134358

United States General Accounting Office

GAO

Report to the Chairman, Subcommittee on Government Information, Justice, and Agriculture, Committee on Government Operations, House of Representatives

October 1987

POSTAL SERVICE

Processing of ZIP + 4 Letters Receiving Postage Discounts

040509/134358

GAO/GGD-88-5

GAO

United States
General Accounting Office
Washington, D.C. 20548

General Government Division

B-215132

October 16, 1987

The Honorable Glenn English
Chairman, Subcommittee on Government
Information, Justice, and Agriculture
Committee on Government Operations
House of Representatives

Dear Mr. Chairman:

This report responds to your request that we review the Postal Service's processing of letters receiving a ZIP + 4 postage discount.

The report provides information on the quantity of such letters that received full automated processing from late September 1985 to mid-March 1987. For letters that did not, the report provides possible reasons as to why not and estimates how much revenue the Service lost in the form of ZIP + 4 postage discounts.

As requested by your office, no further distribution of the report will be made until 30 days from the date of the report unless you publicly release its contents earlier. At that time, copies will be sent to the House Committee on Post Office and Civil Service and its two postal subcommittees, the Postal Service Board of Governors, the Postmaster General, and the Postal Rate Commission. Copies will also be made available to other interested parties upon request.

Sincerely yours,

W. J. Anderson

William J. Anderson
Assistant Comptroller General

Executive Summary

Purpose

In 1983, the Service implemented the ZIP + 4 program to reduce the cost of processing First-Class letters and cards. The program features a longer—9 rather than 5 digit—ZIP Code, which businesses are encouraged to use, and over $600 million worth of new automated equipment to process letter mail.

As an incentive for mailers to use the ZIP + 4 code, and thereby provide letters which the Service can process automatically to reduce processing costs, First-Class letters and cards can be mailed at less than the full postage when addressed with the ZIP + 4 code, mailed in sufficient quantity, and meeting certain other qualifications. About 5 billion letters obtained nearly $28 million in ZIP + 4 postage discounts between late September 1985 and mid-March 1987.

Because of indications that some discounted ZIP + 4 mail was not being processed on the automated equipment, the Chairman, Subcommittee on Government Information, Justice, and Agriculture, House Committee on Government Operations, asked GAO to determine how much discounted mail was bypassing or being rejected by the automated equipment and why. The Chairman also wanted to know how much revenue the Service was losing in the form of discounts on such mail, and what steps GAO would recommend to ensure that discounted letters can be and are automated.

Background

To get millions of letters to their respective destinations each day, the Service moves each letter through a sequence of sorting or processing steps. Appendix I describes the Service's mail processing system in detail. Before automation in 1983, the processing was essentially performed manually and mechanically.

The automated equipment consists of optical character readers, which read the ZIP + 4 code and print a corresponding set of bar codes on the envelope, and bar code sorters, which sort the mail by reading the bar codes. The ZIP + 4 code enables the equipment to sort automatically to delivery routes (i.e., to the letter carrier who will make delivery), which significantly lessens processing costs.

Postage discounts—0.5 cent or 0.9 cent per letter—have been available since October 1983 to mailers who send sufficient quantities of ZIP + 4 letters.

Results in Brief

Of the 5 billion discounted letters the Service received from late September 1985 to mid-March 1987, GAO estimates that about 10 percent were processed automatically to carrier routes. GAO estimates that the Service provided about $25 million in postage discounts on the 90 percent not processed automatically to carrier routes.

Many letters were not processed automatically because the mail processing centers which did the sorting were not automated. The Service plans to automate approximately 215 centers nationwide and just over 130 centers were automated through postal fiscal year 1986. Of the discounted letters the 130 centers processed, GAO estimates that about 23 percent were sorted automatically to carrier routes.

At automated centers, discounted letters bypassed or were rejected by the automated equipment for reasons such as unreadable ZIP + 4 codes, unreadable bar codes, and too few ZIP + 4 letters going to a geographic delivery area to warrant automation.

GAO believes a larger percentage of the 5 billion discounted letters could have been automatically sorted to carrier routes. Two of the four automated centers GAO visited significantly increased the volume they sort after identifying and counting trays of ZIP + 4 mail at GAO's request. They learned they were receiving many more ZIP + 4 letters than they originally perceived.

Principal Findings

Discounted Volume and Percentage Automated Were Small

Over an 18-month period from late September 1985 to mid-March 1987, the Service received just over 5 billion pieces of discounted ZIP + 4 mail; this mail accounted for about 4.5 percent of all First-Class Mail. The Service used automation to sort about 10 percent of the 5 billion pieces to carrier routes, according to GAO's estimate. More discounted mail received full automated processing the last 6 months of the period (about 266 million letters) than during the previous 12 months (about 237 million letters). (See pp. 12 to 14.)

Service records show that about 90 percent of the 5 billion letters received the 0.5 cent discount and the remaining 10 percent, the 0.9 cent

discount. Using this ratio, GAO estimated the Service gave about $25 million in discounts on mail that was not sorted by automation to carrier routes. (See p. 16 and 17.)

Many Mail Processing Centers Not Automated

The Service plans to automate approximately 215 mail processing centers, and about 130 centers had received automated equipment through postal fiscal year 1986. Letters not destined for the 130 centers could not be automatically sorted to carrier routes. (See pp. 14 and 15.) Also, the 130 centers are generally not responsible for sorting letters to the carrier routes of every post office they serve. (See p. 28.) GAO estimates that the 130 centers were responsible for carrier-route sorting perhaps 43 percent of the 5 billion discounted letters. Of that portion, GAO estimates they sorted about 23 percent automatically. (See pp. 14 to 16.)

Significant Percentages Unautomated at Centers GAO Visited

To obtain further reasons as to why discounted letters were not automated to carrier routes, GAO visited four of the approximately 130 automated centers. Mail processing procedures at the four centers are basically like mail processing procedures at most other automated centers, according to the Postal Service. For a 2-week period in November 1986, GAO estimated that perhaps 40 to 76 percent of the discounted mail the four centers had available over the 2 weeks was not sorted by bar code sorters to carrier routes. The mail either never reached bar code sorters for processing or the sorters were unable to sort it. (See pp. 18 to 20.)

Reasons Why Letters Not Automated

Some letters never reached bar code sorters because procedures in place at two centers were not capturing all of the mail that could be automated. From identifying and counting trays of ZIP + 4 mail at GAO's request, the two centers learned that the volume available for automation was far larger than they previously perceived. The centers changed procedures for capturing ZIP + 4 mail and substantially increased the volume of automated letters. (See pp. 25 and 26.)

Other reasons why mail never reached bar code sorters included:

- Optical character readers rejected letters as unreadable.
- Number of letters going to some delivery zones was too small to justify the use of bar code sorters. (See pp. 19 to 25.)

Reasons why mail processed on bar code sorters was not all carrier-route sorted included: no bar code on envelope, bar code was smudged or printed improperly, and the ZIP + 4 code (as represented by the bar code) was not in the sorting instructions. (See pp. 26 and 27.)

Recommendation

GAO recommends that the Postmaster General direct his Division Managers/Postmasters to periodically count the amount of ZIP + 4 mail that automated mail processing centers are receiving at all entry points to increase the volume of ZIP + 4 mail receiving automated processing to carrier routes.

Agency Comments

In commenting on a draft of this report (see app. IV), the Service said GAO's estimates of the amount of ZIP + 4 mail being processed automatically were made during a time of continuing change, but it agrees that the percentage of ZIP + 4 mail being processed automatically is steadily rising.

Regarding GAO's recommendation, the Service said an impediment to increased automation of carrier-route sorting has been the lack of awareness among some field operations managers of current ZIP + 4 mail volumes and, accordingly, recent instructions to the "field" have highlighted the need to measure this volume locally.

The Service listed several other improvements it is making to increase automatic sorting to carrier routes such as programs to lessen the number of letters rejected by the automated equipment.

Contents

Executive Summary		2
Chapter 1 Introduction		8
	Objectives, Scope, and Methodology	9
Chapter 2 Full Automated Processing Is Proportionately Small but Growing in Use		12
	Volume of Discounted Letters	12
	Most Discounted Mail Missed Full Automated Processing	13
	Revenue Lost on Discounts	16
Chapter 3 Why Discounted Letters Missed Full Automated Processing at Four Locations		18
	The Four Offices Reviewed	18
	Why Mail Missed Full Automated Sorting	19
	Letters Delivered by Associate Offices Usually Do Not Receive Automated Carrier-Route Sorting	28
Chapter 4 Efforts to Increase ZIP + 4 Volume		29
	Service Acquiring Multiline Technology	29
	Other Actions to Increase Volume	30
Chapter 5 Overall Conclusions, Recommendation, and Agency Comments		32
	Recommendation	33
	Agency Comments	33
Glossary		55
Appendixes	Appendix I: Current Mail Processing System	36
	Appendix II: Request Letter	48
	Appendix III: Memorandum to Postal Executives From Postmaster General	50
	Appendix IV: Comments of the Postmaster General on a Draft of This Report	53

Tables

Table 2.1: Discounted ZIP + 4 Letters Nationwide Sorted to Carrier Routes by BCSs 14
Table 2.2: Discounted ZIP + 4 Letters Received by Automated Centers and Sorted to Carrier Routes by BCSs 16
Table 3.1: Comparison of ZIP + 4 Volumes Available for Automated Processing to Carrier Routes and Amounts Processed During 2 Weeks in November 1986 19
Table 4.1: Value of Existing and Proposed ZIP + 4 Postage Discount for Letters 30

Figures

Figure I.1: ZIP Code National Area 37
Figure I.2: Assignment of ZIP + 4 Digits for ZIP Code 12345-1015 38
Figure I.3: MPLSM Sorting Operation 41
Figure I.4: Portion of a Carrier-Route Scheme 43
Figure I.5: Manual Sorting Operation 44
Figure I.6: Barcoded ZIP + 4 Letter 45
Figure I.7: Optical Character Reader 46
Figure I.8: Bar Code Sorter 47

Abbreviations

OCR	Optical Character Reader
BCS	Bar Code Sorter
MPLSM	Multiposition Letter Sorting Machine

Introduction

About 76 billion pieces of First-Class Mail passed through the Postal Service in fiscal year 1986. Since 1980, volume has increased more than 25 percent from approximately 60 billion pieces. First-Class Mail is by far the largest category of mail. To reach its destination, a letter must move through a sequence of sorting or processing steps. Until 1983, this sorting was essentially performed by hand and hand-operated machines. Because volume was so huge and sorting so labor intensive, processing costs were very large and growing.

To lessen this cost, the Service initiated the ZIP + 4 program. The program features automated mail processing equipment and a 9-digit ZIP Code or "ZIP + 4" code, which businesses are encouraged to use on letter mail. With the latest procurement action (see. p. 29), the Service has purchased about $650 million worth of automated equipment.

The automated equipment consists of optical character readers (OCR) that read the ZIP + 4 code and print a corresponding set of bar codes on the envelope, and bar code sorters (BCS) that then sort the mail by reading the bar codes. The ZIP + 4 code enables the equipment to sort automatically to post offices and delivery routes. This reduces labor intensity which in turn significantly lessens processing cost.

Mail addressed with 5 digit rather than 9-digit ZIP Codes can be sorted automatically only to the post office that will make delivery. Individual employees must then sort the letters into individual delivery routes by reading the street address on each letter and striking the appropriate keys on a letter-sorting machine (mechanical sorting), or inserting the letter into the appropriate "pigeonhole" of a letter-sorting case (manual sorting). Full automated processing of ZIP + 4 mail avoids this costly mechanized or manual processing. (App. I provides a fuller explanation of the ZIP + 4 code and the automated and nonautomated processing systems.)

OCRs and BCSs for the automated network have been purchased in two phases. In the first phase, the Service purchased 252 OCRs in 1981, and 248 BCSs in 1981 and 1982. In the second phase, 406 OCRs and 456 BCSs were bought in 1984 and 1985, respectively. (A few machines in each phase were bought for training rather than for operational purposes.) Phase I equipment was all installed by the fall of 1984; installation of Phase II equipment began in January (for OCRs) and May (for BCSs) of 1986 and will continue into 1989.

The Service reported that, as of early July 1987, it had 472 mail processing centers nationwide and planned to install automated equipment in about 215 centers. Each center provides mail-processing services to post offices located within its specific geographic area. The centers that will remain unautomated do not process enough mail to warrant automation, according to the Service. The Service estimates that the approximately 215 centers that will be automated process 85 to 90 percent of all First-Class letter mail.

Just over 130 centers had been automated (with at least one OCR and one BCS) by the end of postal fiscal year 1986 (Sept. 26, 1986). Many of the 130 centers have received and/or will receive additional equipment from the Phase II equipment purchase.

