

DOCKET SECTION

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POSTAL RATE COMMISSION
OFFICE OF THE SECRETARY

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, D.C. 20268-0001

POSTAL RATE AND FEE CHANGES, 1997

Docket No. R97-1

SUPPLEMENTAL TESTIMONY
OF
SHARON DANIEL
ON BEHALF OF
UNITED STATES POSTAL SERVICE

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LIST OF EXHIBITS

- Exhibit USPS-43A: Nonstandard Surcharge Costs as Presented in USPS LR-H-112**
- Exhibit USPS-43B: Development of First-Class Mail Processing Costs**
- Exhibit USPS-43C: Updated Nonstandard Surcharge Costs**

1
2
3

**Direct Testimony
of
Sharon Daniel**

4

AUTOBIOGRAPHICAL SKETCH

5 My name is Sharon Daniel. I have worked in the office of Product Cost Studies
6 at Postal Service Headquarters as an Economist and an Operations Research Analyst
7 since 1995. Prior to joining the Postal Service, I was a consultant with Price
8 Waterhouse and worked in the Center for Postal Consulting. While at Price
9 Waterhouse, I supported many of the Postal Service witnesses in Docket No. MC95-1.
10 After joining the Postal Service, I provided testimony in Docket No. MC96-2 on
11 Standard (A) Nonprofit letter mail processing costs. I am also presenting direct
12 testimony (USPS-T-29) in this docket on the mail processing cost of Standard (A)
13 letters and Standard (B) parcels.

14 I have spent considerable time observing mail processing in Processing and
15 Distribution Centers (P&DCs), Bulk Mail Centers (BMCs) and carrier stations. I have
16 also consulted extensively with postal headquarters and field operations and cost
17 personnel on various operational and cost matters. I earned a Bachelor of Science
18 Degree in Mathematics and a Master of Science Degree in Operations Research from
19 the College of William and Mary in 1991 and 1992, respectively.

1 **I. BACKGROUND/SUMMARY**

2 The purpose of this supplemental testimony is to present the updated analysis of
3 additional mail processing costs associated with nonstandard First-Class Mail pieces.
4 It relies heavily on the analysis presented in USPS LR-H-112 (as revised on August 18,
5 1997); however, it includes a discussion of the limited cost data for exclusively one
6 ounce pieces.

7
8 The additional cost of nonstandard pieces was first analyzed in Docket No. R78-
9 1 and the most recent update was described in Docket No. R90-1, USPS-LR-F-160.
10 My analysis improves upon that older version by using new data where available¹ and
11 expanding the analysis to include presorted pieces as well.

12
13 Nonstandard First-Class Mail is defined in the Domestic Mail Manual (DMM) -
14 Section C100 as any piece weighing one ounce or less and violating any of the
15 following size limits:

- 16
17 a. Length exceeds 11-1/2 inches, or
18 b. Height exceeds 6-1/8 inches, or
19 c. Thickness exceeds 1/4 of an inch, or
20 d. Aspect ratio (length divided by height) is less than 1.3 or more than 2.5

21
22 These limits define the criteria which make a mail piece nonmachinable on automated
23 letter sorting equipment.

24

¹ New data regarding the percent shares of nonstandard letters, flats, and parcels were provided by witness Fronk in response to NDMS/USPS-T32-29 (September 9, 1997). The analysis using these data is presented in Exhibit C.

1 **II. METHODOLOGY/ANALYSIS**

2 **A. Analysis Presented in USPS LR-H-112**

3 The same basic methodology and formula was followed here as in previous
4 dockets. However, we now have Test Year unit cost by shape information available
5 from Library Reference H-106 and have used it. Exhibit USPS-43A describes the
6 nonstandard formula and its inputs. Manual letters and all flats and parcels are
7 assumed to be nonstandard. The basic goal of the formula is to get a weighted
8 average of the cost differences between the nonstandard pieces and average letter
9 costs. The formula develops cost differences between manual letters and the average
10 letter, between all flats and the average letter, and between all parcels and the average
11 letter. The formula used the percent of letters, flats, and parcels which were
12 nonstandard that was used in R78-1. The data underlying this analysis is from a report
13 dated July 13, 1972. The calculations, which were previously only done for single
14 piece, are now done both for single piece First-Class Mail and presorted First-Class
15 Mail.

