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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

DIRECT TESTIMONY
OF
CHARLES L. CRUM
ON BEHALF OF
UNITED STATES POSTAL SERVICE

TABLE OF CONTENTS

	<u>Page</u>
LISTING OF EXHIBITS.....	iii
AUTOBIOGRAPHICAL SKETCH	iv
I. PURPOSE OF TESTIMONY	1
II. DESTINATION BMC PARCEL POST COST SAVINGS.....	1
A. Introduction.....	1
B. Window and Acceptance Costs.....	1
C. Mail Processing Costs	2
D. Summary	3
III. ORIGIN BMC PARCEL POST COST SAVINGS	3
A. Introduction.....	3
B. BMC Presort Savings	3
D. Summary	4
IV. DESTINATION SCF PARCEL POST COST SAVINGS	4
A. Introduction.....	4
B. Mail Processing Savings	5

C.	Summary	6
V.	DESTINATION DELIVERY UNIT PARCEL POST COST SAVINGS	6
A.	Introduction.....	6
B.	Mail Processing Savings	7
C.	Summary	8
VI.	BMC PRESORT PARCEL POST COST SAVINGS	
A.	Introduction.....	8
B.	Mail Processing Savings	8
C.	Summary	9
VII.	BOUND PRINTED MATTER CARRIER ROUTE COST SAVINGS	
A.	Background	9
B.	Mail Processing Savings	9
C.	Summary	9
VIII.	STANDARD MAIL (A) NONLETTER COST DIFFERENCES	10
A.	Background	10
B.	Introduction.....	11
C.	Analysis and Presentation.....	11
D.	Summary	12

LISTING OF EXHIBITS

- Exhibit A Window Service and Platform Costs
- Exhibit B Volume of Parcel Post Pieces Entered Upstream of a BMC/ASF
- Exhibit C Outgoing Mail Processing Costs at Non-BMC Facilities Avoided by DBMC Parcel Post
- Exhibit D BMC Presort Parcel Post Cost Savings
- Exhibit E Costs Avoided by Depositing Inter-BMC Parcels at the Origin BMC with Presort to the Destination BMC
- Exhibit F Destination BMC Mail Processing Costs Avoided by Parcel Post Deposited at Destination SCFs or Delivery Units
- Exhibit G Avoided Mail Processing Costs of DSCF Parcel Post at SCFs and Delivery Units
- Exhibit H Mail Processing Costs Avoided by Carrier Route Presorted Bound Printed Matter
- Exhibit I Revenue, Pieces, and Weight (RPW) Volume Summary - Government Fiscal Year 1996
- Exhibit J BMC Presorted Parcel Post Cost Per Piece

1 **Direct Testimony**
2 **of**
3 **Charles L. Crum**

4
5 **AUTOBIOGRAPHICAL SKETCH**
6

7 My name is Charles Crum. I have worked for the Postal Service since 1995 as an
8 Economist in the Product Cost Studies office within Product Finance. Prior to joining
9 the Postal Service, I was employed by Westvaco Corporation between 1989 and 1995
10 in a series of increasingly responsible positions within both the Fine Papers and
11 Envelope divisions. My assignments included duties in the areas of
12 financial/cost/economic analysis, accounting, management, quality, systems, and
13 administration at several plant locations throughout the United States. Most recently, I
14 was Administrative Manager (Controller) at the Indianapolis Envelope Plant.

15
16 I have focused much of my attention on parcel issues since shortly after my arrival at
17 Postal Service Headquarters. During this period, I have observed postal operations in
18 Bulk Mail Centers (BMCs), Processing and Distribution Centers (P&DCs), delivery
19 stations, and other facilities.

20
21 I earned a Bachelor of Science degree, cum laude, in Engineering Operations from
22 North Carolina State University in 1985 and a Master's of Business Administration from
23 the Fuqua School of Business at Duke University in 1989.

1 **I. PURPOSE OF TESTIMONY**

2

3 The purpose of my testimony is to provide Witness Mayes necessary cost data to
4 support the proposed DBMC, OBMC (Origin BMC), DSCF (Destination SCF), and
5 DDU (Destination Delivery Unit) dropship discounts as well as the BMC Presort
6 discount for parcel post. My purpose is also to supply Witness Adra the cost data to
7 update the Bound Printed Matter Carrier Route discount and Witness Moeller the
8 cost data to support the proposed \$.10 surcharge for Standard Mail (A) pieces that
9 are neither letter nor flat shaped.

10

11 **II. DESTINATION BMC PARCEL POST COST SAVINGS**

12

13 A. Introduction

14

15 Witness Acheson provided the initial cost evidence for a destination bulk mail
16 center (DBMC) discount for fourth-class parcel post in Docket No. R90-1, USPS-T-
17 12. He identified cost savings in acceptance, mail processing, and transportation
18 with respect to the Intra-BMC rate category.

19

20 In developing cost savings for acceptance and mail processing, my costing
21 approach is similar to witness Acheson's. However, since DBMC now is an existing
22 rate category, in some cases additional information is available and is used. Also,
23 witness Hatfield develops transportation costs separately in USPS-T-16.

