

5.0 - Separation - Perforation

Fundamentals of Perforation

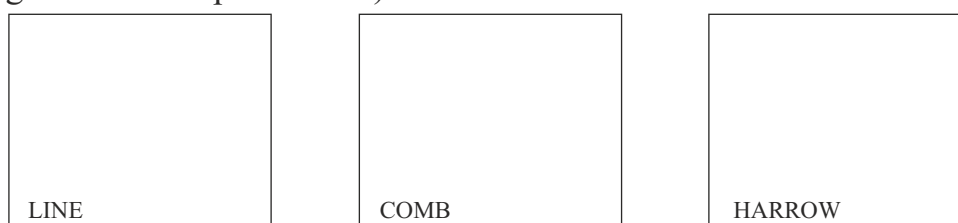
Modern postage stamps are perforated by three methods in constant use:

- (a) line
- (b) comb
- (c) harrow

Each method produces perforations that can be distinguished by examination without a magnifying glass.

Characteristics of the individual perforation types

The characteristics of the corner perforations tell us whether we are looking at a stamp with harrow or comb perforation, or else one with line perforation. We can and must make this differentiation only by considering the perforations characteristics and without use of perforation gauges. To again explain the differences between harrow or comb perforation on one hand and line perforation on the other hand as clearly as possible, refer to the illustration above (regular corners with harrow or comb perforation, irregular with line perforation).”



It should be added that a stamp with irregular corners CANNOT be harrow perforated.

Whilst, by a fluke, the strokes of a line perforator might yield a fairly regular corner to a single stamp, it is almost impossible that any specimen might be found with four regular corners, especially when checked under a magnifying glass.

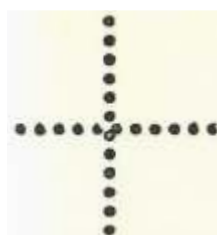
Compound Perforations

Compound perforation is a sub-type of line perforation. This derives from the case where the same sheet of stamps is perforated by two different perforators in different directions. First of all the horizontal perforations are carried out with one perforator across the sheet of stamps, then the same sheet of stamps for the vertical perforation is inserted in another perforation machine. If the two machines use lines of pins set at different intervals, the perforated sheet of stamps shows horizontally one perforation and another vertically. A stamp in normal compound perforation thus shows above and below one gauge and down both sides another.

Line perforation

Line perforating is the method of perforating postage stamps in lines. Line perforating is done in two ways.

- (1) Rotary line perforating is done by machinery equipped with wheels that have perforating pins inserted around the circumference. These wheels, arranged on an axis, are adjusted to punch the perforations in the rows of gutters between the stamps in one direction one sheet at a time.
- (2) The second method of line perforating is done by a machine that strikes one line of perforations in sheets or panes at one time. More than one sheet can be perforated at a time on this machinery.



Line perforations rarely meet in perfect rows and cause Uneven corners.

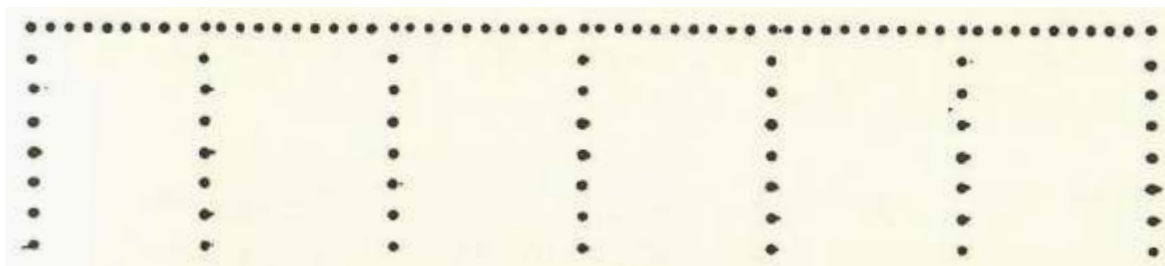
Note: 6th Def. stamps do not have any stamp with line perforation

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Comb perforation

Comb perforating is the method of perforating sheets or panes of postages stamps by comb machinery. The comb machines have punches arranged in the shape of a hair comb, with lines of punches to perforate the horizontal row of stamps and vertical punches to strike all the spaces between stamps in one row at a single beat, Some machines have arranged their comb perforating machines to strike more than one row at a time.

The word "comb" is not a short form of "combination".



The comb perforating machine strikes the top row across the sheet and all the vertical perforations in one row.

Features of comb perforation

Comb perforation is today the most common kind of perforation. The perforation process is automatic. The perforation mechanism with the pins ordered in a comb shape rises after perforating the first row of stamps (thus perforating three sides of the top row of the sheet of stamps). The sheet of stamps is now advanced to the position of the next row of stamps, this is then perforated and so on to the last row of the sheet. With flawless operation the automatic perforation machine naturally also produces stamps of equal size and each stamp, horizontally and vertically always exhibits the same number of teeth. The corners of the stamp, as with sheet perforation, are all equal and regular. Irregularities in the operation of the perforator lead occasionally to shortened stamps or to stamps with broadened corners, which does not, however, thereby change the basic characteristics of the perforation.

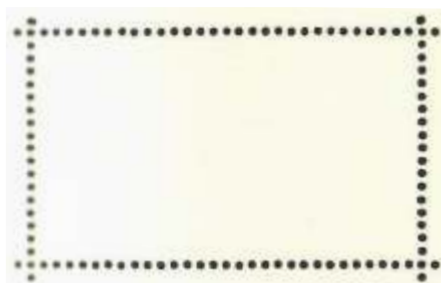


It is thus understandable, particularly through inaccurate work, that the distances between the individual rows of holes slightly differ and therefore the individual stamps within the each sheet of stamps may be of different sizes.

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Harrow perforation

The harrow perforating machines punch all the perforations in stamp sheets at one time. Therefore the perforations are nearly perfect, but the process is slow compared to the rotary method of line perforating. Harrow perforating is mostly confined to perforating souvenir or miniature sheets of stamps.



Harrow perforations are all struck at one time.

Features of sheet perforation (harrow perforation)

With sheet perforation, the perforation pins in the perforation machine are arranged in little rectangles or boxes (hence the German name Kastenzählung) the size of the individual stamps. There are as many of these boxes as the number of stamps in the printed sheet. Accordingly, with the downward stroke of the perforation apparatus, all the perforation holes in the underlying sheet of stamps are punched in a single process. From this mode of operation of the perforation machine it follows that the corners of the individual stamps are all the same and of regular appearance and the individual stamps are all of an equal size.



These are a few series of Plate numbers in 6th Definitive Series; in this third printing have been found with this perforation.

Coarse perforations

Coarse describes the large holes of perforations and not rough quality in the perforations.

How are perforations measured

Perforations are measured according to the number of holes within 2 centimeters, or approximately 3/4 inch.

Postage stamps have perforations in Combination sizes

Stamps of some values have perforations of two sizes on one stamp to help separate them easily. More perforations are sometimes employed across the grain of the paper than with it. Two or more perforation sizes in one stamp almost help to prevent forgery.

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Blind perforations

Blind perforations are impressions on the stamp paper where perforation holes were intended. As a result, some stamps appear imperf between or partly perforated.



Double perforations

Double perforations are two rows or partial rows of vertical or horizontal perforations. They occur as printers' waste in postage stamps printed by any method. Sometimes the inspectors in the security printer do not see the perforations, and the stamps reach the public.



Freak perforations

Various kinds of abnormal perforations caused by faulty machinery or folded paper are called freak perforations. These may cross stamps at any angle without regard to the proper stamp margins.