16

17 Exhibit USPS-43B calculates the cost of single piece and presort nonmachinable
18 letters using the methodology and inputs employed by Postal Service witness Hatfield
19 (USPS-T-25).

20

21 **B. New Data and Data Limitations**

22

23 In response to NDMS/USPS-T32-29 (September 9, 1997), the Postal Service
24 provided data which reflect a more recent estimate of the percent of letters, flats, and
25 parcels which are nonstandard. An analysis using these data is presented in Exhibit
26 USPS-43C.

27

28 One limitation of the analysis presented here is our inability to determine the
29 cost differences of just one-ounce nonstandard pieces. The mail flow model
30 methodology presented in Exhibit USPS-43B can only be used to determine the cost of

1 an average weight letter. Inputs are not available to determine costs by specific ounce
2 increments. Whereas it **might** be possible to estimate the average mail processing
3 cost of a one-ounce letter, flat, or parcel using the methodology presented in USPS LR-
4 H-106, it is not possible to determine the cost of processing a one-ounce letter-shaped
5 nonstandard piece. However, the mail processing costs by ounce increment and
6 shape for First-Class Mail has not been conducted using the methodology presented in
7 USPS LR-H-106 and the reliability of those individual estimates has not been
8 determined.

9
10 It is important to point out that the Commission was satisfied with the
11 Nonstandard Surcharge Library Reference presented in Docket No. R90-1 upon which
12 the analysis in this docket is based. In its Opinion and Recommended Decision, the
13 Commission noted,

14 It is satisfying to observe that in this case the Service has provided solid
15 information on the comparative costs of standard and nonstandard First-Class
16 pieces. We note also that, while the finding of 11 cents additional cost
17 adequately anticipates the automated processing environment expected in the
18 test year, the 10-cent surcharge balances the goals of recovering the
19 corresponding cost while not reflecting the over-optimistic view of cost savings
20 from post-test-year ABC sequencing. We find that the 10-cent surcharge will
21 also continue to encourage use of standardized mail pieces, consistent with the
22 Service's automation and related productivity goals.

23
24 PRC Op. R90-1, Vol. 1 at V-15 [5035].

25 26 **III. RESULTS**

27 Exhibit USPS-43A shows the updated unit volume variable cost difference for
28 nonstandard pieces to be 15 cents for single piece and 11 cents for presort as
29 presented in USPS LR-H-112. Exhibit USPS-43C, using the new volume mix
30 presented in response to NDMS/USPS-T32-29, shows the updated unit volume
31 variable cost difference for nonstandard pieces to be 22 cents for single piece and 15
32 cents for presort. This cost difference is limited to mail processing costs and does not
33 include carrier costs associated with nonstandard pieces. The increase in the cost
34 difference since Docket No. R90-1 can be explained in a variety of ways. As letter mail

1 is handled in increasingly fast and efficient automated operations, its mail processing
2 costs relative to pieces handled in other ways become increasingly lower. Also, as
3 coverage (proportion of sites with automation equipment) and technology improve, the
4 proportion of letter mail handled in highly automated operations increases. With the
5 continued increase in the use of delivery point sequencing (DPS), lower carrier in-office
6 costs will contribute to an ever widening difference between the average letter and
7 nonstandard piece costs. Reflecting the shape mix change from the response to
8 NDMS/USPS-T32-29 also tends to increase the cost differential of nonstandard shaped
9 pieces.