24

25 B. Window and Acceptance Costs

26

27 All DBMC mail is bulk accepted and avoids the single piece acceptance portion of
28 window service costs. Non-DBMC mail can be either accepted at the window as a
29 single piece or can be bulk accepted at the platform. Exhibit A shows the total

1 Window Service and Platform related cost savings for DBMC Parcel Post to be 9.2
2 cents per piece at FY 1998 test year cost levels.

3

4 C. Mail Processing Costs

5

6 Besides avoiding all handling costs at origin BMCs, as is the case with intra-BMC
7 pieces, parcel post that is dropshipped by the mailer to the destination BMC avoids
8 handlings at the origin SCF all of the time and at an origin satellite facility
9 (Associate Office, station, or branch) some of the time. Like witness Acheson, I
10 attempted to identify CRA (Cost and Revenue Analysis) costs for outgoing mail
11 processing operations at non-BMC facilities. The costs were calculated in a slightly
12 different way because of the new volume variability/cost pool approach incorporated
13 into the Base Year CRA (see USPS-T-5 for additional information regarding this
14 new approach). I divided these costs by the parcel post volume not deposited at
15 BMCs to estimate the handling costs saved by the Postal Service when a piece
16 avoids the above mentioned facilities.

17

18 Library Reference H-144 develops the FY 1996 mail processing labor costs incurred
19 by parcel post at outgoing facilities upstream from the BMC/ASF. Exhibit B
20 estimates the volume of parcel post deposited upstream from a BMC/ASF. Exhibit
21 C combines these total outgoing cost and volume estimates to show the total mail
22 processing costs avoided by DBMC parcel post to be 37.7 cents per piece at FY
23 1998 test year cost levels.

24

1 D. Summary

2

3 On the basis of my analysis, I conclude that parcel post deposited in bulk by the
4 mailer at the destination BMC saves the Postal Service 9.2 cents per piece in
5 window and acceptance costs and 37.7 cents per piece in mail processing costs
6 compared to non-DBMC intra-BMC mail, at FY 1998 test year cost levels.

7

8 **III. ORIGIN BMC COST SAVINGS**

9

10 A. Introduction

11

12 Parcel post that is dropshipped by the mailer at the origin BMC avoids handlings at
13 the origin sectional center facility (SCF) all of the time and at a satellite facility some
14 lesser proportion of the time. Pieces will be bulk accepted in a manner similar to
15 DBMC parcel post.

16

17 My testimony shows the costs avoided when a mailer dropships to the origin BMC,
18 including the savings resulting from a mandatory BMC presort. The cost savings
19 are those developed for acceptance and mail processing in my DBMC analysis in
20 addition to the BMC presort savings described in Exhibit D. Unlike the stated
21 DBMC savings which are from an Intra-BMC rate base, OBMC savings will be from
22 an Inter-BMC rate base.

23

24 B. BMC Presort Savings

25

26 To qualify for the OBMC discount, mailers will have to deposit their parcels at the
27 origin BMC and presort to the appropriate destination BMC. My analysis assumes
28 the BMC presort requirements that machinable pieces will be deposited in
29 sufficiently (at least 75 percent) full large cardboard boxes often referred to as
30 "gaylords" and that nonmachinable pieces will be deposited on sufficiently full

1 pallets (at least 4 feet high). Pieces are segregated by container type for efficiency
2 of entry into the parcel sorting machine or the manual handling process
3 respectively. Exhibit D shows the BMC presort related savings including those
4 beginning at the origin BMC where qualifying pieces are entered. Weighting the
5 average costs by the Inter-BMC volume proportion of machinable and
6 nonmachinable pieces gives total BMC presort-related savings of 10.3 cents per
7 piece (see Exhibit E).

8

9 C. Summary

10

11 In Exhibit E, BMC presort related savings of 10.3 cents per piece are combined with
12 the DBMC-related acceptance and mail processing cost savings (9.2 cents per
13 piece for acceptance and 37.7 cents per piece for mail processing (see Section II))
14 which apply to OBMC mail as well as DBMC mail. On the basis of my cost analysis,
15 then, I conclude that origin BMC dropship by the mailer with mandatory BMC presort
16 saves 57.2 cents per piece, at FY 1998 test year cost levels, compared to non-
17 OBMC inter-BMC parcels.

18

19 IV. DESTINATION SCF PARCEL POST COST SAVINGS

20

21 A. Introduction

22

23 I studied the potential cost savings for parcel post pieces dropshipped to the
24 destination sectional center facility (DSCF). When parcels bypass the destination
25 BMC, they avoid all the associated handling and sorting costs that would be
26 incurred there. These pieces would also avoid the transportation leg from the BMC
27 to the destination SCF. My testimony describes the mail processing costs saved
28 from the applicable costs for DBMC parcel post if mailers deposit their parcels in
29 bulk at the destination SCF. Witness Hatfield (USPS-T-16) describes the
30 transportation-related savings associated with DSCF dropship.

1 Because the primary task of the destination BMC is to sort machinable parcels to 5-
2 digit ZIP Code areas, the proposed destination SCF dropship discount includes a
3 mandatory presort requirement. My analysis assumes pieces must be presorted to
4 5-digits. I also assume machinable parcels are offered by the mailer in sacks with
5 an average of 10 pieces per 5-digit area and nonmachinables are offered in GPMCs
6 (General Purpose Mail Containers) with an average of 25 pieces per 5-digit area. If
7 the presort requirement were removed, pieces would generally have to be shipped
8 back to the BMC for sorting and the benefits of the DSCF dropship would be more
9 than eliminated.