The Service bought "single-line" OCRs in the two phases. They read the city-state-ZIP Code line of the address and print the bar code for either a 5- or 9-digit ZIP Code. If the mailer did not use the ZIP + 4 code, the machine cannot print a ZIP + 4 bar code.

Mailers who address First-Class letters and postcards with ZIP + 4 codes, mail in sufficient quantity, and meet certain other criteria earn postage discounts of 0.5 or 0.9 of a cent for each qualifying letter or card. The discount is part of the Service's "work sharing" program and provides a means to encourage volume mailers to add ZIP + 4 codes to their address files. The discounts were made available in October 1983, which was also the month that Congress permitted the Service to implement the ZIP + 4 program.[1]

The body of this report contains some technical references and information. Readers who are unfamiliar with the Service's basic mail processing system may wish to refer to appendix I for background.

Objectives, Scope, and Methodology

In a March 4, 1986, letter (see app. II), Representative Glenn English, Chairman of the Subcommittee on Government Information, Justice, and Agriculture, House Committee on Government Operations, said he had learned that ZIP + 4 mail being moved between highly automated post offices was not receiving automated processing even though the mail had received postage discounts under the ZIP + 4 program. Because of

[1] The Omnibus Budget Reconciliation Act of 1981, enacted August 13, 1981, prohibited implementation before October 1, 1983, but permitted the Service to proceed with actions necessary to prepare for implementation, such as buying and installing automated equipment.

this information, he asked us to address four questions, all of which pertained to letters receiving a ZIP + 4 discount.

- How much ZIP + 4 encoded mail is bypassing the automated equipment and for what reasons?
- How much ZIP + 4 encoded mail is being rejected by the automated equipment and why?
- How much revenue is the Service losing in the way of ZIP + 4 discounts on such mail?
- What steps should the Service take to ensure the fullest use of the automated equipment and to limit ZIP + 4 discounts on nonqualifying mail?

As agreed with the Chairman's office, we used Servicewide data and case studies to carry out these objectives. We used Servicewide data to determine how many ZIP + 4 letters received full automated processing to carrier routes and to determine the revenue loss for letters that did not. We used case studies to review mail processing operations at four automated facilities so we could directly observe and obtain information on why ZIP + 4 letters may not be receiving full automated processing. The four facilities were among the 130 mail processing centers that were automated through postal fiscal year 1986. Due to staff constraints, we could not review all 130 centers or a statistically meaningful sample of the 130 centers. However, mail processing procedures at the four centers we visited are, according to the Assistant Postmaster General for Mail Processing, basically like mail processing procedures in most of the other automated centers.

To determine revenue loss, we obtained reports at Service headquarters showing the number of letters mailed nationwide at the lower ZIP + 4 postage rates during postal fiscal year 1986 and the first 6 months of postal fiscal year 1987. We also obtained national reports showing the number of letters automatically processed to carrier routes during the same period. Processing data from certain automated centers were not included in the national reports, and we telephoned those centers to obtain the data. We were not able to verify the data obtained from the reports and centers; however, the Service uses the same data for management purposes. From these data, we developed estimates of the number of ZIP + 4 letters receiving full automated processing. We then estimated the Service's revenue loss on that mail not receiving such processing.

To determine why letters which had received a discount were bypassing or being rejected by the automated equipment, we used case studies in

which we reviewed processing operations at four automated mail processing centers: Los Angeles (Terminal Annex facility), Northern Virginia, Philadelphia, and San Diego. We selected the four centers because (1) they were located relatively close to our offices and (2) they represented various stages in their use of automated equipment to process discounted letters to carrier routes. At the time we selected the four centers, two had been using BCSs to process mail to carrier routes, one had just begun, and one had not yet started. All were doing so when our review ended.

At the four centers, postal employees counted trays of ZIP + 4 mail at our request to estimate the volume available for processing to carrier routes. Using reports showing the number of letters processed by BCSs, we calculated the portion of that volume that did not receive full automated processing. Our figures are estimates because the hectic nature of mail processing operations makes counting exact numbers impossible. We discussed the results with local officials to determine why mail had bypassed or been rejected by their automated equipment. We also tested trays of discounted letters for optical character readability, observed mail processing operations at various stages of the processing cycle, reviewed pertinent documents such as Servicewide instructions for improving the optical character readability of mail, and interviewed Service officials.

Our review, which followed generally accepted government auditing standards, was performed approximately between August 1986 and March 1987 at the four automated processing centers and between June 1986 and June 1987 at Postal Service headquarters.

Full Automated Processing Is Proportionately Small but Growing in Use

Between late September 1985 and mid-March 1987, about 5 billion ZIP + 4 letters nationwide received almost $28 million in ZIP + 4 postage discounts. These discounted letters represented less than 5 percent of all First-Class mail processed by the Service nationwide during the period. By our estimate, the Service used BCSS to process about 10 percent of the discounted letters to carrier routes. It gave about $23 to $25 million in discounts on the 90 percent that BCSS did not process to carrier routes. Even though the percentage processed automatically remained relatively small, full automated processing increased in the last 6 months of the period. More discounted letters received full automated processing in those months than during the previous 12 months (see tables 2.1 and 2.2).

Volume of Discounted Letters

Postage discounts are available to some mailers who use ZIP + 4 on First-Class letters and cards. The discounts are based on the costs the Service avoids by processing a ZIP + 4 letter over a ZIP (5-digit) coded letter in the automated system. To obtain a discount, a letter must be prepared in such a manner that the automated equipment can process it (for example, the city-state-ZIP + 4 code line of the address must be visibly placed so the OCR can read it), must be mailed in sufficient quantity, must have postage paid by precancelled stamp, meter stamp, or permit imprint, and must bear the correct ZIP + 4 code. Discounts are available only for First-Class letters and cards that meet the criteria.

Two ZIP + 4 discounts—0.5 and 0.9 of a cent—are available, depending on whether letters are presorted or not. If the mailers do some or all of the initial sorting themselves, thereby allowing the "presorted" mail to bypass processing operations, the Service will provide them a postage discount. Letters presorted by ZIP Code (first 3 or 5 digits) earn a discount of 4 cents each. Presorted letters earn this discount when addressed with 5-digit ZIP Codes. Presorted letters earn an additional discount of 0.5 cent each if they are addressed with ZIP + 4 codes and if they meet the other criteria for the ZIP + 4 discount. Letters earning both the presort and ZIP + 4 discounts receive a total postage discount of 4.5 cents each. Letters which are not presorted but meet the criteria to earn a ZIP + 4 discount receive a discount of 0.9 cent each. A presorted mailing must contain a minimum of 500 letters; a nonpresorted mailing, 250 letters.

When depositing a discounted mailing, mailers must give the post office a statement showing how many letters are being deposited, at what postage rate, and the total postage paid. Data from these statements go

into a national report, which is published at least once every accounting period.[1] The reports from September 28, 1985, through March 13, 1987, show the Service received about 5.1 billion discounted ZIP + 4 letters over the 18-month period. Discounted ZIP + 4 mail accounted for about 4.5 percent of all First-Class Mail during the 18-month period. Of the 5.1 billion letters, about 90 percent received the 0.5 cent discount and about 10 percent received the 0.9 cent discount.

Most Discounted Mail Missed Full Automated Processing

The Service assigns each step within the mail processing sequence a unique operational number. The number for a given operation differs according to whether the operation is performed by hand, by letter-sorting machine, or by automation. The Service collects information on each operation, such as the number of letters processed. We gathered volume data on operations 866 and 876, which identify mail sorted by BCSs to carrier routes.[2] The two operations require a 9-digit code on the letter.

We compared 866 and 876 data with data on discounted ZIP + 4 volume, described in the previous section, to produce estimates of how much discounted mail received full automated processing. Our estimates are necessarily imprecise because we know of no way to determine exactly how many discounted letters received full automated processing; neither does the Service.[3] We believe, however, together with the Service, that 866 and 876 data provide the best available means for estimating the number of discounted letters processed fully by automated equipment.

Our estimates cover each accounting period in postal fiscal year 1986 and the first 6 periods of postal fiscal year 1987 (from Sept. 28, 1985, through Mar. 13, 1987). Our 866 and 876 data is from mail processing centers that were automated before and during postal fiscal year 1986.

[1]The Service's fiscal year is divided into 13 28-day periods called accounting periods.

[2]The reports on operations 866 and 876 that we used overstate to an unknown extent the number of letters sorted to carrier routes. A BCS sorts letters into bins, and it is programmed to put letters going to carrier route 10 into bin 2, for example. Some bins may accept letters not sortable to the carrier route bins; for example, a letter with a ZIP + 4 code that is not in the BCS' program. Mail in such bins must be reprocessed, usually in the manual-mechanical system. The operation 866 and 876 reports do not differentiate between letters sorted to carrier-route bins and to such noncarrier-route bins.

[3]Discounted letters can be processed in automated operations other than 866 and 876, and operations 866 and 876 can include more than discounted letters. Some discounted letters are undoubtedly processed in operations other than 866 and 876 to companies and post office boxes. On the other hand, for example, some courtesy reply letters may be processed in operations 866 and 876. (Courtesy reply mail refers to instances where the mailer uses an envelope preprinted with the recipient's address such as envelopes for sending payments furnished by utility companies and credit card companies. Such mail, which does not receive a postage discount, often bears a ZIP + 4 code and or a 9-digit bar code.)

Table 2.1 shows that, of the 5 billion discounted letters the Service received nationwide from September 28, 1985, through March 13, 1987, about 10 percent were automatically sorted to carrier routes.

Table 2.1: Discounted ZIP + 4 Letters Nationwide Sorted to Carrier Routes by BCSs

Letters in millions

Accounting period	Number of discounted ZIP + 4 letters	Discounted mail sorted on operations 866 and 876	
		Letters	Percent
Postal Fiscal Year 1986			
1	200	11	5.6
2	211	9	4.2
3	219	9	4 1
4	220	12	5.3
5	310	13	4.3
6	196	16	8.4
7	241	19	7.9
8	270	22	8.3
9	254	21	8.2
10	248	21	8.3
11	279	26	9 3
12	262	27	10 5
13	275	31	11.2
For the year:	**3,185**	**237**	**7.5**
Postal Fiscal Year 1987			
1	286	37	12.9
2	308	38	12.4
3	323	42	13 0
4	311	43	13.8
5	375	52	13 9
6	359	54	15 0
For 6 periods:	**1,962**	**266**	**13.5**
Total	**5,147**	**503**	**9.8**

Automated Centers Received Only a Portion of All Discounted Letters

Every discounted letter could not be automatically sorted because some letters were processed by nonautomated centers. The Service plans to automate about 215 mail processing centers. Just over 130 centers were automated through postal fiscal year 1986.

Neither we nor the Service know what portion of the 5 billion discounted letters went to automated centers for processing to carrier routes and what portion went to nonautomated centers. To estimate the proportions, we used Service sample data on the quantity of First-Class letters and cards delivered within individual ZIP Code areas during postal fiscal year 1986. We believe the delivery pattern for discounted letters does not differ from all other First-Class letters. We calculated that about 43 percent of all First-Class letters, and assumed the same proportion of all discounted letters, were delivered to ZIP Code areas covered by the 130 automated offices. This is a rough approximation because data covering every center's precise delivery area—the area for which a center sorts to carrier routes—were not readily available.[4]

For table 2.2, we assumed that 43 percent of the 5 billion discounted letters went to the 130 automated centers for sorting to carrier routes. For the 43 percent that the 130 automated centers received, table 2.2 shows the percentage automatically sorted to carrier routes.

[4]In making this approximation, we generally tried to eliminate ZIP Code areas served by associate offices of the automated centers. The processing of letters going to associate offices is discussed on page 28.

Table 2.2: Discounted ZIP + 4 Letters Received by Automated Centers and Sorted to Carrier Routes by BCSs

Letters in millions

Accounting period	Number of discounted ZIP + 4 letters	Discounted mail sorted on operations 866 and 876	
		Letters	Percent
Postal Fiscal Year 1986			
1	86	11	12.9
2	91	9	9.8
3	94	9	9 4
4	95	12	12 3
5	133	13	10.1
6	84	16	19 6
7	104	19	18.4
8	116	22	19.3
9	109	21	19.1
10	107	21	19 2
11	120	26	21.7
12	113	27	24 4
13	118	31	26.0
For the year:	**1,370**	**237**	**17.3**
Postal Fiscal Year 1987			
1	123	37	30 0
2	133	38	28.9
3	139	42	30.2
4	133	43	32.1
5	161	52	32 2
6	155	54	34 8
For 6 periods:	**844**	**266**	**31.5**
Total	**2,213**	**503**	**22.7**

Revenue Lost on Discounts

Regardless of the reason, we estimate that of the 5.1 billion discounted ZIP + 4 letters the Service received nationwide between September 1985 and March 1987, about 4.6 billion were not sorted to carrier routes with BCSS. If each of the 4.6 billion letters received a 0.5 cent postage discount, we calculate that the Service gave mailers approximately $23.2 million in discounts for mail not automatically processed to carrier routes. However, if we assume that the national discount ratio (90 percent receiving a 0.5 cent discount with the remaining 10 percent receiving a 0.9 cent discount) applies to the 4.6 billion letters, the Service gave

discounts worth about $25.1 million on mail which never received full automated processing.