10

11

NONSTANDARD SURCHARGE COSTS PRESENTED IN USPS LR-H-112

A. INPUTS

AVERAGE MAIL PROCESSING UNIT COSTS (Library Reference H-106)

Single Piece

Letters = \$ 0.1174
Flats = \$ 0.3243
Parcels = \$ 0.7408

Presort

Letters = \$ 0.0460
Flats = \$ 0.2087
Parcels = \$ 0.2196

PERCENT OF NONSTANDARD PIECES BY SHAPE (Docket No. R90-1, LR-F-160)

Letters = 58%
Flats = 39%
Parcels = 3%

MANUAL LETTER MAIL PROCESSING COSTS (Exhibit B)

Single Pc. = \$ 0.2054
Presort = \$ 0.1144

B. RESULTS

Formula: (Manual Letters - Avg. Letters) * proportion of letters + (Flats - Avg. Letters) * proportion of flats + (Parcels - Avg. Letters) * proportion of parcels.

Single Piece

\$ 0.1495

Presort

\$ 0.1079

Development of First-Class Mail Processing Unit Costs**First-Class Nonautomation Presort Non-Machinable Mail****Per Piece Cost Summary by Operation**

	[1] TPF	[2] Pieces per Hour	[3] Wage Rate	[4] Cents per Piece	[5] Piggyback Factor	[6] Premium Pay Adjustment	[7] Cents per Piece	[8] Weighted Cost
Outgoing Primary								
Manual	102	662	\$25.45	3.8437	1.3720	0.0423	5.3158	0.0541
Mechanized	0	1,413	\$25.45	1.8008	2.2400	0.0198	4.0536	0.0000
MLOCR	0	7,350	\$25.45	0.3462	2.0950	0.0038	0.7291	0.0000
RBCS	0	816	\$14.92	1.8293	1.4500	0.0201	2.6726	0.0000
LMLM	0	4,985	\$25.45	0.5104	1.4500	0.0056	0.7457	0.0000
BCS-OSS	0	11,984	\$25.45	0.2123	1.7190	0.0023	0.3673	0.0000
MPBCS	0	7,467	\$25.45	0.3408	1.7190	0.0037	0.5895	0.0000
Outgoing Secondary								
Manual	16	691	\$25.45	3.6823	1.3720	0.0405	5.0927	0.0080
Mechanized	0	1,440	\$25.45	1.7670	2.2400	0.0194	3.9775	0.0000
MPBCS	0	7,467	\$25.45	0.3408	1.7190	0.0037	0.5895	0.0000
ADC/AADC Distribution								
Manual	181	759	\$25.45	3.3524	1.3720	0.0369	4.6364	0.0837
Mechanized	0	1,271	\$25.45	2.0020	2.2400	0.0220	4.5064	0.0000
MLOCR	0	7,350	\$25.45	0.3462	2.0950	0.0038	0.7291	0.0000
RBCS	0	816	\$14.92	1.8293	1.4500	0.0201	2.6726	0.0000
LMLM	0	4,985	\$25.45	0.5104	1.4500	0.0056	0.7457	0.0000
BCS-OSS	0	11,984	\$25.45	0.2123	1.7190	0.0023	0.3673	0.0000
MPBCS	0	7,467	\$25.45	0.3408	1.7190	0.0037	0.5895	0.0000
SCF Operations								
Manual	99	896	\$25.45	2.8398	1.3720	0.0312	3.9275	0.0387
Mechanized	0	1,351	\$25.45	1.8834	2.2400	0.0207	4.2396	0.0000
MLOCR	0	7,350	\$25.45	0.3462	2.0950	0.0038	0.7291	0.0000
RBCS	0	816	\$14.92	1.8293	1.4500	0.0201	2.6726	0.0000
LMLM	0	4,985	\$25.45	0.5104	1.4500	0.0056	0.7457	0.0000
BCS-OSS	0	11,984	\$25.45	0.2123	1.7190	0.0023	0.3673	0.0000
MPBCS	0	7,467	\$25.45	0.3408	1.7190	0.0037	0.5895	0.0000
Incoming Primary								
Manual	4,921	562	\$25.45	4.5276	1.3720	0.0498	6.2616	3.0811
Mechanized	0	1,271	\$25.45	2.0020	2.2400	0.0220	4.5064	0.0000
MLOCR	0	7,350	\$25.45	0.3462	2.0950	0.0038	0.7291	0.0000
RBCS	0	816	\$14.92	1.8293	1.4500	0.0201	2.6726	0.0000
LMLM	0	4,985	\$25.45	0.5104	1.4500	0.0056	0.7457	0.0000
BCS-OSS	0	11,984	\$25.45	0.2123	1.7190	0.0023	0.3673	0.0000
MPBCS	0	7,467	\$25.45	0.3408	1.7190	0.0037	0.5895	0.0000

