

TECHNICAL NOTE

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Significance of U.S. Mail Indicia

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ABSTRACT: An update of U.S. Postal Service developments of interest to the questioned document examiner.

KEYWORDS: questioned documents, U.S. Postal Service, letter-sorting machines, character recognition, postage stamps, optical character recorders, bar codes, bar code readers, zip plus four

In the early 1970s as a result of the increase in mail volume, mechanization of mail delivery became necessary. The "pigeonhole" concept of mail sorting quickly became obsolete. Likewise in the 1980s, as mail volume continues to increase, mechanization is being superseded by automation. During this mail delivery evolutionary process marks have been placed on U.S. mail. What do these marks signify?

Letter-Sorting Machine Marks (LSM)

LSM marks on an envelope serve as proof that the letter entered the mail stream. Proof of mailing can be established without a postmark or cancellation mark. All mail processed through a major mail facility goes through a letter-sorting machine (LSM). In this process, a two-letter, two-number, or letter-number combination is placed on the reverse of each envelope every time that envelope goes through a letter-sorting machine (Fig. 1).

Zip + 4

Zip codes (Zoning Improvement Plan) were first introduced in July of 1963.² In September of 1978 the five-digit zip was expanded to the Zip + 4 format [1]. These additional four digits represent sectors and segments and may narrow the mail down to part of a building or even an office within a building. Success of the Zip + 4 program, using various incentives, rests upon getting the business users involved since they represent 80% of total mail volume.

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²G. R. Stangohr, "Recent Postal Developments of Interest to the Questioned Document Examiner," 16 July 1975.

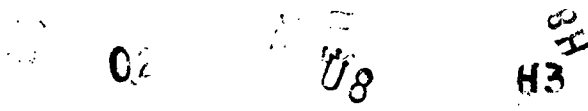


FIG. 1—Letter-sorting machine marks.

Optical Character Reader (OCR) and Bar Code Reader (BCR)

Optical character readers (OCR), bar code readers (BCR), and bar codes complement the Zip + 4 program and eventually will allow mail-sorting automation down to a specific carrier route. OCRs and MLOCs read, at the point of entry, both the five- and the nine-digit zip codes on letter mail bearing a typed or printed address. A printer attached to the OCR then prints a machine-readable representation of the zip code in bar code form. Bar codes look like picket fences in the lower right corner of an envelope [2]. Bar codes are either put on by the mailer or at the point of origin by the postal service and indicate a letter's destination. Bar codes are not evidence that a letter was mailed or entered the mail stream. Once a bar code is affixed to an envelope the letter is directed to the postal facility serving the addressee. At this facility a low-cost highly reliable bar code reader (BCR) reads the code and directs the envelope to the appropriate delivery route.

Bar Codes

The basic elements of bar codes are bars and half bars (POSTNET) [2] (Fig. 2). A combination of five bars, two full and three half, are used to represent each digit from 0 to 9.

Each code field has one additional digit. This character is part of the error recovery system called a "corrective character" used to ensure that the digits in the code field add up to a multiple of ten. Bar codes can be read as follows: (1) disregard the first and last bar, (2) group the bars in multiples of five, (3) the last character will equal the sum of the first five or nine characters subtracted from a multiple of ten (Fig. 3).

Mail can also be scanned twice (see Fig. 4).

U.S. Postal Service strategy is to eventually put a bar code on every piece of mail.



FIG. 2—Bar codes.

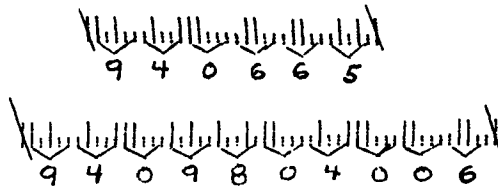


FIG. 3—To read a bar code: (1) disregard the first and last bar, (2) group the bars in multiples of five, (3) the last character will equal the sum of the first five or nine characters subtracted from a multiple of ten.

Mail Scanned Twice

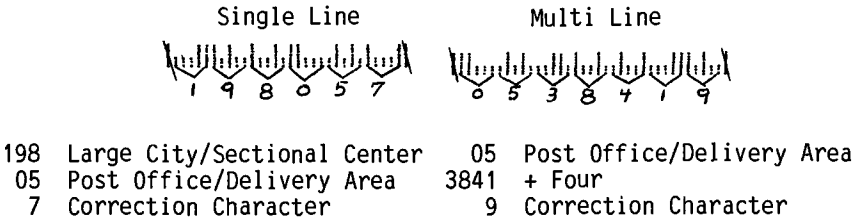


FIG. 4—Mail scanned twice.

U.S. Postage Stamps

Some U.S. postage stamps are now being manufactured outside the Bureau of Engraving by private concerns. To date, the American Bank Note Co. has manufactured nine such stamps.

Presently all U.S. postage stamps are overlaid or "tagged" with zinc-ortho silicate, which emits a signal when exposed to short-wave ultraviolet light. By detecting the phosphorescent signal, sensors in automated facer/canceler equipment locate the stamp, position or "face" the envelope, and apply the cancellation. In current U.S. stamp production, phosphor is suspended in a layer of varnish which is applied over a stamp's printed surface. In May 1987 a special coil stamp was produced, as a test, using prephosphored stamp paper. This stamp is sold only at philatelic centers and is a flag over the capitol stamp bearing a "T" at the bottom. A critical usage test of this paper will be the extent of damage, if any, caused to stamp-perforating machines by the zinc-ortho silicate which is classed as an abrasive. Use of prephosphored paper is expected to minimize the loss of revenue caused by reuse of stamps, improve stamp quality, and reduce manufacturing costs [3].

Future

Automated bar-coded colored tracking labels are being developed for filing and retrieval of information regarding certified, insured, registered, and cash on delivery (COD) mail [4].

Since mail delivery is highly labor intensive and it is estimated that by the year 2000 some 200 billion pieces of mail will be handled yearly, automation of mail processing is extremely important if costs and level of service are to remain at an acceptable level. Presently 3% of all letter mail is automatically sorted to the carrier route. By the year 1990, through automation, the Postal Service hopes to be able to sort 50% of all letter mail to the carrier route [5].

References

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- [3] *Stamp News*, Philatelic Release #28, 8 May 1988.
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- [5] "Multiline Technology to Highlight 88," *Postal Leader*, 19 Jan. 1988, p. 4.

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