The 4.6 billion letters were not automatically sorted to carrier routes for many other reasons in addition to centers not all being automated. We visited centers that are automated to learn those reasons and which we discuss in the next chapter.

Why Discounted Letters Missed Full Automated Processing at Four Locations

We reviewed automated operations at four mail processing centers to learn why discounted letters were not receiving full automated processing. For 2 weeks in November 1986, we compared the amount of ZIP + 4 mail each center had available for sorting to carrier routes with the amount BCSs actually sorted to carrier routes. The comparisons revealed sizable gaps. According to the local Service officials we interviewed, the reasons included too few letters to justify the use of BCSs (on a delivery zone basis) and letters rejected because of unreadable addresses and barcodes. On the basis of other work at the four centers, we found that some ZIP + 4 mail missed automated sorting to carrier routes because the centers are not responsible for sorting mail to the carrier routes of every post office they serve (see p. 28).

The Four Offices Reviewed

We reviewed automated operations at four mail processing centers located in Los Angeles; Merrifield, Virginia (Northern Virginia center); Philadelphia; and San Diego. We selected the four centers because of their proximity to our offices and because we wanted a diverse range among the centers in their use of BCSs to sort to carrier routes. All four centers had OCRs and BCSs installed and operational before the start of postal fiscal year 1986 (Sept. 28, 1985). When we selected the centers in the summer of 1986, Philadelphia and San Diego had been regularly using their BCSs to process ZIP + 4 letters to carrier routes, Los Angeles had just begun, and Northern Virginia started after our review began. The Los Angeles and Northern Virginia centers learned from our work that they could significantly increase the volume of ZIP + 4 letters receiving full automated processing.

Each center is responsible for sorting mail to carrier routes in specific geographic areas. The Philadelphia center, for example, sorts to over 1300 routes delivered from 48 stations in and adjacent to the city of Philadelphia. At our request, employees at each center identified and counted trays or feet of ZIP + 4 mail destined for the center's respective delivery area. The trays and feet of mail were converted to quantities of letters by using the Service measure of 446 letters to a tray and 223 letters to a foot.

Employees of the four centers counted trays and feet of ZIP + 4 mail throughout the 2-week period, which we selected arbitrarily. Some trays and feet of mail undoubtedly included nondiscounted letters since mailers can include 5-digit ZIP Coded letters in a presorted ZIP + 4 mailing. On the other hand, some trays and feet of ZIP + 4 mail were probably missed because mail processing operations become hectic at times. The

figures we present, therefore, are estimates of the volume available for processing at each center rather than exact amounts.

While the counts were being made, we collected reports on each center's use of BCSs to sort letters to carrier routes, focusing on operations 866 and 876. These reports showed how many letters were fed to BCSs for sorting to carrier routes and, of that number, how many BCSs sorted to carrier routes. We compared the BCS data with the 2-week volume each center estimated as available for carrier-route sorting. Our comparisons indicate the extent to which discounted ZIP + 4 letters received—and missed—full automated processing. (Table 3.1 summarizes the results of our comparisons.)

Table 3.1: Comparison of ZIP + 4 Volumes Available for Automated Processing to Carrier Routes and Amounts Processed During 2 Weeks in November 1986[a]

Letters in millions

Processing center	Available numbers of ZIP + 4 letters	Percent of available letters[b]	
		Fed to BCSs	Sorted by BCSs
Los Angeles	1.1	66	53
Northern VA	1.2	27	24
Philadelphia	1.6	50	37
San Diego	1.0	76	60

[a]From November 8 to November 21 at the Los Angeles, Northern Virginia, and San Diego mail processing centers and from November 15 to November 28 at the Philadelphia center

[b]Rounded to nearest figure

As the table shows, the four centers had an estimated 1 million to 1.6 million ZIP + 4 letters available for processing to carrier routes during the 2 weeks. Of that volume, 27 percent to 76 percent went to BCSs; however, they were unable to successfully sort all of it. The proportion of letters that were carrier-route sorted by BCSs varied from 24 percent to 60 percent of the letters available for automated sorting. Put another way, a range of 40 percent at one center to 76 percent at another center of the discounted mail missed BCS sorting to carrier routes during the 2 weeks.

Why Mail Missed Full Automated Sorting

We questioned local Service officials on reasons why such proportions of ZIP + 4 letters never got to BCSs for carrier-route sorting and, for those that did, why all could not be successfully sorted. We obtained the reasons through discussions with knowledgeable officials because it was

not practical for us to follow the processing of all ZIP + 4 letters during the 2-week period.

Reasons given to us why letters never got to BCSS for sorting to carrier routes include the following:[1]

- OCRs rejected letters,
- letters were sent to letter-sorting machines rather than OCRs,
- available time—or "operating window"—was not long enough for BCSS to process all letters,
- the number of letters going to some delivery zones was too small to process by BCSS,
- multiline OCRs were used to sort letters to carrier routes, and
- new procedures were not fully in place for capturing all locally destined letters.

Reasons why BCSS could not sort all letters to carrier routes included incomplete or inaccurate BCS sorting instructions and problems connected with the bar code, such as poor print quality. Every reason was not cited at all four centers and the reasons are not listed in any priority order. We do not know the relative degree of importance among the reasons. More information concerning the reasons follows.

OCRs Rejected Letters

An OCR cannot print a bar code if it cannot find and read the city-state-ZIP Code line of an address. OCRs will reject these letters, which then go to the manual-mechanical processing system. A letter can be unreadable because the OCR is functioning improperly and/or the mailer did an inadequate job addressing the envelope (for example, print too light or address label too skewed).

The Service, in its January 1984 economic analysis supporting the automation program, assumed that presorted/discounted letters would achieve an average gross accept rate of 90 percent when passed through an OCR. Tests that we and the Service separately conducted show that the 90-percent assumption is not always met and that OCR readability can be a significant cause of mail dropping out of the automated system.

[1] At two centers, an official questioned the reliability of data derived from employees counting trays and feet of mail. We agree that the estimates resulting from the counts are inexact but we have no reason to believe that only errors which inflated the estimates were made. No alternative, accurate source of information was available to verify the estimates.

At the four centers, we tested the OCR readability of discounted ZIP + 4 letters. To receive a discount, a letter is supposed to be OCR readable.[2] We tested letters from 14 mailers who were among the largest depositors of discounted ZIP + 4 letters at the four centers. For each mailer, we selected trays of letters (usually five trays) from among those deposited in one mailing and had Service personnel process the letters on a Phase II OCR in our presence. (OCRs were bought in two phases and those from the second phase, according to the Service, perform better than those from the first phase.) Altogether, about 35,000 letters were tested, and they obtained an overall gross accept rate[3] of nearly 94 percent. On an individual mailer basis, the gross accept rate for letters tested from two mailers was below 90 percent—81 percent and 31 percent. The gross accept rate for mail from a third mailer was above 90 percent but the letters were not processable by BCSs because they were too thin. Flimsy letters (letters too thin for a BCS to process) was another reason we heard for letters not reaching BCSs for sorting to carrier routes.

Unconnected with our review, the Service conducted tests at 10 automated offices in March 1987 to determine gross accept rates for certain types of mail. The Service reported that almost 2.5 million presorted and discounted ZIP + 4 letters were processed on Phase II OCRs and obtained a gross accept rate of nearly 91 percent. The Service also reported a gross accept rate of around 74 percent for nearly 1.3 million presorted and discounted ZIP + 4 letters processed on Phase I OCRs. The four centers we reviewed were each using both Phase I and Phase II OCRs.

Another important factor concerning readability is the number of letters OCRs are able to bar code with 9 digits. While the Service assumed a 90 percent gross accept rate in the January 1984 analysis, it did not assume that all 90 percent would receive a 9-digit bar code. It assumed that 95 percent of the 90 percent would. In other words, out of every 100 discounted ZIP + 4 letters, OCRs would print a 9-digit bar code on about 85 letters, print a 5-digit bar code on 5 letters, and reject 10 letters. Only those letters emerging with a 9-digit code could be fully processed in the automated system.

[2]Rather than meet OCR readability requirements, a mailer can bar code letters in a discounted ZIP + 4 mailing. The bar code, which represents the correct ZIP + 4 code, must meet certain requirements and specifications

[3]The gross accept rate is the percentage of fed letters that were sorted, whether correctly or incorrectly.

For the approximately 35,000 discounted letters we watched the Service process, we obtained OCR-generated reports showing the number of letters for which the machines read the entire ZIP + 4 code. Before the 35,000 letters were processed, we pulled out of the trays any letters we saw addressed with a 5-digit ZIP Code. Overall, the full ZIP + 4 code was read on about 86 percent of the letters. On an individual mailer basis, letters from 4 of 14 mailers were below 85 percent—5.6 percent, 78.1 percent, 80.6 percent, and 83.1 percent. (In relationship to gross accept rates, the same mail from the first two mailers had obtained gross accept rates of 31 percent and 81 percent, respectively; the latter two, above 90 percent.)

In November 1986, the Service issued instructions for a new national program to improve the acceptance rate of mail that could be or is processed on OCRs and BCSs and to improve the performance of automated operations. Unlike the Service's previous readability enhancement programs, the new program created an occupational position—an automation readability specialist—to focus on improving acceptance rates and automated operations. The Service is organized into 74 geographically defined operating divisions and each is deciding whether or not to staff the position at its automated offices. The position was staffed with one or two people at each of the four offices we reviewed.

Mail processing centers process First-Class letters out of and into their service areas throughout the day, although much of this processing occurs in the evening and morning hours. Mail arriving at a center should be of concern to automation readability specialists as well as mail originating there. Mail coming into a center, for example, may not have passed through automated equipment to get there. According to officials at one of the centers we reviewed, checking the readability of incoming mail is "falling through the cracks."

Letters Sent to Mechanical Letter-Sorting Machines

Mechanical letter-sorting machine operations coexist with automated operations at each of the four centers we reviewed as they do at all automated centers. (Letter-sorting machine operations are described in app. I.) Mail is moved from various receiving, holding, and distribution areas within a processing center to the automation and letter-sorting machine units. During movement, some discounted letters can mistakenly be sent to letter machine units. Some discounted letters may be directed to letter machine units by operationally determined decisions. For example, ZIP + 4 mail may be used to keep letter machine operators busy if their workload becomes too light during the workday or may be

sent to a letter-sorting unit if an OCR or BCS experiences an operating problem. Since letter-sorting machines are used to sort letters to carrier routes they are inevitably used to process some ZIP + 4 mail. However, on the basis of our observations and the procedures the four centers have installed, we believe the centers were making a reasonable effort to send as much OCR-readable mail as practical to OCRs for processing.

"Operating Window" Unavailable to Process All Letters

Mail processing centers all have individual schedules for dispatching mail, which are critical to meeting the Service's time standards for mail delivery. The standards for First-Class Mail are next day (overnight), 2-day, and 3-day delivery and depend on the distance between the originating post office and the post office that will deliver the letter. Centers have blocks of time (operating windows) to start and finish processing. Carrier-route sorting operations at the Los Angeles center, for example, usually run from about midnight to approximately 5:30 a.m., with the last dispatch scheduled for 6:00 a.m.

Operating windows, we were told, affected the amount of ZIP + 4 mail sent to BCSs for carrier-route processing. Mail not sent to BCSs is sent to the manual-mechanical system for processing. On a given night, there may be more mail present than the number of available BCSs can process in the prevailing window. At the time of our review and for mail at the BCS staging area, supervisors at the Los Angeles center usually started around 2:30 a.m. to decide which delivery zones (see p. 24) and what volume should be given to BCSs for processing. The center's management wanted BCS processing to be completed by 4:30 a.m., although processing may continue beyond that hour. The center wanted a margin of time to reprocess any BCS-rejected letters in the manual-mechanical system and still make the last dispatch at 6:00 a.m. Thus, the parameters of the center's operating window together with the number of available BCSs could affect the number of ZIP + 4 letters receiving automated carrier-route processing.

The centers we reviewed, like many others, are scheduled to receive additional Phase II BCSs. The additional machines, which the Service reports can process more letters per hour than the Phase I BCSs, should allow the centers to process more mail within the same operating windows. However, if the volume of First-Class Mail increases more than the Service anticipated when it bought the Phase II BCS, problems with the operating windows could continue.