Development of First-Class Mail Processing Unit Costs
First-Class Nonautomation Presort Non-Machinable Mail
Per Piece Cost Summary by Operation (Continued)

	[1] TPF	[2] Pieces per Hour	[3] Wage Rate	[4] Cents per Piece	[5] Piggyback Factor	[6] Premium Pay Adjustment	[7] Cents per Piece	[8] Weighted Cost	
<u>Incoming Secondary</u>									
Manual/Non-Auto Sites	939	1,143	\$25.45	2.2261	1.3720	0.0245	3.0787	0.2892	
Manual/Auto Sites	9,061	648	\$25.45	3.9389	1.3720	0.0433	5.4474	4.9357	
Mechanized	0	1,151	\$25.45	2.2107	2.2400	0.0243	4.9763	0.0000	
MPBCS	0	6,633	\$25.45	0.3836	1.7190	0.0042	0.6636	0.0000	
DBCS First-Pass	0	8,393	\$25.45	0.3032	2.4340	0.0033	0.7412	0.0000	
DBCS Second-Pass	0	8,393	\$25.45	0.3032	2.4340	0.0033	0.7412	0.0000	
CSBCS First-Pass	0	17,124	\$25.45	0.1486	1.9480	0.0016	0.2911	0.0000	
CSBCS Second-Pass	0	17,124	\$25.45	0.1486	1.9480	0.0016	0.2911	0.0000	
CSBCS Third-Pass	0	17,124	\$25.45	0.1486	1.9480	0.0016	0.2911	0.0000	
<u>Other</u>									
Accept./Verification	10,000						0.0699	0.0699	1/
<u>Sort to P. O. Boxes:</u>									
DPS and SS	0	2,341	\$25.45	1.0868	1.3660	0.0120	1.4965	0.0000	
Non-DPS or SS	890	1,171	\$25.45	2.1735	1.3660	0.0239	2.9929	0.2664	
Bundle Sorting	10,000						0.7386	0.7386	4/
% DPS	0.00%	2/							

MODEL COST	9.5655	3/
Proportional Adj	1.1586	
Fixed Adj	0.3573	
TOTAL COST	11.44	

Row 1/: Appendix V, page 1 of 2, LDC 79 unit cost (business mail entry).

Row 2/: DPS percentage from flow model (CSBCS and DBCS accepted volumes as a percent of total pieces).

Row 3/: Total model cost (sum of column 8).

Row 4/: Appendix III, page 4 of 5, row 1.

Column [1]: Pieces processed in each operation from flow model.

Column [2]: Volume variable mail processing productivities by operation (Appendix I, page 32 of 37).

Column [3]: Test year clerk and mail handler wage rates (Library Reference H-146).