10

11 B. Mail Processing Savings

12

13 Parcel post that is dropshipped by the mailer to the destination SCF avoids any
14 handlings at the destination BMC in addition to all the other savings associated with
15 DBMC pieces. To be consistent with the DBMC requirements, DSCF parcels must
16 be limited to mailings with at least 50 pieces. Exhibit F describes the destination
17 BMC mail processing costs avoided by parcel post that is dropshipped to the
18 destination SCF. Exhibit G compares the downstream SCF and delivery unit-
19 related costs for parcel post moving in the Postal Service mailstream versus the 5-
20 digit dropshipped DSCF sacks (for machinables) and GPMCs (for nonmachinables)
21 which could qualify for the discount.

22

23 Exhibit F shows the total average mail processing costs avoided at BMCs by DSCF-
24 deposited parcel post to be 27.3 cents per machinable piece and 54.4 cents per
25 nonmachinable piece. Exhibit G shows .8 cents per machinable piece and 19.8
26 cents per nonmachinable piece as the additional downstream savings at SCFs and
27 delivery units. Those Exhibit G results are contingent on the assumption that DSCF
28 will not be allowed at those SCFs that are bypassed by the 12.3 percent of parcel
29 volume that gets direct transportation from the BMC to the delivery unit.

30

1 Adding the Exhibit F and Exhibit G results gives savings of \$.281 and \$.742
2 respectively for machinables and nonmachinables. Weighting them together by the
3 proportion of DBMC machinable and nonmachinable pieces (.93 and .07
4 respectively - see Exhibit F) gives my total estimated mail processing savings of
5 31.3 cents per piece, compared to non-DSCF DBMC mail, at FY 1998 test year cost
6 levels. This result is sensitive to the volume assumptions per 5-digit sack or GPMC.
7 For example, lowering the average per sack quantity to five would drop machinable
8 savings to 22.4 cents while lowering the average per GPMC quantity to 15 would
9 lower nonmachinable savings to 54.1 cents for a total weighted average of 24.6
10 cents. This simple calculation could be made in Exhibit G by changing the
11 conversion factors and multiplying through for each of the operations.

12

13 C. Summary

14

15 On the basis of my cost analysis, I estimate that DSCF dropshipped parcel post with
16 machinables in 5-digit sacks and nonmachinables in 5-digit GPMCs will save the
17 Postal Service an average of 31.3 cents per piece at FY 1998 test year cost levels,
18 compared to non-DSCF DBMC mail.

19

20 V. DESTINATION DELIVERY UNIT PARCEL POST COST SAVINGS

21

22 A. INTRODUCTION

23

24 I studied the potential cost savings for parcel post deposited by the mailer at the
25 destination delivery unit (DDU). When parcels are deposited at the destination
26 delivery unit, they avoid both the destination BMC and the destination SCF. My
27 analysis will estimate the mail processing costs avoided by bypassing these
28 facilities. Witness Hatfield (USPS-T-16) describes the transportation-related
29 savings associated with DDU dropship

30

1 B. MAIL PROCESSING SAVINGS

2

3 Parcel post that is dropshipped by the mailer to the destination delivery unit avoids
4 all handlings at both the destination BMC and destination SCF in addition to all the
5 other savings associated with DBMC parcels. My analysis will estimate these mail
6 processing cost savings relative to non-DDU DBMC parcels. To be compatible with
7 the assumptions of the DBMC analysis, the pieces must be delivered in bulk with at
8 least the same total minimum volume per mailing as DBMC (currently 50 pieces).
9 Qualifying mailings would be limited to Postal Service designated delivery units to
10 avoid costly rehandling and rerouting that might eliminate the savings.

11

12 Exhibit F describes the destination BMC mail processing costs avoided by DDU
13 entered parcel post. Weighting the savings by the DBMC volume of machinable
14 and nonmachinable pieces gives a total savings of 29.2 cents per piece. I use
15 information from the parcel post models presented by witness Daniel (USPS-T-29)
16 to estimate the additional savings at SCFs through unloading at delivery units of
17 DDU-deposited parcels. Page 3 of Appendix V, USPS-T-29 shows the total
18 downstream postal network costs to be 14.4 cents per piece (.1097+.034) for
19 machinable parcels while page 4 shows the nonmachinable costs to be 44.7 cents
20 per piece (.364+.0828). Weighting these by the DBMC volume share of machinable
21 and nonmachinable pieces (.930 and .070 respectively - see Exhibit F) gives the
22 average modeled postal costs at downstream facilities of 16.5 cents per piece.
23 Since these are the modeled facility costs that DDU mail avoids, 16.5 cents per
24 piece is also my estimate of savings. Adding this to the avoided mail processing
25 costs at BMCs gives the total DDU deposited parcel post mail processing savings of
26 45.7 cents per piece.