Too Few Letters Going to a Delivery Zone

The Service accumulates mail by delivery zone before sorting to carrier route, and follows this procedure regardless of whether the sorting will be performed manually, mechanically, or automatically. A delivery zone is a small geographic area represented by the 5 digits of a ZIP Code and each zone contains a number of carrier routes. BCSS must be programmed to sort mail to carrier routes. Instructions for one or several zones are put onto a computer diskette. Mail is processed by individual zone or for several zones together, and the appropriate diskette must be put into the BCS for whatever zone (or zones) is being processed. Also, all mail from the previous zone must be removed (or "swept") from the BCS' pockets. The instructions program a BCS to put mail for a specific carrier route into a specific pocket.

The Service's national mail processing department issued guidelines in August 1985 calling for automated carrier-route sorting when at least 750 ZIP + 4 letters are available for a sort program (a diskette with sorting instructions for one or more delivery zones) and when at least 20,000 letters are available for all of the sort programs that would be used that day. The mail processing department believed that, at these threshold levels, sorting to carrier routes became more economical to do by automation than by letter-sorting machines.

Too few letters for a zone was a reason we heard for the gap between available and fed. At the Los Angeles center, for example, we were told that two full trays must generally be available before BCS processing occurs. (Using the Service measure of 446 letters per tray, two trays would contain nearly 900 letters.) During the 2 weeks the Los Angeles center counted mail for us, an estimated 198,000 letters were removed from the BCS staging area and sent to the manual-mechanical system for processing. Most of the letters were removed because, on a trays-per-zone basis, they filled less than four trays and usually less than two trays.

We do not know how many letters the other three centers did not BCS-process for the same reason. Two of the three centers gave it as a reason for the gap and we were told at the third center that while no formal guideline had been issued, some mail processing supervisors had been trained to BCS-process mail for a zone when two or more trays were available.

We agree that some minimum number of letters for a zone should be available before automated carrier-route sorting occurs, but we do not know what the minimum number should be.

Letters Were Sorted With Multiline OCRs

Of the four centers we reviewed, only Philadelphia had multiline OCRs. It was one of only three centers nationwide that had multiline OCRs in use at the time of our review. The Service bought a small number of prototype multiline OCR systems in 1980, and Philadelphia received one. Each system is configured to operate as two machines.

Multiline OCRs are much more sophisticated than single-line OCRs. After reading the complete address, the multiline OCR searches an internal directory for the matching address and the corresponding ZIP + 4 code. If found, the OCR sprays a bar code representing the ZIP + 4 code on the envelope. The multiline OCR does not require a ZIP Code on the letter if the address is in the directory.

The Philadelphia center regularly uses its multiline OCRs to process letters directly to carrier routes within the city of Philadelphia. It does this without passing them through BCSS for the carrier-route sort. Letters are separated by delivery zone before reaching the machine. Each zone contains a number of routes and the multiline OCR is told the sorting instructions for that zone. As letters pass through, the machine pays no attention to the city-state-ZIP code line for carrier-route sorting purposes, but uses its internal capabilities to read the rest of the address and sort the letter to the appropriate route.

The Philadelphia center found this procedure to be more economical than having multiline OCRs barcode letters and then passing the barcoded letters through BCSS. In other words, the procedure does away with the pass through a BCS. However, Philadelphia uses both procedures to process ZIP + 4 mail; its carrier-route sorts such mail on BCSS and on multiline OCRs. In table 3.1, we considered only discounted letters BCSS processed. Although discounted letters sorted by multiline OCRs did receive automated sorting, the machine did not use the ZIP + 4 code to make the sort.

New Procedures Not in Place

In December 1986, the Northern Virginia center put procedures into effect to identify and accumulate, from several locations on the workroom floor, all ZIP + 4 mail for automated processing. The procedures are similar to those we asked the center to follow when counting trays and feet of ZIP + 4 mail for us in November 1986.

When we began our review at the center in August 1986, it was using automated equipment to process essentially courtesy reply mail to certain post office boxes; it was not using the equipment to routinely process ZIP + 4 letters to carrier routes. Although uncertain just how much ZIP + 4 volume there was, center officials perceived the volume too small to automate carrier-route sorting on a regular basis. While the volume before November is unknown, we believe the November counts showed that enough ZIP + 4 letters were available to make automated carrier-route sorting practical.

With installation of the new procedures, the center believes that the only ZIP + 4 letters bypassing automation are doing so inadvertently. The procedures appear to be working. The center processed about 2 million ZIP + 4 letters on BCS carrier-route operations during the 28-day period from February 14 to March 13, 1987. In comparison, the center processed about 330,000 letters on BCS carrier-route operations during the 14-day period of the November count.

The Los Angeles center also derived benefit from the procedures it used to count ZIP + 4 mail for us. The center's previous measurings of ZIP + 4 volume led center officials to believe not enough mail was available to make routine BCS processing to carrier routes worthwhile. However, the previous efforts missed some sources of ZIP + 4 mail and when the center installed the procedures to count mail for us, which we initially developed with the San Diego post office, more mail was seen to be available.

During most of August 1986, before the procedures were implemented, the Los Angeles center processed about 193,000 ZIP + 4 letters on BCS carrier-route operations. During the 2 weeks in November when our count was taken, the center processed approximately 700,000 letters.

BCSs Unable to Successfully Sort All Letters

The Service assumed a 4-percent loss (i.e., a 96 percent gross accept rate) in BCS-processed letters in its January 1984 economic analysis. During the 2-week period of our count, BCSs at the four centers were unable to sort to carrier routes 12 to 25 percent of the letters they processed. The approximate percentages were 12, 20, 21, and 25 percent. The mail had already gone through one or more earlier steps in the processing sequence, including a pass through an OCR. Any mail BCSs cannot process ends up in the manual-mechanical system.

Because the percentages appeared so relatively large, we checked the sorted-to-fed ratio for another, longer period (Jan. 17, 1987, through Mar. 13, 1987). The results were better; none of the four centers entered the 20-percent area and the range was narrower. Even so, about 12 to 17 percent of the mail was not successfully carrier-route sorted, which means that it had to be rehandled. Servicewide, over the same period, about 8 percent of the mail going through BCSS was unable to be successfully carrier-route sorted.

We asked officials of the four centers what were the reasons for the 12 to 25 percent loss in carrier-route sorted letters. The reasons they suggested included:

- OCR failed to spray a bar code because it detected interference on the envelope, such as writing in the space where the bar code would be printed. (OCRs sort on what they read rather than what they print. So even though a bar code was not sprayed, the OCR sorted the letter, putting it with others going to BCSS.)
- OCR had trouble reading the address and sprayed the wrong bar code, which caused the letter to not match the sorting instructions for the delivery zone being processed.
- Bar code was sprayed improperly (for example, bars were curved) or the ink smudged.
- BCS, in reading the bar code, picked up interference from the envelope or the envelope's contents and read the interference as part of the bar code.
- BCS may have experienced mechanical problems, such as being "out of tune."
- Sort program may have been out of date or misprogrammed causing the letter to be out of scheme. (Here, too, the sort scheme may be correct but the ZIP + 4 number used by the mailer inaccurate. The Inspection Service, the Postal Service's audit and investigatory organization, tested the accuracy of the ZIP + 4 codes used by 24 large-volume mailers in 29 ZIP + 4 mailings. For 22 mailings, inspectors verified the ZIP + 4 code on 10 percent of the mailing or 100 letters, whichever was greater, using random sampling. For seven mailings, inspectors examined a sample of 100 letters. The Inspection Service reported in May 1987 that 20 of the 29 mailings had error rates of 10 percent or more; most were in the 10 to 25 percent range.)

Letters Delivered by Associate Offices Usually Do Not Receive Automated Carrier-Route Sorting

Many post offices, called associate offices, sort the mail they deliver to carrier routes. These offices are generally not automated.

An associate office usually receives and dispatches all classes of mail from and to a larger mail processing center called a management sectional center. Three of the mail processing centers we reviewed were also management sectional centers: Northern Virginia, Philadelphia, and San Diego. Each sent mail to and received mail from over 50 associate offices. While all three centers funneled mail to associate offices, they generally did not carrier-route sort the mail; the associate offices did that.

These associate offices seemingly receive a sizeable amount of ZIP + 4 mail, at least on a collective basis. In November 1986, when the centers were counting trays of ZIP + 4 mail for us, we asked them to identify and separately record trays going to their associate offices. During the 2 weeks in which the count was made, Philadelphia's associate offices received an estimated 532,000 letters; San Diego's associate offices, 549,000 letters; and 15 of Northern Virginia's associate offices, 129,000 letters.

For ZIP + 4 letters going to associate offices, the Service would benefit if as many as feasible received full automated processing. The San Diego center uses BCSS to carrier-route sort mail going to the six largest associate offices. The San Diego postmaster told us the center will look into processing even more associate office mail in light of the volume of letters in our count. According to an official of the Philadelphia center, it is developing plans to carrier-route process associate office mail, which should be implemented in postal fiscal year 1989 on the basis of projected increases in BCSS and staffing and availability of BCS sorting instructions. Mail going to the larger associate offices would likely be the first candidates for such sorting.

In commenting on a draft of this report (see app. IV), the Service agreed that ZIP + 4 mail going to associate offices would benefit from automated processing. The Service said many centers have already automated carrier-route sorting operations for some of their associate offices, and it intends to continue to automate such operations as much as is practical.

Efforts to Increase ZIP + 4 Volume

Use of BCSS to carrier-route sort mail is determined by volume to make it economically viable. The volume of ZIP + 4 letters the Service has received and expects to receive in the future is less than it once expected and, as a result, the Service decided to switch from single-line OCRS to multiline OCRS. These machines can put a ZIP + 4 code on a letter when the mailer does not. The Service has also proposed increases in the ZIP + 4 postage discounts.

Service Acquiring Multiline Technology

ZIP + 4 volume has grown much slower than the Service expected and, as a result, the Service has adjusted its expectations downward over the years. Until the summer of 1985, the Service said ZIP + 4 volume—discounted and nondiscounted letters—would approximate 50 billion letters in 1989, the first full year then of a fully operational automated system. In 1985, the projection was revised to 27 billion letters and then 26 billion letters. In early 1987, the projection was reduced to 21 billion letters. According to this latest projection, the Service does not think mailers will provide 50 billion ZIP + 4 letters until 1998.

Because expectations declined, the Service decided to switch from single-line OCRS to multiline OCRS. Single-line OCRS, which read the city-state-ZIP Code line of the address, can only print a ZIP + 4 bar code if an address contains the ZIP + 4 code. Unlike single-line OCRS, multiline OCRS read the full address, search an internal ZIP + 4 directory, and then print the related bar code on the envelope. Because of this capability, multiline OCRS can increase the volume of 9-digit barcoded letters available for automated carrier-route sorting even when mailers do not use ZIP + 4. However, the Service wants as many mailers who find it economically viable to use ZIP + 4 codes because the code in the address increases the chance of putting a 9-digit bar code on the envelope and therefore enhances the multiline's cost effectiveness.

The Service announced in February 1987 that the Phase II single-line OCRS would be converted to multiline technology or manufactured as multiline OCRS. The Service purchased 406 Phase II single-line OCRS from ElectroCom Automation, Incorporated. At an additional cost of about $150 million, ElectroCom is going to convert to multiline technology machines it delivers as single-line OCRS and manufacture about the last 100 machines as multiline OCRS. The changeover is scheduled to begin in February 1988, and all 406 machines are scheduled to be operating as multiline OCRS by late Spring 1989. The Service plans to replace some or all of the Phase I OCRS with multiline OCRS. Those that are not replaced

will be converted to multiline technology. The Service expects this replacement/conversion of the Phase I OCRs to be completed after 1989.

Other Actions to Increase Volume

The Service has proposed and is considering other actions to increase the volume of ZIP + 4 coded letters. In April 1987, the Postmaster General wrote to his top managers on the subject of automation and, in part, said the following:

- The letter mail automation program needs to include a mix of strategies that address the vastly different capabilities and economics of each segment of the broad spectrum of mailers who originate First-Class Mail.
- The Service must remain open to opportunities to modify its technology, where warranted, to better match the Service's internal system capabilities with customer needs and capabilities.

A copy of the Postmaster General's memorandum is presented in appendix III.

In the memorandum, the Postmaster General said proposals in the Service's "next rate case will recognize the value to our automated processing systems of various levels of customer mail preparation." In May 1987, the Service filed a request for a general rate increase with the Postal Rate Commission, the independent body established by Congress to permit public involvement in the ratemaking process.

The filing contained proposals to enlarge existing ZIP + 4 discounts and to add a new category of discount eligibility. (The ZIP + 4 projections reported above do not consider the effects of these proposals.) Table 4.1 shows the proposed discounts for letters together with the existing discounts.