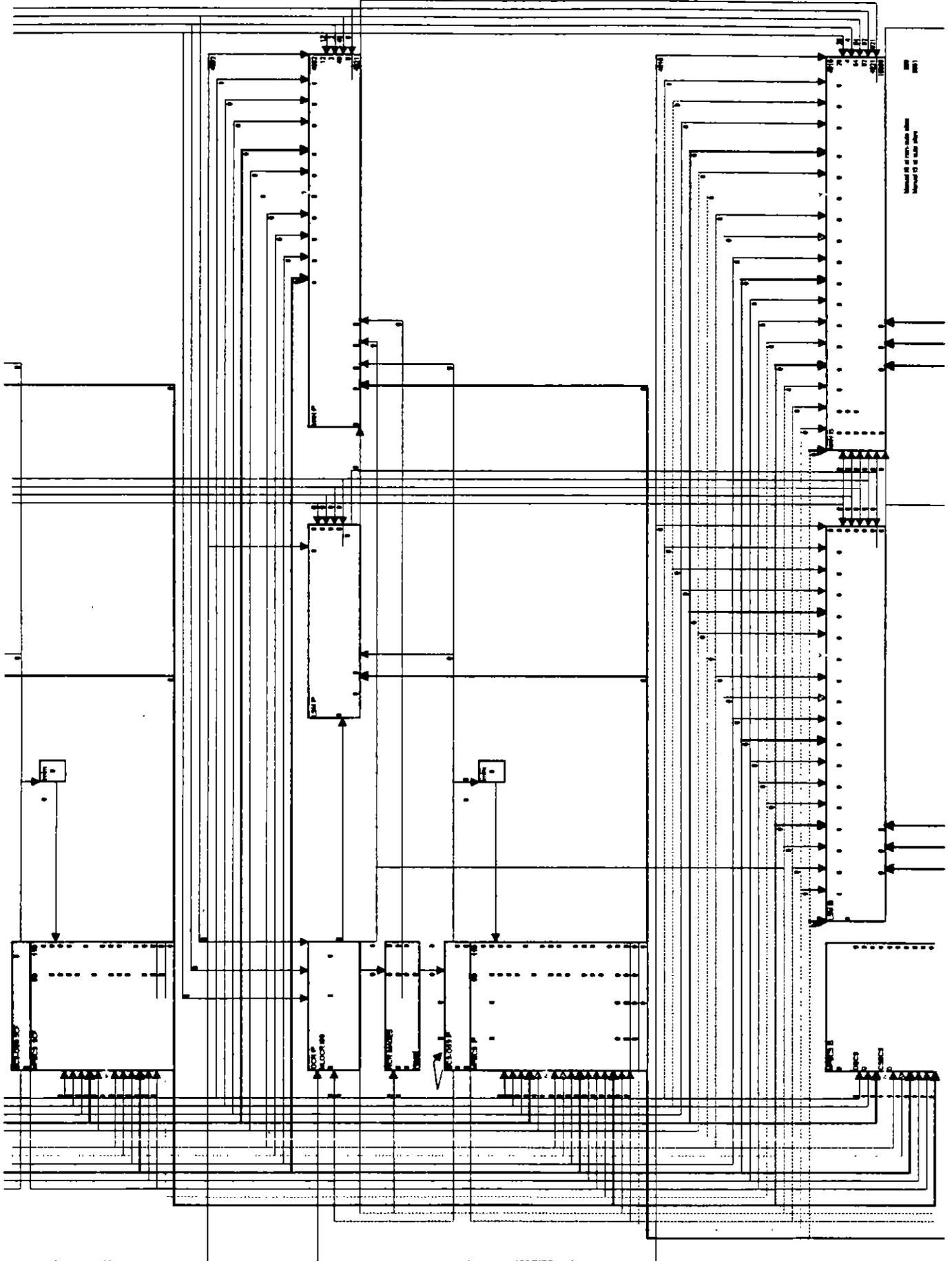
Column [4]: (Column 3 * 100) / Column 2.

Column [5]: Mail processing piggyback factors by operation (Library Reference H-77)

Column [6]: Column 4 * (First-Class presort premium pay adjustment - 1). See LR-H-77.

Column [7]: Column 4 * column 5 + column 6.

Column [8]: Column 1 * column 7.