1 C. SUMMARY

2

3 On the basis of my cost analysis, I estimate that DDU-dropshipped parcel post will
4 save the Postal Service an average of 45.7 cents per piece at FY 1998 test year
5 cost levels, compared to non-DDU DBMC mail.

6

7 **VI. BMC PRESORT PARCEL POST COST SAVINGS**

8

9 A. INTRODUCTION

10

11 The Postal Service is proposing a discount for bulk entered Inter-BMC parcel post
12 presorted to the destination BMC. BMC presort parcel post avoids sorting at the
13 origin BMC and can be moved through the facility in bulk and routed to its
14 destination BMC.

15

16 B. MAIL PROCESSING SAVINGS

17

18 To qualify for the BMC Presort discount as proposed, mailers can deposit their
19 parcels at any designated facility. My analysis does assume that machinable
20 pieces will be deposited in sufficiently (at least 75 percent) full large cardboard
21 boxes often referred to as "gaylords" and that nonmachinable pieces will be
22 deposited on sufficiently full pallets (at least 4 feet high). I compare the postal
23 network mail processing costs to the costs of qualifying BMC Presort parcels to
24 show the savings for the presorted pieces. Exhibit D shows machinable BMC
25 Presort savings to be \$.134 and nonmachinable BMC Presort savings to be \$.123.

1 C. SUMMARY

2

3 Based on my analysis and assuming the specifications described above, BMC
4 Presort saves 13.4 cents for machinable pieces and 12.3 cents for nonmachinable
5 pieces at FY 1998 test year cost levels.

6

7 **VII. BOUND PRINTED MATTER CARRIER ROUTE PRESORT COST SAVINGS**

8

9 A. BACKGROUND

10

11 In Docket No. R84-1 the Postal Service proposed a discount for bulk Bound Printed
12 Matter presorted to individual carrier routes and box sections based on an analysis
13 by witness Madison (USPS-T-16). Though no new cost studies were completed, the
14 carrier route discount increased in both Docket No. R90-1 and Docket No. R94-1.
15 The current discount is 6.3 cents per piece.

16

17 B. MAIL PROCESSING SAVINGS

18

19 My analysis uses a similar format and much of the basic data from witness
20 Madison's study. I have updated the wage rates and piggyback factors, adjusted for
21 the postal service volume variability assumptions, and revised the methodology
22 based on operational changes which have occurred. Exhibit H describes the
23 analysis and shows the estimated savings for carrier route presorted Bound Printed
24 Matter to be \$.067.

25

26 C. SUMMARY

27

28 Based on my analysis, I estimate that the mail processing savings of carrier route
29 presorted Bound Printed Matter as compared to Basic Bulk BPM are 6.7 cents at FY
30 1998 test year cost levels.

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VIII. STANDARD MAIL (A) NONLETTER COST DIFFERENCES

A. BACKGROUND

In 1990, the Postal Service took the first step towards recognizing the effects of shape in Standard Mail (A) (then third-class) when witnesses Moeller and Shipe produced studies showing shape-based cost differences between letters and nonletters (Docket No. R90-1, USPS-T-9 and USPS-T-10). This cost distinction was supported by the models presented in Docket No. MC95-1. Though the rate distinction has always been limited by low “passthroughs,” this concept still is integral to current Standard Mail (A) rates. My testimony will further distinguish costs on the basis of shape by showing the additional shape-based cost differences within nonletters, between flats and parcels.

The following table presents total bulk Standard Mail (A) volume shares based on Tables 1 and 2 of Library Reference H-108.

FY 1996 VOLUME SHARES

<u>Letters</u>	<u>Flats</u>	<u>Parcels</u>
58.5%	40.1%	1.4%

While the relative volume of parcels is low, the absolute volume is not and there is sufficient data to separate parcels from flats in Standard Mail (A). This effort to more closely align rates with costs will help reduce the rate averaging that currently exists within Standard Mail (A).

1 B. INTRODUCTION

2

3 My testimony uses the volumes and costs by shape presented in Library Reference
4 H-108 to show the cost differences within Standard Mail (A) nonletters between
5 parcels and flats. Volumes by shape and rate category within third-class Bulk Rate
6 (now Standard Mail (A) Regular/Nonprofit and Enhanced Carrier Route) are derived
7 from the Permit/Bravis system and tied to official Revenue, Pieces, and Weight
8 (RPW) totals. Volume variable costs are based on the In-Office Cost System
9 (IOCS) and the Cost and Revenue Analysis (CRA) report and its associated
10 workpapers where possible. Several studies supply additional data as necessary.
11 Total volume variable unit costs by shape are found by dividing costs by volumes in
12 each category.

13

14 C. ANALYSIS AND PRESENTATION

15

16 I combine Regular and Enhanced Carrier Route as well as Regular Rate and
17 Nonprofit costs and volumes for the purposes of my analysis. The following table
18 summarizes cost per piece data from Library Reference H-108 for fiscal year 1996.

19

20 FY 1996 STANDARD MAIL (A) COSTS BY SHAPE

21

22 Cost per Piece (cents)

23

24 Parcels 51.7

25 Flats 11.3

26

27 Difference 40.4

28

29 To find the FY 1998 test year cost difference per piece, I multiply the 40.4 cents
30 described above by the test year/base year wage rate adjustment factor of 1.053

1 (described in Library Reference H-146). This yields 42.5 cents as my estimate of
2 the FY 1998 test year cost difference between parcels and flats in bulk Standard
3 Mail (A).