Table 4.1: Value of Existing and Proposed ZIP + 4 Postage Discount for Letters[a]

Category	Existing discount	Proposed discount
Nonpresorted	0 9 cent	2.0 cents
3/5-digit presorted[b]	0.5 cent	0.8 cent
Pre-barcoded 5-digit presort	none	1.3 cent

[a]Discount values for cards are the same as shown for letters except for "proposed nonpresorted," which is 1 5 cent rather than 2 cents

[b]See page 12 for an explanation of presorted letters

The pre-barcoded category is new and offers a discount for mail pre-barcoded with a 9-digit barcode and presorted to 5-digit ZIP Code destinations. Such mail would bypass OCR operations and go directly to BCSS for sorting to carrier routes. Pre-barcoding allows the mailer to avoid changing the appearance of the letter which might otherwise be necessary to meet OCR readability requirements.

The proposals must go through the ratemaking process; this normally takes 10 months. The Postal Rate Commission will then provide its recommendations to the Postal Service Governors for approval and enactment.

Overall Conclusions, Recommendation, and Agency Comments

We said in January 1983, in the first of several reports on the ZIP + 4 program,[1] that the cost effectiveness of the ZIP + 4 program hinged heavily on voluntary participation by business mailers and such participation was uncertain. The expected participation has not materialized, and this has caused the Service to abandon the original design of the automated system—use single-line OCRs to bar code ZIP + 4 letters.

The Service has decided to replace the single-line OCRs with multiline OCRs in order to put more ZIP + 4 letters in the automated processing system. Although the Service will be installing multiline OCRs, it still wants mailers to use ZIP + 4 codes and has requested increases in the ZIP + 4 discounts and in the ways mailers can earn discounts. With this request, the Service expects to increase the number of ZIP + 4 letters it receives to process. If the multiline OCR system works as well as the Service wants and if future discount rates are an effective incentive, much more mail and many more delivery zones should be available to automate to carrier routes. That growth should bring a related and significant increase in the percentage of ZIP + 4 letters fully automated to carrier routes.

We believe the Service can automate a larger percentage of the ZIP + 4 mail it now receives even without multiline OCRs and increased incentives. Overall ZIP + 4 volume is small; it represented less than 5 percent of all First-Class Mail during our 18-month tracking period. However, our work showed that the volume of ZIP + 4 letters available at each of the four centers visited was far larger than the volume receiving automated sorting to carrier routes.

To obtain a realistic picture of the volume that may be available for automation, ZIP + 4 mail must be counted at all sources of entry into a center. After this is accomplished, a center will know better how much mail is available for automated sorting to carrier routes and which delivery zones should be sorted. The Los Angeles and Northern Virginia centers learned, from counting trays of ZIP + 4 mail at our request, that a far larger quantity of ZIP + 4 mail was available for automation than they had previously perceived. To identify and capture all ZIP + 4 mail,

[1] Conversion To Automated Mail Processing Should Continue; Nine-Digit ZIP Code Should Be Adopted If Conditions Are Met (GAO/GGD-83-24, Jan. 6, 1983). The subsequent reports were Conversion To Automated Mail Processing And Nine-Digit ZIP Code—A Status Report (GAO/GGD-83-84, Sept. 28, 1983), Comparative Review Of Single-Line And Multiline Optical Character Readers Used In Mail Processing (GAO/GGD-84-78, Aug. 7, 1984), and Information on the Change to Multiline Readers for the ZIP + 4 Program (GAO/GGD-86-62BR, Mar. 28, 1986).

the centers established control points at several key places on the workroom floor. Taking into consideration the volume disclosed by the counts, the two centers changed their procedures for capturing ZIP + 4 mail and substantially increased the volume of automated letters.

The volume of discounted ZIP + 4 letters not receiving automated processing to carrier routes and the situation found at the four centers visited indicates that the volume of ZIP + 4 mail fully automated to carrier routes can be substantially increased by many other automated centers. The Assistant Postmaster General for Mail Processing agrees that the mail processing procedures followed by the four centers we reviewed are basically like mail processing procedures at most other automated centers.

To reap the full benefits of automation, the Service must do more to keep mail in the automated system after it enters the system. At the four centers we reviewed, 12 to 17 percent of the letters that reached BCSs were not sorted to carrier routes during the period from mid-January to mid-March 1987. This range does not take into account letters that OCRs were unable to sort. The Service has taken an important step to improve the retention rate of letters in the automated system by creating the occupational position of automation readability specialist.

Recommendation

To increase the volume of ZIP + 4 mail receiving automated processing to carrier routes, we recommend that the Postmaster General direct Division Managers/Postmasters to periodically count the amount of ZIP + 4 mail automated facilities are receiving at all entry points in order to determine the maximum amount available by delivery zone that can be automated.

Agency Comments

In commenting on a draft of this report (see app. IV), the Postmaster General said our estimates of the amount of ZIP + 4 mail being processed automatically were made during a time of continuing change, but the Service agrees that the percentage of ZIP + 4 mail being processed automatically is steadily rising.

Regarding our recommendation, the Postmaster General said the Service agrees that the lack of awareness among some field operations managers of the volumes of ZIP + 4 mail currently available has impeded the

increase in automation of carrier-route sorting. He said recent instructions to the "field" have highlighted the need to measure the volumes of such mail going to local and associate office delivery zones.

The Postmaster General also listed several other improvements the Service is making to further increase the percentage of ZIP + 4 mail receiving automated carrier-route sorting. These include the training of more automation readability specialists, lowering reject rates on BCSS, and evaluating the accuracy of ZIP + 4 codes being assigned to mailers' address lists.

Current Mail Processing System

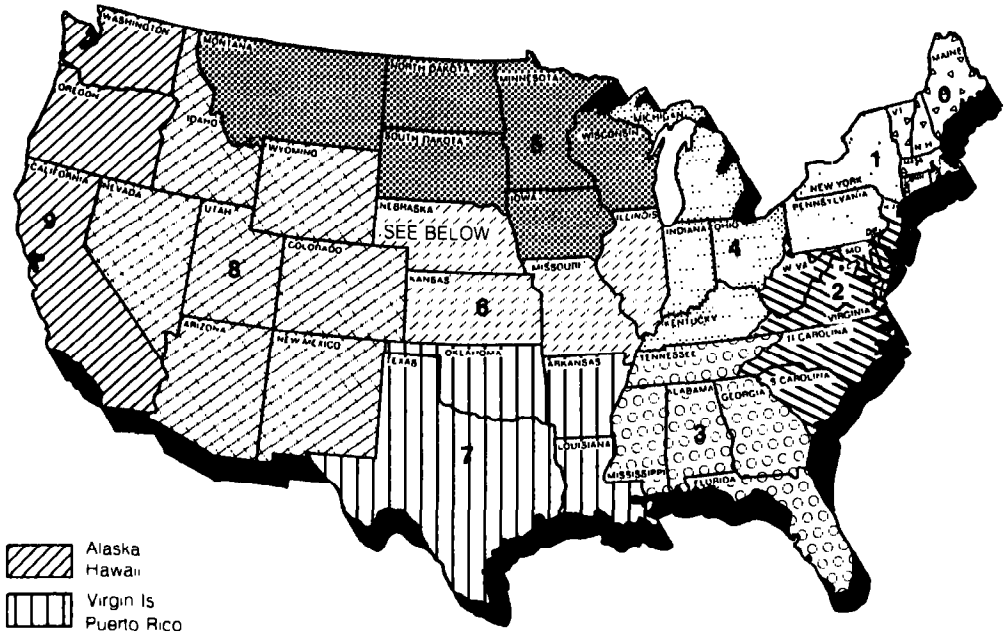
Each day the Postal Service receives tens of millions of First-Class letters and postcards (letter mail) for delivery. To get each letter to its destination, the Service moves it through a series of sorting or processing steps, from the post office which first received it to the letter carrier who will deliver it. Processing operations are performed by hand, on hand-keyed machines, and on automated equipment.

The manual-mechanical system requires an individual to visually observe the ZIP Code or address on a letter at each processing step. Mail processed fully within the automated system is not read by a postal employee until it reaches a letter carrier. Mail that bypasses or is rejected by the automated system goes to the manual-mechanical system for processing. The present automated system requires a ZIP + 4 code—a 9-digit ZIP Code—on each letter to process it to a letter carrier.

The ZIP Code Distribution System

The 5-digit ZIP Code, which was implemented in 1963, identifies specific geographical areas as illustrated in figure I.1.

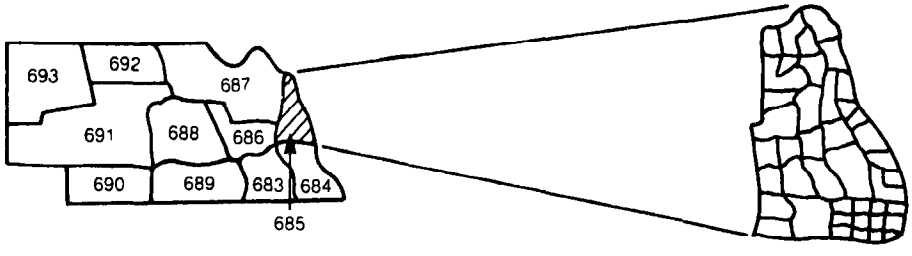
Figure I.1: ZIP Code National Area



The first digit of a ZIP Code divides the country into 10 large groups of States numbered from 0 in the Northeast to 9 in the Far West

Sectional Center Facilities or Large Post Offices

Smaller Post Offices or Geographical Areas Within Post Offices



Each State is divided into an average of 10 smaller geographical areas, identified by the 2nd and 3rd digits of the ZIP Code The two digits can represent a large city a post office or a geographical area.

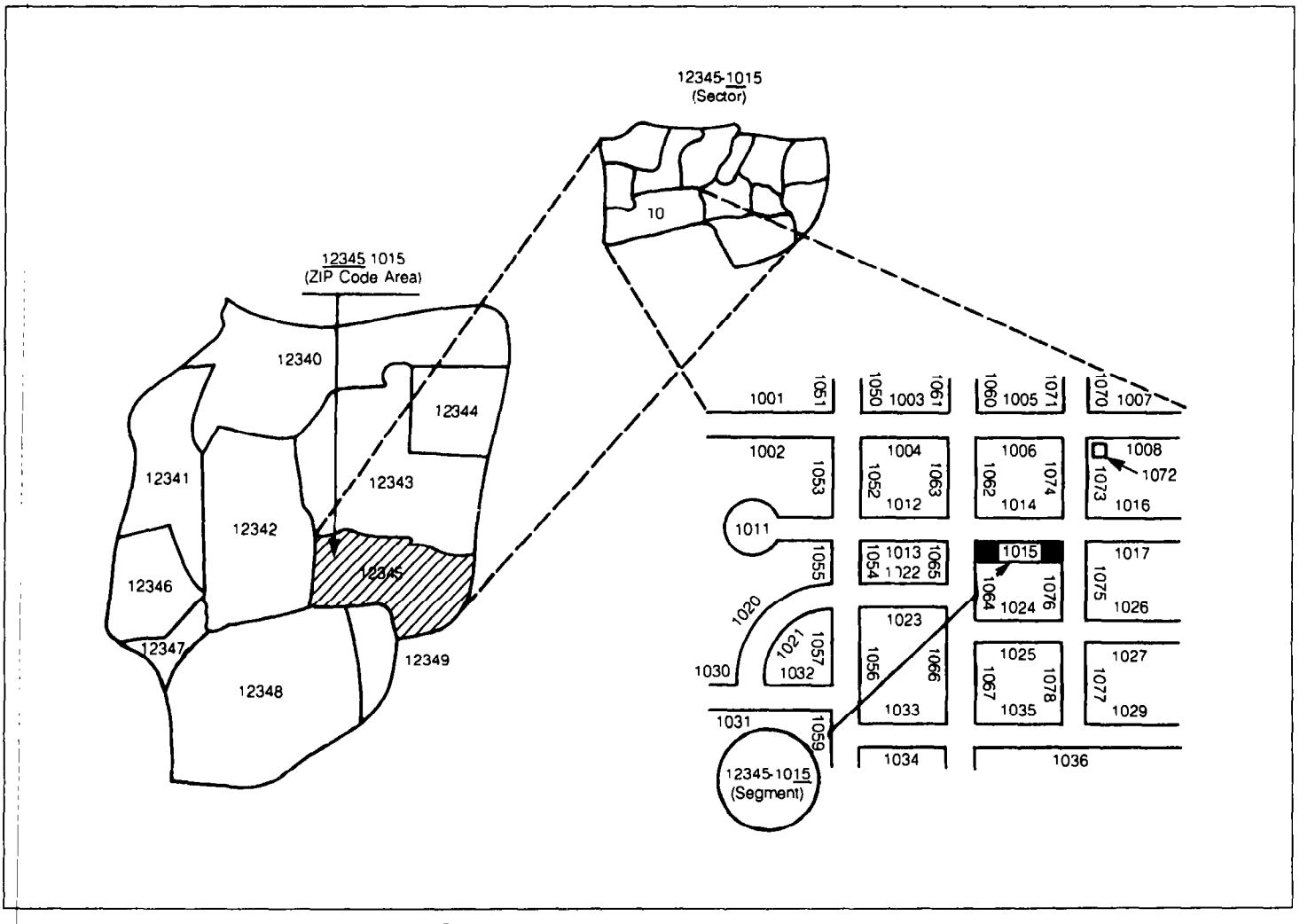
The 4th and 5th digits identify a delivery area or location It can represent a small town, a post office within the corporate limits of a large city, or a geographical area.