Model 18 of USPS-43B
Model 19 of USPS-43B

Development of First-Class Mail Processing Unit Costs
First-Class Nonautomation Single Piece Non-Machinable Mail
 Per Piece Cost Summary by Operation

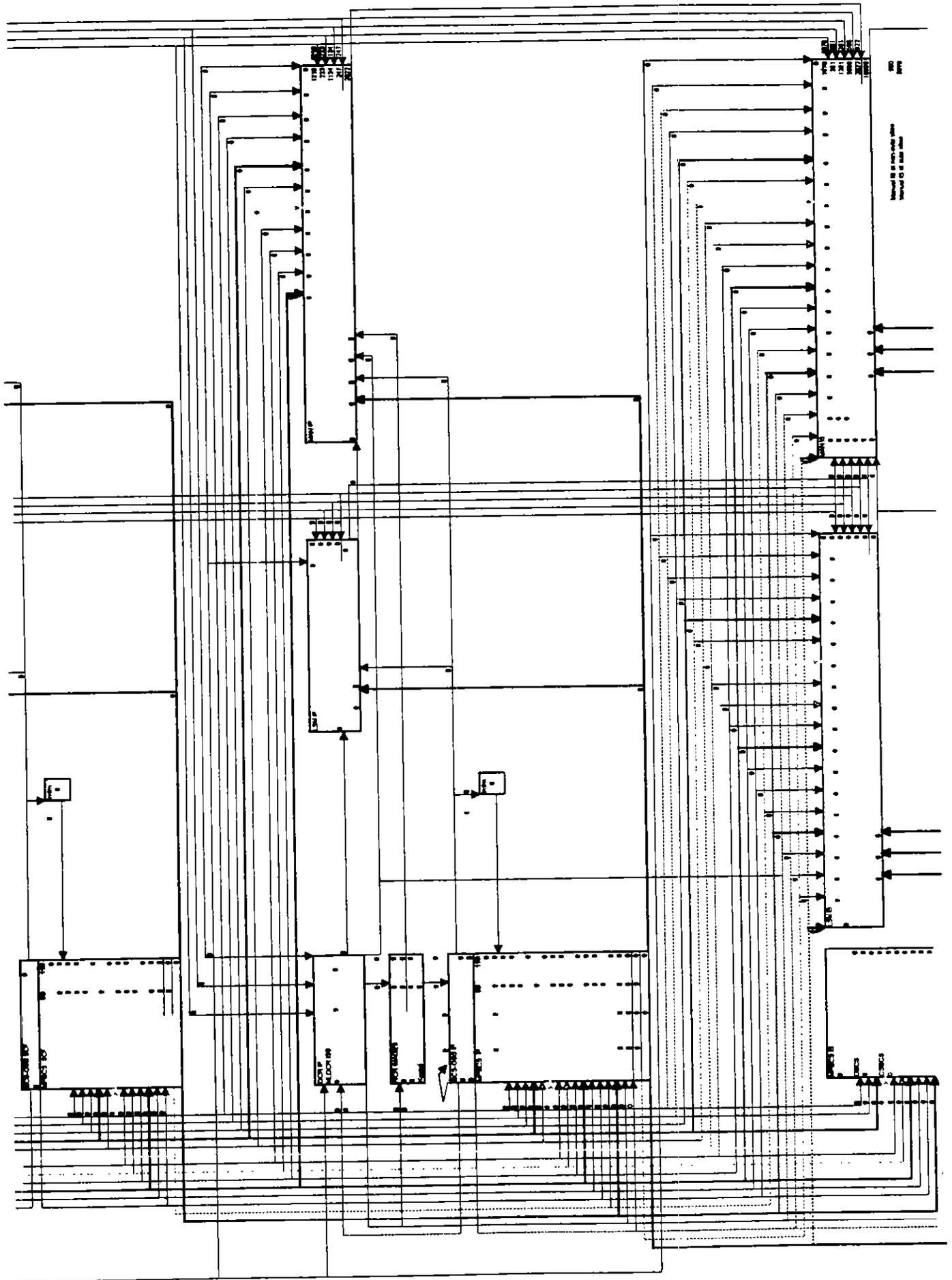
	[1] TPF	[2] Pieces per Hour	[3] Wage Rate	[4] Cents per Piece	[5] Piggyback Factor	[6] Premium Pay Adjustment	[7] Cents per Piece	[8] Weighted Cost
<u>Outgoing Primary</u>								
Manual	10,000	662	\$25.45	3.8437	1.3720	0.0423	5.3158	5.3158
Mechanized	0	1,413	\$25.45	1.8008	2.2400	0.0198	4.0536	0.0000
MLOCR	0	7,350	\$25.45	0.3462	2.0950	0.0038	0.7291	0.0000
RBCS	0	816	\$14.92	1.8293	1.4500	0.0201	2.6726	0.0000
LMLM	0	4,985	\$25.45	0.5104	1.4500	0.0056	0.7457	0.0000
BCS-OSS	0	11,984	\$25.45	0.2123	1.7190	0.0023	0.3673	0.0000
MPBCS	0	7,467	\$25.45	0.3408	1.7190	0.0037	0.5895	0.0000
<u>Outgoing Secondary</u>								
Manual	1,548	691	\$25.45	3.6823	1.3720	0.0405	5.0927	0.7884
Mechanized	0	1,440	\$25.45	1.7670	2.2400	0.0194	3.9775	0.0000
MPBCS	0	7,467	\$25.45	0.3408	1.7190	0.0037	0.5895	0.0000
<u>ADC/AADC Distribution</u>								
Manual	4,285	759	\$25.45	3.3524	1.3720	0.0369	4.6364	1.9868
Mechanized	0	1,271	\$25.45	2.0020	2.2400	0.0220	4.5064	0.0000
