

Curriculum for Excellence



Graphic communication

Printing and Pre-Press

Commercial Printing

Commercial printing is done on using different printing machines, these include;

- Off-set lithography
- Digital printing
- Screen printing

But the main printing process used commercially is Off-set lithography

Off-set lithography

This process applies four colours of ink. Each colour is applied separately from a printing plate wrapped around a roller. The plates each apply one of: **Cyan, Magenta, Yellow and Black** (the key colour). This is called the **CMYK** or 4 colour printing process.

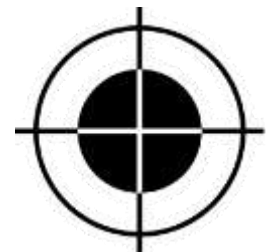
The printing plates need to be lined up carefully so that each colour is applied in exactly the correct position. If they are not positioned correctly a blurred image will result.

Printers use a system of **registration marks** which allow the machine to align the four colours correctly to ensure a quality image.

Off-set lithography printing is high quality but is only economical for large print runs in the 100,000's. This is due to the set up cost such as the making of the printing plates.



Poor Registration



Registration Mark

Commercial Printing

Printing Terms

OS Paper: Oversized paper is required because printing does not go right to the edge of the paper. To achieve bleed the publication is printed on bigger, OS, paper and cropped to size after printing.

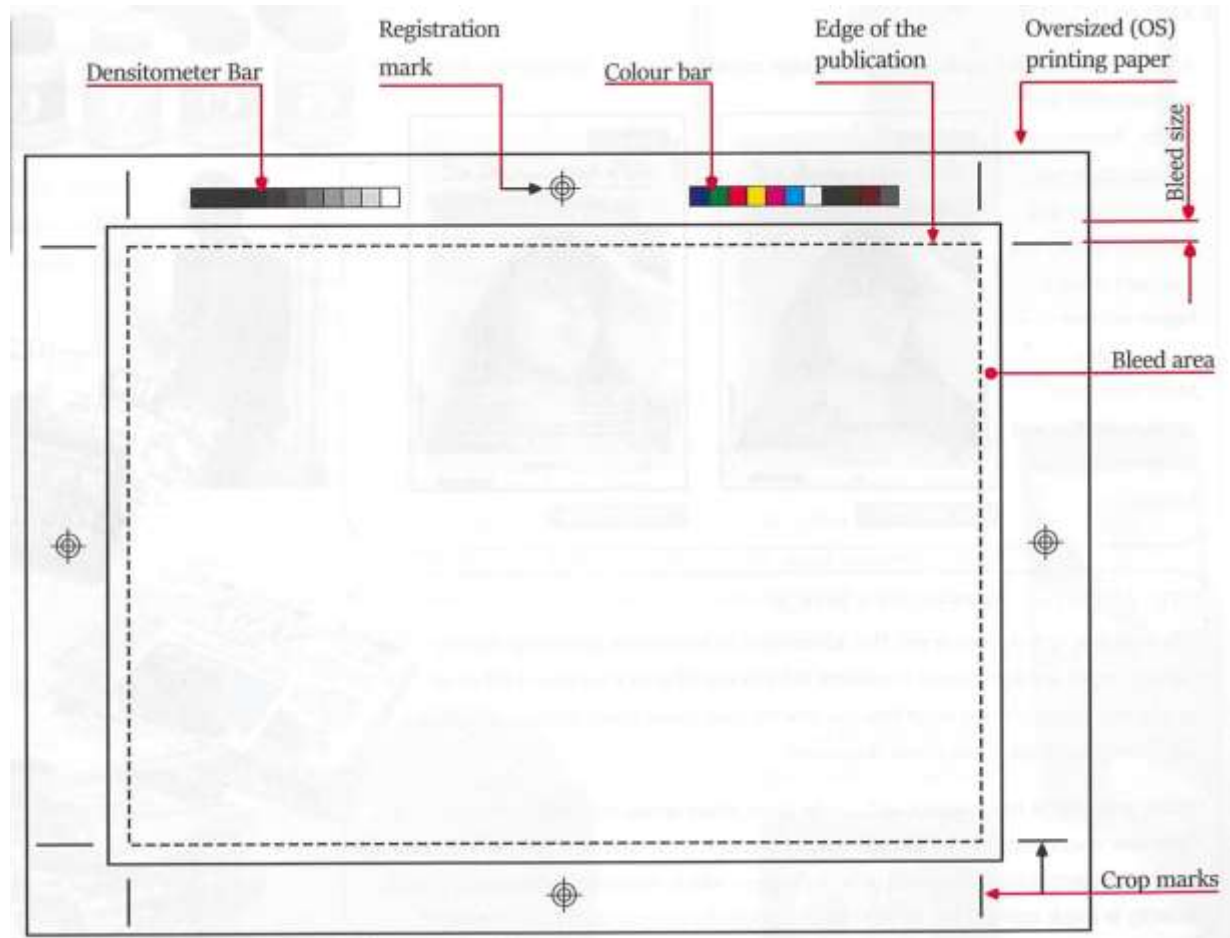
Crop Marks: these indicate the lines along which the OS paper is to be cropped (trimmed) to size after printing.

Bleed Size: This indicates the area outside the publication size that is printed on. This allows images to be show to the edge of the paper once cropped.

Registration marks: there are 4 registration marks. They should be sharp and black if the printing plates are lined up correctly.

Colour bar and densitometer bar: Used to check for an accurate colour match at printing. The printer compares the colours against an accurate swatch card. These are trimmed off during cropping.

The preflight features shown below enable the printer to check the colours are applied accurately and guide the trimming of the over-sized paper to the finished publication size.



Printing for a Greener Planet

Printing and the Environment

Printing on paper has been costly to the environment. Currently 40% of the world's logged timber is used to make paper and this figure is projected to increase. Paper manufacturing is also costly in energy and water.

Printing Inks

The printing industry world-wide uses very large quantities of oil based inks every year. As oil runs out so will the option of using ink made from this source. Already, vegetable based inks are being introduced to manage the industry in a more sustainable, eco-friendly way. Using vegetable inks also makes the recycling process easier, cheaper and less polluting.

Digital Publications

Newspapers and magazines were once only available in paper form. This put a strain on our natural timber resources because paper is made from timber. Now newspapers and magazines are available in an electronic format. Online subscriptions mean that readers can enjoy publications on their computer or mobile phone which reduces the impact on our natural resources.

Recycled Paper

Many publications are now reducing their impact on the environment by using recycled papers. Recycling once produced only low quality paper but modern recycling methods produce excellent quality printing paper. The process of recycling also uses 70% less energy and water than making new paper from timber.