4

5 The degree of presort and depth of dropshipment can each have an impact on
6 costs. Standard Mail (A) flats are somewhat more finely presorted and deeply
7 dropshipped than parcels. I have adjusted the parcel/flat cost difference to account
8 for this. Table 7 of Library Reference H-108 shows that .3 cents of the 42.5 cent
9 cost difference is due to the deeper entry of flats and 7.0 cents is due to the finer
10 presort of flats. This leaves 35.2 cents per piece as my estimate of the FY 1998
11 shape-related volume variable cost difference between Standard Mail (A) parcels
12 and flats.

13

14 D. SUMMARY

15

16 My testimony has identified cost differences between flats and parcels within
17 Standard Mail (A). I have been quite conservative and backed out the portion of the
18 cost differences due to differing levels of dropship and presort. As previously
19 stated, my purpose is to support witness Moeller's proposed 10 cent surcharge of
20 nonletter, nonflat-shaped mail. My costs and volumes cover the same full range
21 (Regular Rate and Nonprofit, Regular and ECR) of pieces that witness Moeller's
22 surcharge will impact. On the basis of my analysis I estimate the adjusted FY 1998
23 test year cost difference between flats and parcels within bulk Standard Mail (A)
24 nonletters to be 35.2 cents per piece.

25

WINDOW SERVICE AND PLATFORM COSTS

WINDOW SERVICE PARCEL POST COSTS

Base Year 1996 Window Service Cost Segment 3.2 total = \$7,492,000 (Exhibit USPS-T-5A)

Window Service CS 3.2 direct costs only = \$6,704,368 (Library Reference H-144)

DBMC = \$52,047; Proportion = .0079%

Non-DBMC = \$6,550,406; Proportion = 99.21%

Total Window Service costs by rate category allocated in proportion to direct costs:

DBMC = \$7,492,000 * .0079 = \$59,187

Non-DBMC = \$7,492,000 * .9921 = \$7,432,813

PARCEL POST VOLUMES - Exhibit I

DBMC = 96,745,734

Non-DBMC = 116,082,589

WINDOW SERVICE COSTS PER PIECE:

DBMC = \$59,187/96,745,734 = \$.0006 per piece

Non-DBMC = \$7,432,813/116,082,589 = \$.0640 per piece

\$.0640 - \$.0006 = \$.0634

\$.0634 * 1.403 (Window Service related Base Year 1996 indirect attributable cost "piggyback" factor, Zone Rate Parcel Post - Library Reference H-77)

= **8.9 cents** saved per DBMC piece.

PLATFORM ACCEPTANCE COSTS

Total = \$2,392,000 (Library Reference H-144)

All DBMC mail is bulk accepted at the platform and much of Non-DBMC is also bulk accepted. DBMC additionally appears to come in larger and more full trucks. Because the tallies would be so limited for such a small amount of costs and without any additional data available, I have assumed an even split between DBMC and Non-DBMC for these costs. The final costs are relatively insensitive to this assumption.

DBMC = $(\$2,392,000/2)/96,745,734 = \$0.0124/\text{piece}$

Non-DBMC = $(\$2,392,000/2)/116,082,589 = \$0.0103/\text{piece}$

$\$0.0124 - \$0.0103 = .21 \text{ cents}$ additional average costs per DBMC piece for Platform acceptance

WINDOW SERVICE AND PLATFORM ACCEPTANCE RELATED SAVINGS

$\$0.0890 - \$0.0021 = \$0.0869$ per piece

Thus, 8.7 cents is the total estimated base year window and acceptance savings per piece for DBMC Parcel Post. Multiplying this by the Clerk and Mailhandler test year/base year wage rate adjustment factor of 1.053 (Library Reference H-146) gives the total estimated test year cost savings of **9.2 cents**.

VOLUME OF PARCEL POST PIECES ENTERED UPSTREAM OF A BMC/ASF

<u>DESCRIPTION</u>		<u>SOURCE</u>
1. Proportion of Inter-BMC volume deposited at BMC's by mailers.	.043546	USPS-T-37
2. FY 1996 Inter-BMC Volume	68,042,723	Exhibit I
3. Estimate of Inter-BMC Parcel Post piece volume deposited at BMC's by mailers in FY 1996	2,962,988	Line 1 * Line 2
4. FY 1996 DBMC Volume	96,745,734	Exhibit I
5. Proportion of Parcel Post Pound volume that is Plant-loaded by USPS	.0048	1993 Plantload Study R94-1, LR-G-157
6. Proportion of Plantloaded Piece volume that is Plant-loaded to BMC's	.684	R90-1, USPS-T-12, page 25
7. FY 1996 non-DBMC Parcel Post Volume	116,082,589	Exhibit I (Intra-BMC+Inter-BMC)
8. Total Piece Volume Plantloaded to BMC's	381,122	Line 5 * Line 6 *Line 7
9. Total Piece Volume Plantloaded to or Deposited (by a mailer) at a BMC or beyond	100,089,844	Line 3 + Line 4 + Line 8
10. FY 1996 Total Parcel Post Volume	212,828,323	Exhibit I
11. Total Piece Volume Plantloaded to or Deposited upstream of a BMC/ASF	112,738,479	Line 10 - Line 9

