

PRINTING PROCESSES

INTRODUCTION

It would be very difficult, if not impossible, to teach anyone the differences between printing processes by words alone. Nor do the black and white illustrations used in this guide help a great deal.

Using the basic information supplied here, and the examples given, you should be able to build your own reference collection of "types" and have a ready made comparison guide to help solve any problems you encounter.

As with most technical aspects of philately, there is no substitute for "hands on" experience, in this case the experience and knowledge gained by owning and studying some of the examples given.

Wherever possible the examples include New Zealand stamps, not because they are necessarily the best examples but rather because they will be easier and, hopefully, cheaper for collectors in N.Z. to obtain.

THE NAMES GIVEN TO PROCESSES

NOTE. A full description of all the following processes is given later in this article.

The major problem any new collector has to solve is the problem created by different names being used for what is, essentially, an identical printing process.

Four different true printing processes have been used for the production of postage stamps. These, with their alternative names are:

RECESS PRINTING. Also known as,

LINE ENGRAVING

TAILLE-DOUCHE (French)

INTAGLIO (Italian)

TYPOGRAPHY. Also known as,

SURFACE-PRINTING

LETTERPRESS

LITHOGRAPHY. Also known as,

OFFSET-LITHOGRAPHY

PHOTO-LITHOGRAPHY

PHOTOGRAVURE. Also known as,

ROTOGRAVURE

HELIOGRAVURE

There are of course a number of processes used for stamp production which are not true printing processes. These will be described, with examples, after the processes listed above.

RECESS PRINTING,

is a process which involves cutting the design into the printing plate, applying ink to the plate, wiping the plate to leave ink in the recesses only and applying paper to the plate under pressure so that it takes up the ink from the recesses.

This process leaves the individual lines of design standing proud of the paper, these lines can normally be felt with fingertips or by running a fingernail over the paper.

This process was used for the first ever stamps, the 1d black and 2d blue of Great Britain and for a great number of earlier issues of many countries. The process is not used regularly by many countries nowadays, (France, Sweden, U.S.A. and Czechoslovakia are the main exceptions), as it is both expensive and time consuming to produce stamps this way. There can be little doubt that this is, and always has been, the method used to print the most attractive and eye-catching stamps.



Examples to look for.

All New Zealand Banknotes are Recess printed.

N.Z. 1935-1947 Pictorial issue. (Except the 9d.)

N.Z. 1940 Centennial issue.

Australia 1957 Xmas issue.

Niue 1950 Pictorial issue.

Tokelau Is. 1948 Pictorial issue.

TYPOGRAPHY,

is the opposite to Recess printing in that the stamp design is in "relief" on the printing plate, the lines used for printing are raised above the rest of the plate. Ink is applied only to the raised portions and the paper is placed, under light pressure, on top of the plate.

This process can often be identified by the lines of design being raised on the back of the stamp.

The process was popular in the early part of the 20th century as a cheap alternative to Recess printing, however it's use in modern times is normally limited to overprinting.



Examples to look for.

N.Z. 1909-1925 1d Dominion.

N.Z. 1935-1947 Pictorial issue, 9d value only.

Australia 1915-1930 K.G.V. Definitive issues.

LITHOGRAPHY,

is a process which has changed significantly. In the original process the design was transferred to the plate or "stone" using a special greasy ink. The flat printing surface was then moistened so that when ink was applied it adhered only to the greased portion and this was then impressed on to the paper without the use of real pressure.

In offset-lithography the image is taken up by a rubber "blanket" which "offsets" it onto the paper.

In the more modern photo-lithography process the stamp design is photographically processed onto an etched zinc plate which is attached to the cylinder of a rotary printing press.

This latest version of lithography is the most common commercial printing process today, as it combines cheap plate making with the comparatively high speed rotary printing press.

Thomas De La Rue & Sons, a famous printing firm, developed their own version of this process and began using it in 1966. Using a finer screen than normal this method was patented under the name "Delacryl". This process has been used for N.Z. stamps. Recess leaves a raised image, typography leaves a lowered image, lithography is best considered a "flat" process.





Examples to look for.