MLOCR	0	7,350	\$25.45	0.3462	2.0950	0.0038	0.7291	0.0000
RBCS	0	816	\$14.92	1.8293	1.4500	0.0201	2.6726	0.0000
LMLM	0	4,985	\$25.45	0.5104	1.4500	0.0056	0.7457	0.0000
BCS-OSS	0	11,984	\$25.45	0.2123	1.7190	0.0023	0.3673	0.0000
MPBCS	0	7,467	\$25.45	0.3408	1.7190	0.0037	0.5895	0.0000
<u>SCF Operations</u>								
Manual	3,812	896	\$25.45	2.8398	1.3720	0.0312	3.9275	1.4973
Mechanized	0	1,351	\$25.45	1.8834	2.2400	0.0207	4.2396	0.0000
MLOCR	0	7,350	\$25.45	0.3462	2.0950	0.0038	0.7291	0.0000
RBCS	0	816	\$14.92	1.8293	1.4500	0.0201	2.6726	0.0000
LMLM	0	4,985	\$25.45	0.5104	1.4500	0.0056	0.7457	0.0000
BCS-OSS	0	11,984	\$25.45	0.2123	1.7190	0.0023	0.3673	0.0000
MPBCS	0	7,467	\$25.45	0.3408	1.7190	0.0037	0.5895	0.0000
<u>Incoming Primary</u>								
Manual	2,822	562	\$25.45	4.5276	1.3720	0.0498	6.2616	1.7671
Mechanized	0	1,271	\$25.45	2.0020	2.2400	0.0220	4.5064	0.0000
MLOCR	0	7,350	\$25.45	0.3462	2.0950	0.0038	0.7291	0.0000
RBCS	0	816	\$14.92	1.8293	1.4500	0.0201	2.6726	0.0000
LMLM	0	4,985	\$25.45	0.5104	1.4500	0.0056	0.7457	0.0000
BCS-OSS	0	11,984	\$25.45	0.2123	1.7190	0.0023	0.3673	0.0000
MPBCS	0	7,467	\$25.45	0.3408	1.7190	0.0037	0.5895	0.0000