OUTGOING MAIL PROCESSING COSTS AT NON-BMC FACILITIES AVOIDED BY
DBMC PARCEL POST

A. Costs Avoided

1. FY 1996 Processing Costs	\$23,977,000	Library Reference H-144
2. Base Year 1996 Parcel Post Mail Processing "Piggyback" Factor	.685	Library Reference H-77
3. Indirect Attributable Costs	\$16,424,245	Line 1 * Line 2
4. Total	\$40,401,245	Line 1 + Line 3

B. Volumes

1. FY 1996 Parcel Post volume entered upstream of BMC/ASF	112,738,479	Exhibit B
---	-------------	-----------

C. Unit Costs

1. Unit Costs Avoided	\$.358	Costs/Volume (Line A4/Line B1)
-----------------------	--------	-----------------------------------

D. Test Year/Base Year Adjustment

$$.358 * 1.053$ (LR-H-146, Chapter II-J - Clerks and Mailhandlers test year/base year wage rate adjustment factor) = \$.377

1998 estimated test year costs avoided equals **37.7 cents**.

BMC PRESORT PARCEL POST COST SAVINGS

MACHINABLE PARCEL POST

<u>Operation</u>	<u>Nonpresorted Cost/piece (1)</u>	<u>BMC Presorted Cost/piece (2)</u>	<u>Difference (Savings)</u>
Origin SCF Load	\$ 0.049	\$ 0.019	\$ 0.030
Origin BMC Unload	\$ 0.027	\$ 0.024	\$ 0.003
Origin BMC	\$ 0.187	\$ 0.041	\$ 0.146
Origin BMC Load	\$ 0.022	\$ 0.022	
DBMC Unload	\$ 0.024	\$ 0.024	
DBMC Sort	<u>\$ 0.097</u>	<u>\$ 0.142</u>	<u>\$ (0.045)</u> = \$.104 BMC Savings
Total	\$ 0.406	\$ 0.272	\$ 0.134

NONMACHINABLE PARCEL POST

<u>Operation</u>	<u>Nonpresorted Cost/piece</u>	<u>BMC Presorted Cost/piece</u>	<u>Difference (Savings)</u>
Origin SCF Load	\$ 0.109	\$ 0.075	\$ 0.034
Origin BMC Unload	\$ 0.068	\$ 0.094	\$ (0.026)
Origin BMC	\$ 0.248	\$ 0.164	\$ 0.084
Origin BMC Load	\$ 0.101	\$ 0.086	\$ 0.015 BMC Savings
DBMC Unload	<u>\$ 0.110</u>	<u>\$ 0.094</u>	<u>\$ 0.016</u> = \$.089
Total	\$ 0.636	\$ 0.513	\$ 0.123

1. USPS-T-29, Appendix V, page 3.
2. Exhibit J.

COSTS AVOIDED BY DEPOSITING INTER-BMC PARCELS AT THE
ORIGIN BMC WITH PRESORT TO THE DESTINATION BMC

DBMC Savings

I. Mail Processing	(see Section IIC of Testimony)	\$ 0.377
II. Acceptance	(see Section IIB of Testimony)	\$ 0.092

BMC Related Savings

A. Total Machinable Savings	\$ 0.104 (1)
B. Total Nonmachinable Savings	\$ 0.089 (1)
III. Total BMC Presort Related Savings	\$ 0.103 (2)
Total OBMC Mail Processing Savings (I + II + III)	\$ 0.572

1. Exhibit D
2. Machinable and nonmachinable savings weighted by Inter-BMC volume proportions
.104*.913 [.913=60,462,052/66,257,981] + .089*.087 [.087=5,795,914/66,257,981] (LR-H-135)

DESTINATION BMC MAIL PROCESSING COSTS AVOIDED BY
PARCEL POST DEPOSITED AT DESTINATION SCFs OR DELIVERY UNITS

A. MACHINABLE PARCEL POST (Costs for Nonqualifying Mail)

<u>Operation</u>	<u>Prob. of Handling(1)</u>	*	<u>TY 1998 Cost per Handling(2)</u>	= <u>Costs(3)</u>
Unload Bedload	0.962		\$ 0.049	0.047
Unload Pallet	0.003		0.033	0.000
Unload OTR	0.008		0.019	0.000
Unload Gaylord	0.026		0.024	0.001
Unload OWC	0.002		0.044	0.000
Dump Pallet	0.003		0.048	0.000
Dump OTR	0.008		0.046	0.000
Dump Gaylord	0.026		0.043	0.001
Dump OWC	0.002		0.108	0.000
Label Cost	1.000		0.005	0.005
Primary Sort	1.000		0.058	0.058
Secondary Sort	0.830		0.036	0.030
Tend CL	0.733		0.055	0.040
Sack and Tie	0.267		0.185	0.049
Load OTRs - loose	0.603		0.037	0.022
Load OTRs w/ sacks	0.029		0.031	0.001
Load OWC	0.130		0.087	0.011
Bedload Sacks	0.238		0.029	0.007
Savings				\$ 0.273