Source Adapted from Postal Service illustration

The 9-Digit Code

The first 5 digits of the ZIP + 4 code is the present 5-digit ZIP Code and continues to designate areas served by a post office. The first 2 digits of the add-on code (digits 6 and 7) designate a small geographical area called a sector. The last 2 digits (digits 8 and 9) designate a segment within a sector. A hyphen is used to separate the 5-digit code from the add-on numbers. The diagrams in figure I.2 illustrate how sector and segment numbers are assigned.

Figure I.2: Assignment of ZIP + 4 Digits for ZIP Code 12345-1015



Source: Adapted from Postal Service illustration

Sectors

Sector boundaries do not cross state or county lines, and the numbers are generally assigned as follows:

00-09 to postal boxes and box sections.

10-97 to streets, firms, and rural routes.

98-99 to business reply and special codes.

Sectors in commercial areas are much smaller than they are in residential areas and can be completely contained within a single building or within a single city block.

Segments

A segment—the last 2 digits of the add-on-code—can be one side of a street between intersections; both sides of a street, including cul-de-sacs; a company or building; a floor or sections of post office boxes; or any other designated delivery point.

How Letter Mail Is Processed

A letter may be handled at several postal facilities before delivery occurs. These facilities can be referred to as "originating" offices, "transit" offices, and "destinating" offices. The originating office is the office where the mail receives its first handling, or is accepted. A transit office (for example, an area distribution center) is an office which performs an intermediate handling before the mail reaches the destinating office. The destinating office is the office where the mail receives its final handling before delivery. These offices each perform one or more steps of the processing sequence.

At the originating office, a primary operation is performed sorting the mail into individual and groups of 3-digit and 5-digit ZIP Code areas. The 3-digit groups contain those letters going outside the originating office's immediate area, and the 5-digit groups are usually near and including the originating post office. Historic trends in mail density—number of letters going to a given area—influence which ZIP Code areas are grouped together and which are broken out separately.

Mail going outside the originating office's immediate area (e.g., 3-digit areas) is generally dispatched to a transit facility such as an area distribution center, which receives mail from across the nation for distribution to a specific geographic area. (The Philadelphia Post Office, for example, is the area distribution center for eastern Pennsylvania, which

covers the 3-digit ZIP Code prefixes 179 to 196.) Distribution centers separate mail into individual 3-digit ZIP Code areas and, for mail for the immediate vicinity (for example, the city of Philadelphia and surrounding suburbs), into 5-digit areas.

At the destinating office, mail is sorted into 5-digit ZIP Code areas or zones if the separation has not already been made. It is then sorted by an "incoming secondary" operation into letter carriers, post office boxes, and firms. Mail given to letter carriers for delivery is in random order, and it must be put into delivery sequence. (The Service eventually wants to use the ZIP + 4 code to help sort the mail for the carrier.)

For a given letter, the originating office can also be the destinating office if the address on the letter is in the originating office's delivery area. The letter still must be sorted to 5 digits and then to the appropriate carrier route.

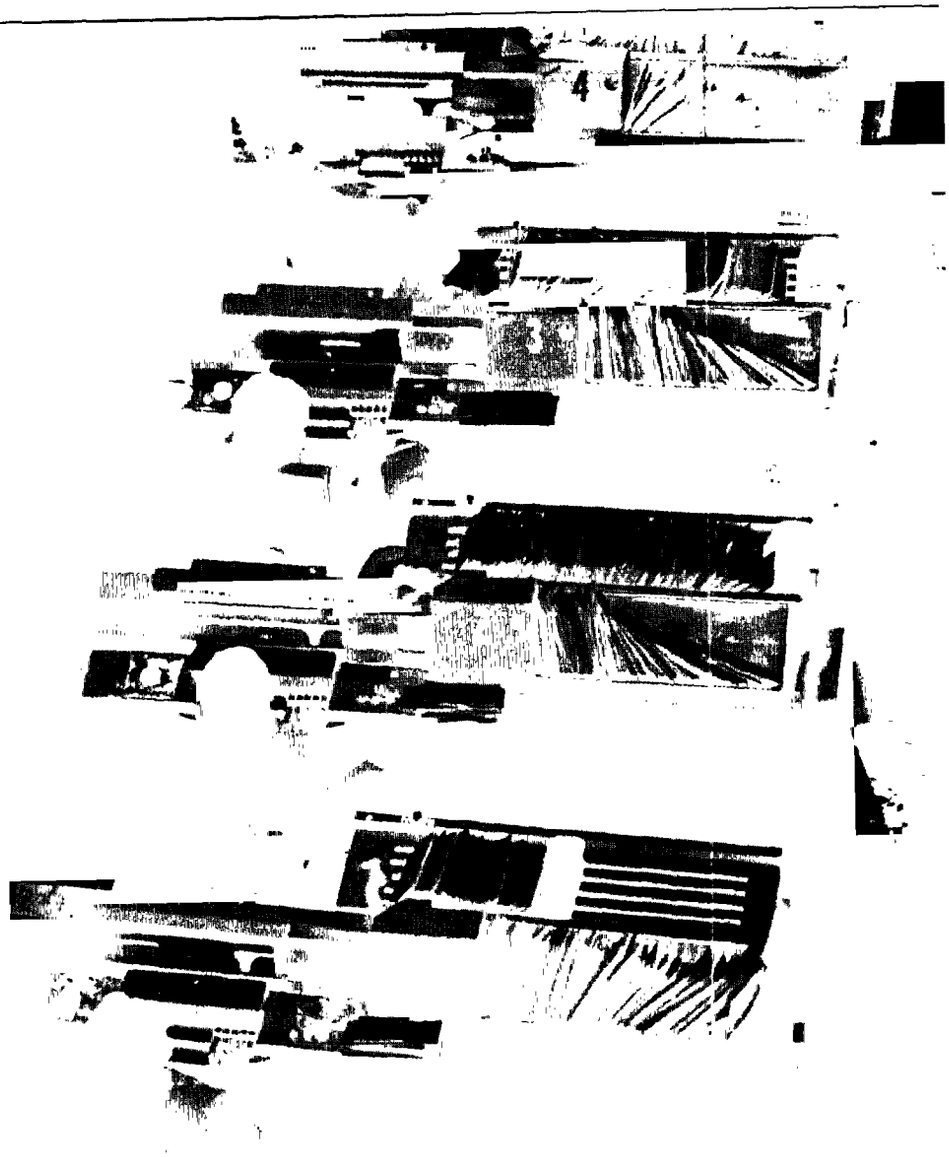
Presort mailings require less processing than that described above. For example, mail presorted to 5-digit ZIP Codes by the mailer bypasses primary and often transit distribution that non-presorted mail receives. At its destination, however, 5-digit presorted mail receives the same incoming secondary distribution that nonpresorted mail receives. Mail presorted to carrier routes also bypasses the incoming secondary distribution.

The processing steps are generally the same regardless of whether the sorting is performed by hand, on hand-keyed machines, or with automated equipment.

Manual-Mechanical System

Manually operated letter-sorting machines are used to sort mail in the manual-mechanical system. These machines generally have 12 input operator consoles, and the operators key letters into 277 bins. (Such machines are called multiposition letter sorting machines or MPLSMs. See photo. on p. 41.) Using a portion or all of the ZIP Code, an operator can direct a letter to the transit office or to the destinating office.

Figure I.3: MPLSM Sorting Operation



Source. Postal Service illustration

However, at the destinating office, MPLSM operators must rely on "scheme" knowledge to sort letters into those going to letter carriers, post office boxes, and firms. An operator must read the street address and number, recall the carrier-route number associated with the specific

address (scheme knowledge), and key into the MPLSM a code representing the carrier-route number. MPLSM operators must continually relearn portions of carrier-route schemes because of changes resulting from the addition of new delivery points and/or other changes and adjustments to a route.

To illustrate the complexity of carrier-route schemes, a small portion of the Palatine, Illinois, carrier-route scheme for ZIP Code 60067 is shown on page 43. This scheme has a total of about 700 items (71 shown), which the operator must memorize. Many schemes require operators to memorize as many as 1,000 items.

Mail in the manual-mechanical system is also handsorted to manual letter cases. (See photo. on p. 44.) Handsorting occurs, for example, when letters are too wide or too thick to pass through an MPLSM, when the MPLSMs are backed up, and when an office is without an MPLSM. Like MPLSM operators, employees who handsort while working incoming secondary operations do so using scheme knowledge.

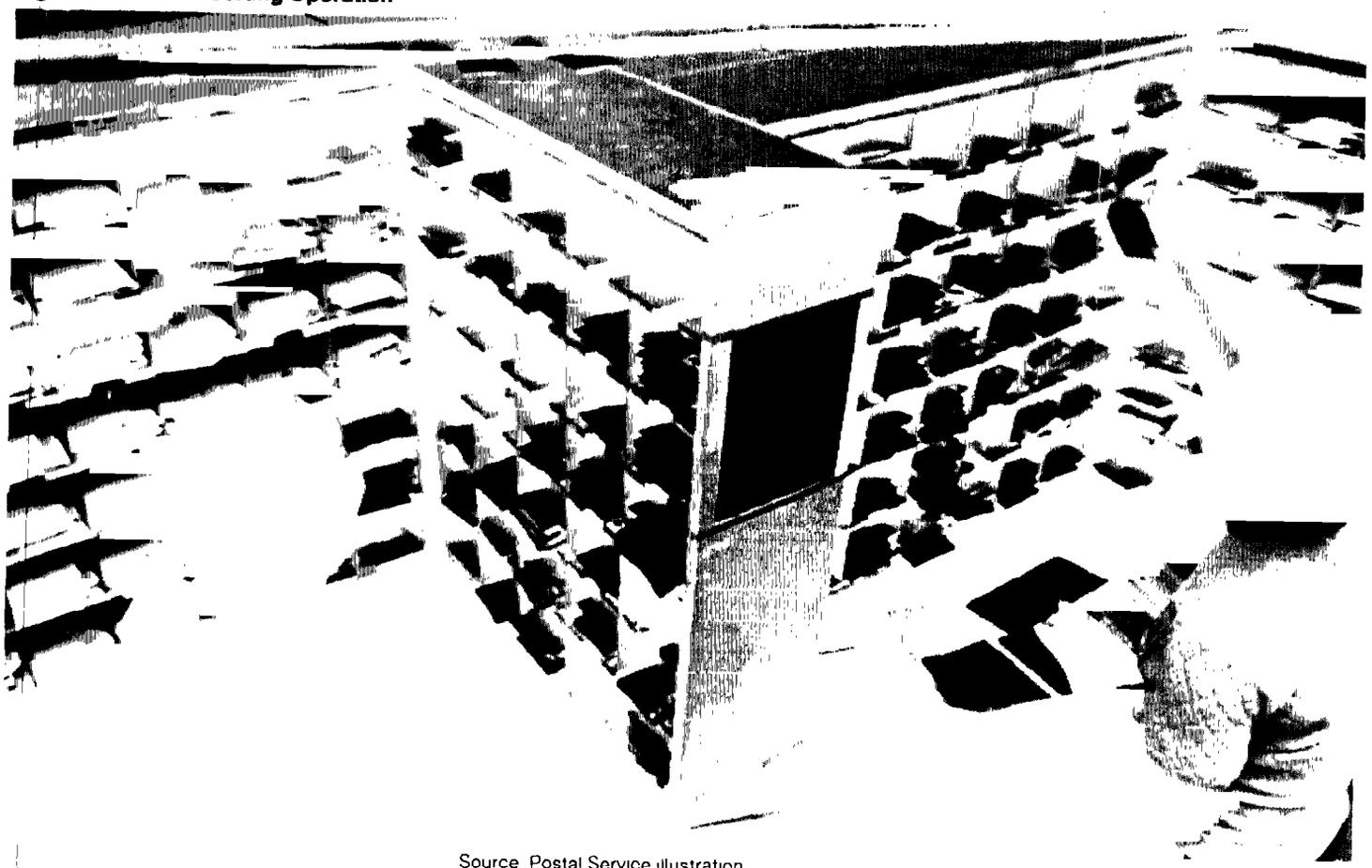
Figure I.4: Portion of a Carrier-Route Scheme