N.Z. 1965 International Co-operation Year

N.Z. 1973 Steam Locomotives

N.Z. 1968 Centenary of the Maori Bible (Delacryl)

Australia 1980 Waltzing Matilda issue

PHOTOGRAVURE,

is a form of recess printing. The basic design is photographed and the negative is used as a kind of 'master die' from which a series of positive images, as many as are required to make up a sheet of stamps, is produced on a glass plate. This is known as the 'multipositive'. The plate is processed onto a carbon tissue which has a 'screened' surface, a fine network of crossed lines. The carbon tissue, is then wrapped around a copper cylinder and etched with a solution of ferric chloride, leaving a pattern of small recesses on the cylinder. These correspond to the 'grid' formation of the screen and vary in depth according to the strength of the tone in the multipositive images. The cylinder is then chrome-plated and used for printing. Rather than trying to understand all of the above you may be better to accept that this is a process akin to recess printing, (it produces a raised image on the paper), which is much cheaper and which lacks the superb quality of true line engraving as found in the original process.



Examples to look for

N.Z. 1959 Red Cross Centennial

N.Z. 1965 50th Anniversary of ANZAC

Great Britain 1973 Xmas

Australia 1970 Captain Cook

There are other terms used in relation to the printing of stamps which are not true printing processes. It is necessary to know these also if you are to avoid being confused when reading through catalogues or handbooks.

EMBOSSING

or 'die-stamping' is a method of stamping in relief. The relief or raised impression is obtained by placing the paper between two matching dies, one (male) bearing the image design raised, the other (female) bearing the image design in recess.



Examples to look for
N.Z. 1969 Captain Cook. (Embossed head)
Great Britain 1973 British Paintings
(Queens head printed in Gold then Embossed)

ENGINE-TURNING,

is a type of ornamentation made by a rose-engine or lathe which enables intricate geometrical patterns to be engraved on steel. Found most often on early issues such as the 1d Black and 2d Blue of G.B.



Examples to look for
Great Britain 1858 1d Red

LINE BLOCK,

is used in conjunction with the Typographic printing process, with printing plates produced in a manner similar to the photogravure process. However the fine screen used to suggest colour tones is not used and only extreme contrast is possible with a Line-Block.



Examples to look for
N.Z. 1925 Dunedin Exhibition
N.Z. 1931 Airmail issue

Having obtained the examples given so far it will be of interest to improve your reference collection by looking for stamps which have been produced using a combination of printing processes.

It would even be possible to put together a thematic collection of printing processes. This would be expensive if all known examples were collected but relatively cheap if it was considered to be an 'educational' collection of common material.

Examples of combination printings.



RECESS & PHOTOGRAVURE
Great Britain 1982 Maritime Heritage
Great Britain 1984 Mail Coaches



RECESS & LITHOGRAPHY
Australia 1969 & 1970 Famous Australians
(recess on a lithography background)



RECESS & TYPOGRAPHY
Australia 1955 Centenary of YMCA
(design recess, emblem typography)
Australia 1959 Self Government in Queensland.



LITHOGRAPHY & TYPOGRAPHY
 Great Britain 1973 Inigo Jones
 Australia 1974 150th Anniv. Independent Newspaper



PHOTOGRAVURE & EMBOSSED
 N.Z. 1969 Captain Cook
 Great Britain 1973 British Paintings
 (both examples have embossed heads)

Many countries have produced stamps using a combination of printing methods, most of which could be obtained without spending a great deal.

Often, especially in definitive issues a stamp will be re issued using a different process.



Examples to look for

N.Z. King George V low value definitives.
 RECESS printed when first issued in 1915
 TYPOGRAPHY printed also in 1915.

I have deliberately not given the low values which can be found for the K.G.V. issues. Look in any good catalogue and work it out yourself, or better still, examine a number of these and see if you can determine the difference without help. The only way any collector can become proficient at picking the correct printing process used is to examine large numbers of stamps which have been issued over a number of years and by a number of countries.

The technical aspects of philately always sound very complicated if not totally impossible to the beginner. This is simply not the case, a careful study of the examples given above should answer most of the questions raised by a majority of collectors. If this is not so you should get in touch with an experienced collector and ask for further explanations or better examples. If this is also not possible then write to,

Philatelic Youth Council

P.O. Box 2979

AUCKLAND

with full details of your particular problem. Every effort will be made to find an answer for you.