B. NONMACHINABLE PARCEL POST (Costs for Nonqualifying Mail)

<u>Operation</u>	<u>Prob. of Handling(1)</u>	*	<u>Cost per Handling(2)</u>	= <u>Costs(3)</u>
Unload Bedload	0.986		0.188	0.185
Unload NMOs on Pallet	0.008		0.111	0.001
Unload NMOs in OTR	0.007		0.047	0.000
Sort	1.000		0.249	0.249
Bedload from IHC	0.129		0.172	0.022
Load NMOs in OTR	0.536		0.094	0.051
Load NMOs on Pallet	0.310		0.101	0.031
Load NMOs in OWC	0.025		0.222	0.006
Savings				\$ 0.544

Total Mail Processing Savings at BMCs **\$ 0.292 (4)**

1. Probability that an average piece will receive a particular handling. (Library Reference H-131 and USPS-T-29)
2. Estimated test year attributable costs of complete handling for particular piece. (USPS-T-29, Appendix V, pages 3 & 4.)
3. Avoided costs of the average piece. (2*3)
4. Machinable and nonmachinable savings weighted by DBMC volume proportions
.273*.930 [.930=89,624,307/96,381,277] + .544*.070 [.070=6,756,973/96,381,277] (LR-H-135)

AVOIDED MAIL PROCESSING COSTS OF DSCF PARCEL POST
AT SCFs AND DELIVERY UNITS

I. AFTER-BMC DOWNSTREAM COSTS OF DSCF PREPARED PARCEL POST

Test Year 1998 Wage Rate	=	\$25.45	(1)
Platform Non-BMC Indirect Attrib. Cost (Piggyback Factor)	=	1.844	(2)
Operation Productivities (pieces per hour)			
		<u>Sacks</u>	<u>GPMCs</u>
Crossdock	=	12.6	12.6 (3)
Load	=	325.8	18.6 (3)
Unload	=	275.1	37.2 (3)
Dump	=	187.5	(3)
Pieces per Container (Conversion Factor)	=	10	25 (4)
Sacks Crossdock Only	=	39.2	(5)

<u>Operation</u>	Cost Per Handling (6)	
	<u>Sacks</u>	<u>GPMCs</u>
Crossdock at SCF	0.095	0.149
Load at SCF	0.014	0.101
Unload at delivery unit	0.017	0.050
Dump Sacks at delivery unit	0.025	
Total	\$ 0.151	\$ 0.300

1. Library Reference H-146.
2. Library Reference H-77.
3. USPS-T-29, Appendix V, page 15.
4. Average number of pieces per container.
5. USPS-T-29, Appendix V, page 15.
6. Wage rate * piggyback factor / (conversion factor * productivity)

II. AFTER-BMC DOWNSTREAM COSTS OF PARCEL POST ON THE POSTAL NETWORK

A. Machinable Parcel Post

<u>Destination SCF</u>	<u># of hand.</u>	<u>units/hr.</u>	<u>conv fact.</u>	<u>PB fact.</u>	<u>\$ per op.</u>	<u>Cost</u>
Unload Bedload Sacks	0.2384	275.1	5.8	1.84	0.029	0.007
Unload Sacks in OTR	0.0289	37.2	93.0	1.84	0.014	0.000
Unload loose in OTR	0.6025	37.2	78.4	1.84	0.016	0.010
Unload OWC	0.1302	37.2	33.3	1.84	0.038	0.005
Crossdock Bedload Sacks	0.2384	12.6	39.2	1.84	0.095	0.023
Crossdock Sacks in OTR	0.0289	12.6	93.0	1.84	0.040	0.001
Crossdock loose in OTR	0.6025	12.6	78.4	1.84	0.048	0.029
Crossdock OWC	0.1302	12.6	33.3	1.84	0.112	0.015
Bedload Sacks	0.2673	325.8	5.8	1.84	0.025	0.007
Load OTRs w/ loose	0.6025	18.6	78.4	1.84	0.032	0.019
Load Hampers/OWC	0.1302	18.6	33.3	1.84	0.076	0.010
Destination Delivery Unit						
Unload Bedload Sacks	0.2673	275.1	5.8	1.84	0.029	0.008
Unload loose in OTR	0.6025	37.2	78.4	1.84	0.016	0.010
Unload OWC	0.1302	37.2	33.3	1.84	0.038	0.005
Dump Sacks	0.2673	187.5	5.8	1.84	0.043	0.012
TOTAL						\$0.159