Street	Route
A	
Aberdeen Rd.	6
Aberdour Ln	49
Aldridge Ave	50
Algonquin Rd.	55
Alison	34
Alva St	33
Amherst	40
Anderson Dr 1000-1299	28
Anderson Dr 1300-1499	14
Anderson Dr 1500-1599	14
Apple Tree Ln	36
Appleby Rd.	15
Ardmore St	15
Arlene Ave	34
Arlingdale	11
Arrowhead Dr	24
Ash St	10
Ashbury Ct & Ln	55
Ashland Ave. N 1-399	2
Ashland Ave N 1200-1399	40
Ashland Ave S.	1
Austin Ln	20
Ayreshire Ln.	53
B	
Babcock Dr	16
Baldwin Ct 1300's	12
Baldwin Rd. E. 400-799	54
Baldwin Rd. E. 800-999	16
Baldwin Rd. N 1100's Odd	19
Baldwin Rd. N 1200's Even	46
Baldwin Rd. W 1-1399	33
Baldwin Rd W. 1400-2199	6
Balmoral Ln	45
Balsam Ln	54
Banbury Rd	6

Street	Route
B	
Bannockburn	55
Barra Ln.	49
Baybrook	34
Bayer Dr.	9
Bayside Dr	41
Beaver Pond Dr	15
Bedford Dr.	22
Bel Aire Ter.	29
Belle Ave.	34
Bennett St	5
Benton St N. 1-119	18
Benton St N 120-599	4
Benton St N. 600-799	22
Benton St S 1-599	3
Benton St. S 600-999	52
Benton St. S. 1000-1699	23
Berwick	55
Birchwood Ave	56
Bishop	32
Bissell Dr	16
Blackburn Dr	6
Blair Ln.	49
Bon Aire Ter	29
Bonnie Ln.	6
Borders Dr.	32
Borthwick	49
Bothwell St. N 1-54	13
Bothwell St. N 55-329	8
Bothwell St. S.	26
Boynton	16
Bradwell Rd.	53
Braeburn Rd	6
Brandon Ct	56
Briarwood Ln.	7
Bristol	20
Brighton Ct & Ln	20
Broadmoor Ct	56

Source Adapted from a Postal Service carrier-route scheme

Figure I.5: Manual Sorting Operation

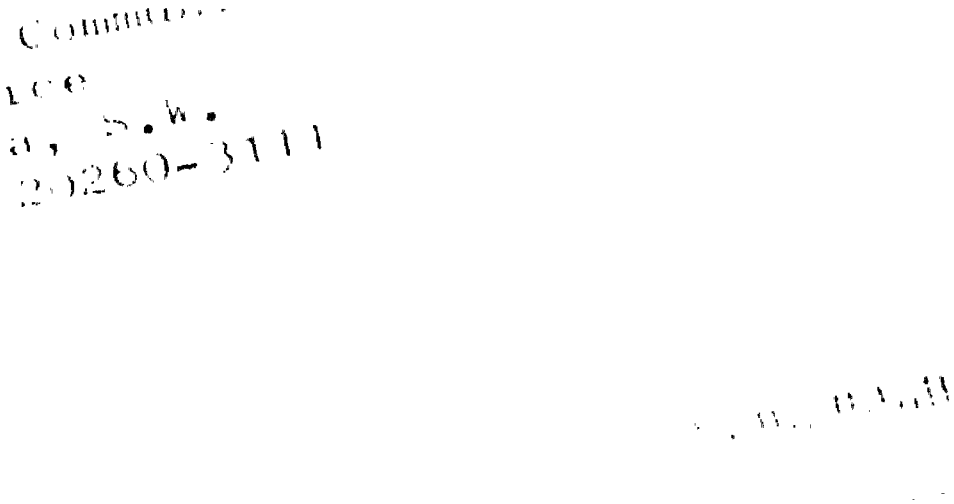


Source Postal Service illustration

Automated Systems

Single-line optical character readers (OCRs) and bar code sorters (BCSs) sort mail in the automated system. (See fig. I.7, p. 46, and fig. I.8, p. 47.) OCRs read the ZIP Code or the ZIP + 4 code and print on the lower edge of the letter a bar code representing the 5- or 9-digit ZIP Code (see fig. I.6).

Figure I.6: Barcoded ZIP + 4 Letter



Source: Postal Service illustration

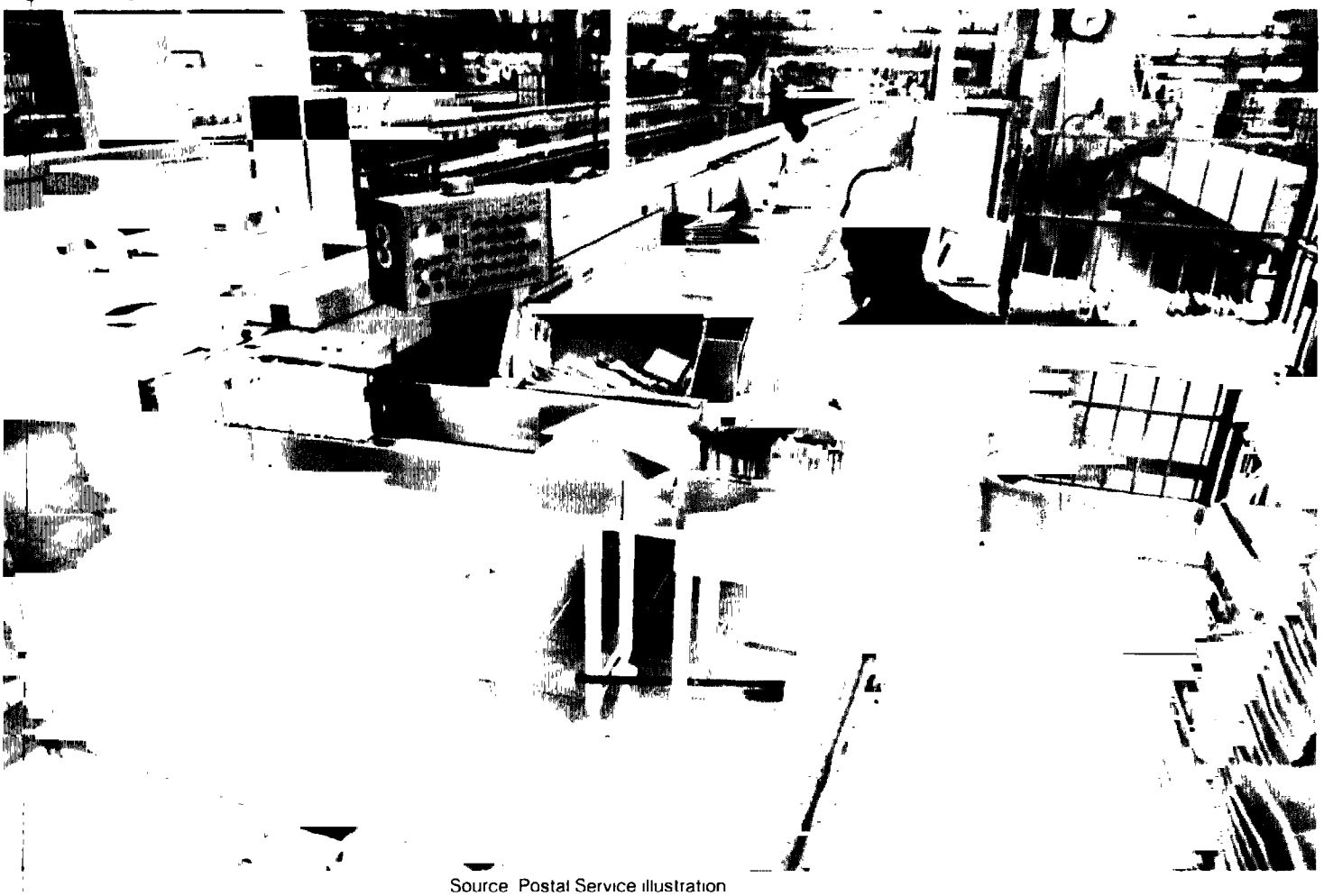
BCSS read the barcodes for subsequent sorting, including sorting to carrier routes if the mail was addressed with ZIP + 4 codes. The single-line OCRS can only print a 9-digit bar code if the mailer addressed the letter with a ZIP + 4 code.

OCRS sort mail as well as print bar codes. The Service's OCRS have 32, 44, and 60 pockets for separating mail. Primary sorting is performed with OCRS, but more detailed sorting, such as incoming secondary operations, is usually performed on BCSS, which have 96 pockets. OCRS and BCSS must be programmed to send a letter to a particular pocket. Each set of ZIP + 4 sector-segment numbers must be assigned to the appropriate carrier route, post office box, or firm. Like the schemes used in the manual-mechanical system, OCR and BCS sorting instructions must be up-to-date and accurate.

Mail rejected from the automated system goes to the manual-mechanical system. Also, mail addressed with 5-digit ZIP Codes can be sorted to destinating offices in the automated system but the subsequent sort to carrier routes must be made manually or on MPLSMS. Presorted ZIP + 4

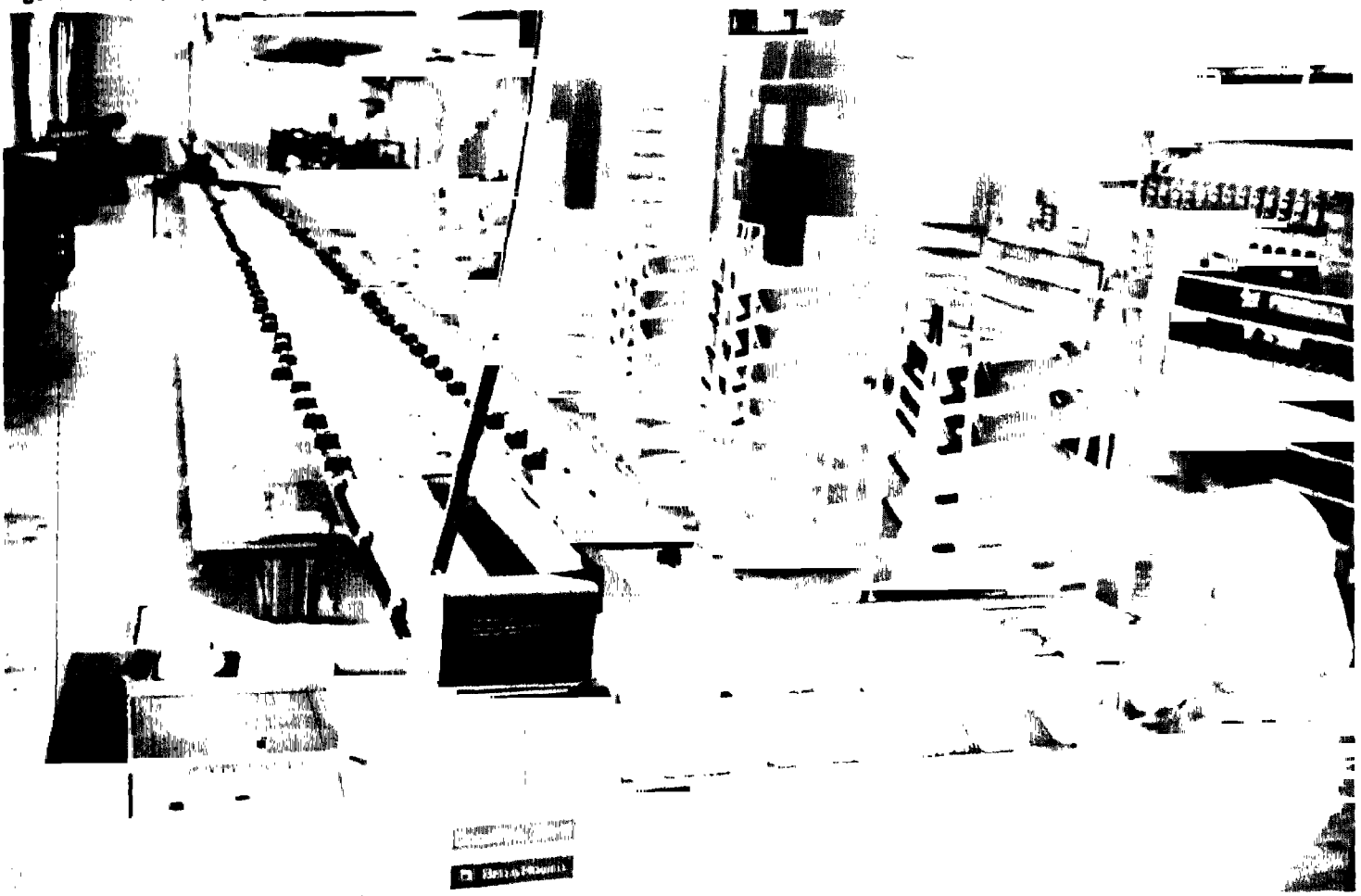
mail—presorted to 3 and 5 digits—must be OCR processed at the transit or destinating office to obtain a bar code for sorting to the carrier route.

