film?
- (4) Describe a negative photographic film?
- (5) What are the other characteristics of negative and positive film?
- (6) Describe a negative film with regard to the emulsion side when being used to make plates for offset lithography?
- (7) When exposing the film to a lithographic plate, describe the positioning of the emulsion?
- (8) In offset lithography the image on the plate is transferred to the blanket, describe how it reads?
- (9) Name the item of equipment which is used to measure the quality of film output from an imagesetter?
- (10) What primarily does the densitometer measure on a piece of film?
- (11) Where can adjustments for dot gain be made?
- (12) Name the 4 sections in a film processor?
- (13) Give a definition of the term replenishment with regard to film processing?