Development of First-Class Mail Processing Unit Costs
First-Class Nonautomation Single Piece Non-Machinable Mail
 Per Piece Cost Summary by Operation (Continued)

	[1] TPF	[2] Pieces per Hour	[3] Wage Rate	[4] Cents per Piece	[5] Piggyback Factor	[6] Premium Pay Adjustment	[7] Cents per Piece	[8] Weighted Cost	
<u>Incoming Secondary</u>									
Manual/Non-Auto Sites	930	1,143	\$25.45	2.2261	1.3720	0.0245	3.0787	0.2863	
Manual/Auto Sites	9,070	646	\$25.45	3.9389	1.3720	0.0433	5.4474	4.9408	
Mechanized	0	1,151	\$25.45	2.2107	2.2400	0.0243	4.9763	0.0000	
MPBCS	0	6,633	\$25.45	0.3836	1.7190	0.0042	0.6636	0.0000	
DBCS First-Pass	0	8,393	\$25.45	0.3032	2.4340	0.0033	0.7412	0.0000	
DBCS Second-Pass	0	8,393	\$25.45	0.3032	2.4340	0.0033	0.7412	0.0000	
CSBCS First-Pass	0	17,124	\$25.45	0.1486	1.9480	0.0016	0.2911	0.0000	
CSBCS Second-Pass	0	17,124	\$25.45	0.1486	1.9480	0.0016	0.2911	0.0000	
CSBCS Third-Pass	0	17,124	\$25.45	0.1486	1.9480	0.0016	0.2911	0.0000	
<u>Other</u>									
Mail Prep/Cancellation	10,000						0.5698	0.5698	1/
Sort to P. O. Boxes:									
DPS and SS	0	2,341	\$25.45	1.0868	1.3660	0.0120	1.4965	0.0000	
Non-DPS or SS	890	1,171	\$25.45	2.1735	1.3660	0.0239	2.8929	0.2664	
% DPS	0.00%	2/							

MODEL COST	17.4188	3/
Proportional Adj	1.1586	
Fixed Adj	0.3573	
TOTAL COST	20.54	

Row 1/ Appendix V, page 1 of 2, LDC 79 unit cost (business mail entry).
 Row 2/ DPS percentage from flow model (CSBCS and DBCS accepted volumes as a percent of total pieces).
 Row 3/ Total model cost (sum of column 8).
 Row 4/ Appendix III, page 4 of 5, row 1.
 Column [1]: Pieces processed in each operation from flow model.
 Column [2]: Volume variable mail processing productivities by operation (Appendix I, page 32 of 37).
 Column [3]: Test year clerk and mail handler wage rates (Library Reference H-146).
 Column [4]: (Column 3 * 100) / Column 2.
 Column [5]: Mail processing piggyback factors by operation (Library Reference H-77).
 Column [6]: Column 4 * (First-Class presort premium pay adjustment - 1). See LR-H-77.
 Column [7]: Column 4 * column 5 + column 6.
 Column [8]: Column 1 * column 7.



NONSTANDARD SURCHARGE COSTS USING NEW VOLUME SHARES

A. INPUTS

AVERAGE MAIL PROCESSING UNIT COSTS (Library Reference H-106)

Single Piece

Letters = \$ 0.1174
Flats = \$ 0.3243
Parcels = \$ 0.7408

Presort

Letters = \$ 0.0460
Flats = \$ 0.2087
Parcels = \$ 0.2196

VOLUME & PERCENT OF NONSTANDARD PIECES BY SHAPE (Response to NDMS/USPS-T32-29)

	Single Piece		Presort		Carrier Route		Total	
	Vol (Mills)	Percent	Vol (Mills)	Percent	Vol (Mills)	Percent	Vol (Mills)	Percent
Letters =	62.7	19.3%	9.1	18.3%	1.8	22.5%	73.6	19.2%
Flats =	238.0	73.1%	38.4	77.4%	6.0	75.0%	282.4	73.7%
Parcels =	24.9	7.6%	2.1	4.2%	0.2	2.5%	27.2	7.1%
Total =	325.6	100.0%	49.6	100.0%	8.0	100.0%	383.2	100.0%

MANUAL LETTER MAIL PROCESSING COSTS (Exhibit B)

Single Pc. = \$ 0.2054
Presort = \$ 0.1144

B. RESULTS

Formula: (Manual Letters - Avg. Letters) * proportion of letters + (Flats - Avg. Letters) * proportion of flats + (Parcels - Avg. Letters) * proportion of parcels.

Single Piece
\$ 0.2159

Presort
\$ 0.1459