Figure I.7: Optical Character Reader



Source Postal Service illustration

Figure I.8: Bar Code Sorter



Source Postal Service illustration

Request Letter

GLENN ENGLISH OKLAHOMA CHAIRMAN
GERALD D. KLECZKA WISCONSIN
STEPHEN L. NEAL NORTH CAROLINA
ROBERT E. WISE JR. WEST VIRGINIA
EDOLPHUS TOWNS NEW YORK
JOHN M. SPRATT JR. SOUTH CAROLINA

THOMAS N. KINDNESS OHIO
JIM LIGHTFOOT IOWA
JOSEPH J. DIGUARDI NEW YORK
JOHN R. MILLER WASHINGTON

(202) 225-3741

NINETY NINTH CONGRESS

Congress of the United States
House of Representatives

GOVERNMENT INFORMATION, JUSTICE, AND AGRICULTURE
SUBCOMMITTEE
OF THE
COMMITTEE ON GOVERNMENT OPERATIONS
B-349-C RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515

March 4, 1986

The Honorable Charles A. Bowsher
Comptroller General
General Accounting Office
441 G Street
Washington, D. C. 20548

Dear Mr. Bowsher:

This is to request that the General Accounting Office determine whether mailers are complying with mandatory mail preparation requirements which qualify them for ZIP+4 discounts and whether the Postal Service is acting in a manner so as to ensure that anticipated ZIP+4 savings are realized.

In the past, the General Accounting Office has reviewed both the Postal Service's revenue protection program as it relates to bulk mailings and various aspects of the ZIP+4 program. To my knowledge, however, there has been no examination of the extent to which the Psotal Service is protecting its revenue in connection with ZIP+4 mailings. As you know, savings associated with the ZIP+4 program accrue, not as a result of the longer ZIP Codes themselves, but rather from the processing of ZIP+4 mail through the new automated mail sorting equipment. It has recently come to my attention that ZIP+4 coded mail originating and destinating at highly automated post offices is not being processed through the new machines. Nevertheless, the mail is metered at the lower ZIP+-4 rates.

I request that your auditors address these questions:

- How much ZIP+4 encoded mail is being rejected by the automated equipment; and, why?

- How much ZIP+4 encoded mail is bypassing the automated equipment and for what reasons?

The Honorable Charles A. Bowsher
March 4, 1986

- How much revenue does the Postal Service lose in the way of ZIP+4 discounts on such mail?

- What steps should the Postal Service take to ensure the fullest use of new automated equipment and to limit discounts on non-qualifying mail?

Any questions your auditors may have concerning our interest in this matter should be directed to Ed Gleiman of my subcommittee staff at 225-3741.

Sincerely,

Glenn English
Chairman

Memorandum to Postal Executives From Postmaster General

THE POSTMASTER GENERAL
Washington DC 20260-0010

April 3, 1987

MEMORANDUM FOR ALL PCES EXECUTIVES

SUBJECT: Postal Automation

Shortly after becoming Postmaster General, one of the issues I identified for my personal involvement and attention was postal automation. I have had an opportunity to review the automation program in some depth and on Monday, April 6, I will be addressing our customers at National Postal Forum South on our automation policy. I would like to share with you the essence of those remarks.

It became apparent to me rather early on that there existed considerable uncertainty about automation--not just among customers but among our own managers as well. Our intense focus on the ZIP + 4 code, at times, may have caused us to forget that ZIP + 4 codes are not an end in and of themselves, but a means to automating the sorting of mail. There were assumptions made that multiline optical character readers made customer applied ZIP + 4 unnecessary. Customers have perceived conflicting strategies when they see ZIP + 4 coding on one hand and presort programs on the other.

Until very recently, our plans to automate the sorting of mail relied exclusively on one factor--customer use of the ZIP + 4 code--without a corresponding understanding of the implications for many of our customers. Our automation program objectives tended to focus too heavily on internal postal operating economies and not enough on customer economics. It is clear as we move forward that we need to balance the scales.

Thus, I have concluded that the goal of postal automation should be to reduce the combined Postal Service and customer cost of mail preparation and handling. The challenge in reaching this goal is to seek ways to lower total aggregate cost of customer preparation and postal operations, keeping in mind our responsibility to serve all groups of customers. An effective, integrated automation program is a critical element in achieving our service commitment to customers and long-term financial stability for the Postal Service.

-2-

One of our most advanced programs is the automation of letter mail processing. Early deployment and effective use of advanced equipment is very important, which is why we recently decided to upgrade existing Phase II OCRs with multiline capability. But, that is not the whole story. Postal Service automation programs affect equipment deployment, new service offerings, customer programs, rate proposals, operating systems and new technology development. Successful effort will require the pursuit of a variety of strategies, all of which share a common foundation--the ZIP + 4 code. Ultimately, we can envision having a ZIP + 4 bar code placed on every piece of mail we handle.

Internal strategies to achieve this include multiline OCRs, some form of mechanized encoding of non-OCR readable mail and flats automation. External strategies include customer participation in ZIP + 4 coding, ZIP + 4 bar coding and presort.

The role that customers play in our automation plans will be given special attention. The degree to which our automation programs succeed is linked directly to the characteristics of the mail, which are essentially determined by customers and include such things as OCR readability and address quality. Customer-applied ZIP + 4 coding will continue to be of value into the future. We want to encourage its use and the Postal Service intends to provide appropriate incentives. Presort will continue to be of value as an alternative to adding new plant and equipment capacity.

Currently letter mail automation primarily involves First-Class Mail, which originates from a broad spectrum of the population, ranging from individual households and small businesses to the largest corporations. Our letter mail automation program, therefore, needs to include a mix of strategies that address the vastly different capabilities and economics of each segment of mailers. A sizeable portion of letter mail volume comes from large volume customers to whom mail and its costs are a major factor in their business. For those customers whose capabilities and economics permit, it is appropriate to include an array of customer mail preparation programs to complement our internal programs. Thus, proposals in the next rate case will recognize the value to our automated processing systems of various levels of customer mail preparation. Over time, we hope to expand the set of options available to these customers. For many customers, including individuals for whom mail is not a major factor or priority in their business, a strategy which requires little or no customer preparation is appropriate. In those cases, automation will rely on programs such as multiline OCRs and mechanized encoding of ZIP + 4 codes by the Postal Service.

-3-

We also must remain open to opportunities to modify our technology, where warranted, to better match our internal system capabilities with customer needs and capabilities. Customer-applied bar coding and possible equipment changes, which would permit relaxation of readability requirements for certain types of mail, are examples of such opportunities.

While letter mail automation programs primarily affect First-Class Mail, the automation of flats processing primarily will affect second-and third-class mail. Automation for flats is in the earliest stages of development. As such, the longer-term nature of our flats automation program will permit us to involve customers actively in developing flats automation strategies. In the near future, we will announce the creation of a joint USPS/industry advisory group on flats automation so that we can benefit from our customers' knowledge early in the game rather than late.

As you can readily see, our success in achieving postal automation will depend on our ability to effectively manage internal equipment and operations strategies and external customer strategies concurrently. The high degree of interdependence among these strategies dictates that decisions be made with both the internal and external impacts in mind. It is essential that all of us, as individual managers and as organizational elements, act to assure coordinated and consistent implementation of our automation strategies. The Corporate Program Committee, made up of the Senior Assistant Postmasters General, the General Counsel and Chief Postal Inspector, will monitor our progress in achieving effective integration of our automation programs.

Preston R. Tisch

Comments of the Postmaster General on a Draft of This Report

THE POSTMASTER GENERAL
Washington, DC 20260-0010

September 29, 1987

Dear Mr. Anderson:

This refers to your draft report entitled Processing of ZIP + 4 Letters Receiving Postage Discounts.

The report covers the period from late September 1985 to mid March 1987, with field work at four of our 130 automated facilities. As the report recognizes, the volume figures GAO developed on the amount of ZIP + 4 mail being processed automatically and the related dollar figures are estimates made at a time of continuing change, but we certainly agree that the percentage of ZIP + 4 mail being processed automatically is steadily rising. The increase has been especially true over the past six months as more optical character readers and bar code sorters are being deployed.

We agree that an impediment to increased automation of incoming secondary operations has been the lack of awareness on the part of some field operations managers of the volumes of ZIP + 4 mail currently in the mail stream. Accordingly, recent instructions to the field have highlighted the need to measure current volumes of ZIP + 4 mail for local city and associate office zones.

Other improvements we are making include programs to:

1. Train more automation readability specialists to check the readability of incoming mail.

2. Identify and correct poor quality addresses.

3. Improve scheme maintenance and reject rates on bar code sorters.

4. Evaluate the accuracy of ZIP + 4 Codes being assigned to address lists through vendor or in-house systems.

5. Test different sortation techniques and systems using multiline optical character readers and bar code sorters and develop appropriate guidelines for their use.

- 2 -

We are confident these steps will further increase the percentage of ZIP + 4 mail being processed automatically to carrier routes.

We also agree with your comment that ZIP + 4 mail going to associate offices would benefit from automated processing. Many offices have already automated incoming secondary operations for some of their associate offices. The Postal Service intends to continue to do this to the maximum practical extent as conditions allow.

Thank you for the opportunity to comment on your proposed report.

Sincerely,

Preston R. Tisch

Mr. William J. Anderson
Assistant Comptroller General
General Government Division
United States General Accounting
Office
Washington, D.C. 20548-0001

Glossary

Automated System	A system for processing letter mail which uses optical character readers and bar code sorters.
Bar Code Sorter (BCS)	A letter-sorting machine that optically reads the bar code printed on an envelope and sorts the letter into 1 of up to 96 attached bins, according to the ZIP Code or ZIP + 4 code that the bar code represents
Carrier-Route Sorting	Process by which letters, on the basis of the street address or ZIP + 4 code, are sorted to the delivery or carrier routes within a delivery zone. Letters may also be sorted by specific company and building.
Delivery Zone	Small geographic area represented by the 5 digits of a ZIP Code and the first 5 digits of a ZIP + 4 code. It identifies the post office or suboffice that will deliver a given letter.
Discounted Letters or Mail	First-Class, letter-size mail, including cards, mailed at less than full postage for being addressed with a ZIP + 4 code and meeting certain other qualifications. A ZIP + 4 letter can receive a postage discount of either 0.5 cent or 0.9 cent.
Manual-Mechanical Processing System	A system for processing letter mail in which Postal Service employees sort letters by reading ZIP Codes or by associating street addresses with delivery routes. After reading the ZIP Code or making the association, the employee puts the letter into the appropriate "pigeonhole" of a sorting cabinet or strikes the appropriate keys on a letter-sorting machine.
Multiline Optical Character Reader	A type of optical character reader that detects and reads the entire address on a letter, uses an internal directory to determine the appropriate ZIP + 4 code for the address, prints a bar code representing the ZIP + 4 code, and sorts the letter into one of a number of bins attached to the machine.
Optical Character Reader (OCR)	The generic name for equipment that optically detects and reads alphabetic and numeric characters, and bar codes. In this report, the term refers to equipment that reads all or part of the address on a letter.

Single-Line Optical Character Reader	A type of optical character reader that detects and reads the city-state-ZIP Code line of an address, prints a bar code representing the ZIP Code or ZIP + 4 Code if it is present, and sorts the letter into 1 of up to 60 bins attached to the machine.
ZIP + 4	A 9-digit ZIP Code which identifies a very small geographic area, such as a side of a street or a floor in a building, within a delivery zone. The code is used in conjunction with optical character readers and bar code sorters to sort letters automatically to carrier routes within delivery zones. ZIP + 4 refers to both the 9-digit ZIP Code and the automated mail processing system.

☆U.S. G.P.O. 1987-201-749:60159

Requests for copies of GAO publications should be sent to:

U.S. General Accounting Office
Post Office Box 6015
Gaithersburg, Maryland 20877

Telephone 202-275-6241

The first five copies of each publication are free. Additional copies are $2.00 each.

There is a 25% discount on orders for 100 or more copies mailed to a single address.

Orders must be prepaid by cash or by check or money order made out to the Superintendent of Documents.

United States
General Accounting Office
Washington, D.C. 20548

Official Business
Penalty for Private Use $300

Address Correction Requested

First-Class Mail
Postage & Fees Paid
GAO
Permit No. G100