B. Nonmachinable Parcel Post

<u>Destination SCF</u>	<u># of hand.</u>	<u>units/hr.</u>	<u>conv fact.</u>	<u>PB fact.</u>	<u>\$ per op.</u>	<u>Cost</u>
Unload Bedload to IHC	0.1291	275.1	1.0	1.84	0.171	0.022
Unload OTRs	0.5363	37.2	30.8	1.84	0.041	0.022
Unload Pallet	0.3098	21.9	22.3	1.84	0.096	0.030
Unload OWC	0.0248	37.2	13.1	1.84	0.096	0.002
Move IHC	0.1291	25.1	23.3	1.84	0.080	0.010
Move OTRs	0.5363	25.1	30.8	1.84	0.061	0.032
Move Pallet	0.3098	25.1	22.3	1.84	0.084	0.026
Move OWC	0.0248	25.1	13.1	1.84	0.143	0.004
Manual Sort	1	514.6	1.0	1.54	0.076	0.076
Move IHC	0.2673	25.1	23.3	1.84	0.080	0.021
Move OTRs	0.6025	25.1	30.8	1.84	0.061	0.037
Move OWC	0.1302	25.1	13.1	1.84	0.143	0.019
Bedload NMOs	0.2673	315.3	1.0	1.84	0.149	0.040
Load OTRs w/ loose	0.6025	18.6	30.8	1.84	0.082	0.049
Load Hampers/OWC	0.1302	18.6	13.1	1.84	0.193	0.025
Destination Delivery Unit						
Unload Bedload NMOs	0.2673	275.1	1.0	1.84	0.171	0.046
Unload loose in OTR	0.6025	37.2	30.8	1.84	0.041	0.025
Unload OWC	0.1302	37.2	13.1	1.84	0.096	0.013
TOTAL						\$0.498

Source: USPS-T-29, Appendix V, Pages 3 & 4 updated to remove assumption of 12.3 percent direct transportation from destination BMC to destination delivery unit.

III. POSTAL NETWORK COSTS MINUS CANDIDATE MAIL COSTS

Machinable parcel post: $\$.159 - \$.151 = \$.008$ = **.8 cents**
Nonmachinable parcel post: $\$.498 - \$.300 = \$.198$ = **19.8 cents**

MAIL PROCESSING COSTS AVOIDED BY
CARRIER ROUTE PRESORTED BOUND PRINTED MATTER

$\$25.445 \text{ per hour (wage rate)[1]} / 433 \text{ pieces per hour (productivity)[2]} = \0.0588

$\$0.0588 \text{ per piece} * 82\% \text{ (volume variability)[3]} = \0.0482

$\$25.445 \text{ per hour} / 4340 \text{ pieces per hour (productivity)[4]} = \0.0059

$\$0.0059 \text{ per piece} * 82\% = \0.0048

$\$0.0482 - \$0.0048 = \$0.0434$

$\$0.0434 * 1.536 \text{ (piggyback factor)[5]} = \0.067

Total test year carrier route presort savings = 6.7 cents.

1. FY 1998 test year wage rate. LR-H-146.
2. Sorting productivity for BPM pieces. Docket No. R84-1, USPS-T-16.
3. LDC 43 volume variability. USPS-T-12, Table 4.
4. Bundle sorting productivity. Witness Madison states in Exhibit USPS-16C, Docket No. R84-1 that carrier route presorted bound printed matter will incur the added cost of being sorted as a bundle at the destinating post office before reaching the carrier. Today, bound printed matter can be prepared as a bundle, in sacks, as machinable pieces, or on pallets (see Mail Preparation and Sortation section of the Domestic Mail Manual). I have no data to suggest that witness Madison's numbers are not still a good proxy with the current mix of preparation requirements. He assumed a productivity of 434 bundles per hour * 10 pieces per bundle for a total productivity of 4340 pieces per hour.
5. FY 1998 test year manual parcel sorting piggyback factor. LR-H-77.

REVENUE, PIECES, AND WEIGHT (RPW) VOLUME SUMMARY
GOVERNMENT FISCAL YEAR 1996

	<u>Book Revenue</u> <u>Adjusted</u> <u>Pieces</u>	<u>Alaska</u> <u>Bypass</u>	<u>OMAS</u>	<u>Grand</u> <u>Total</u>
Inter-BMC	66,223,149		1,819,574	68,042,723
Intra-BMC	46,007,028	2,032,838	0	48,039,866
DBMC	96,406,682		339,052	96,745,734
Total	208,636,859	2,032,838	2,158,626	212,828,323

Source: Fiscal Year 1996 Billing Determinants and Revenue, Pieces, and Weight Adjustment System (LR-H-43).

BMC PRESORTED PARCEL POST COST PER PIECE

Machinable BMC Presort Cost Summary

	<u># of hand.</u>	<u>(2) units/hr</u>	<u>(3) conv. fact.</u>	<u>(4) PB fact.</u>	<u>(5) \$ per op.</u>	<u>Cost</u>
Origin SCF						
Load Gaylord	1.0000	23.9	104.5	1.84	0.019	0.019
Origin BMC						
Unload Gaylord	1.0000	21.9	104.5	2.13	0.024	0.024
Crsdk Gaylord	1.0000	12.6	104.5	2.13	0.041	0.041
Load Gaylord	1.0000	23.9	104.5	2.13	0.022	0.022
Destination BMC						
Unload Gaylord	1.0000	21.9	104.5	2.13	0.024	0.024
Dump Gaylord	1.0000	11.9	104.5	2.13	0.043	0.043
D. Primary (Key)	1.0000	895.6	1.0	2.03	0.058	0.058
Label	1.0000				0.005	0.005
Secondary (scan)	1.0000	1433.3	1.0	2.03	0.036	0.036

1. Test Year 1998 Wage Rate (LR-H-146) = \$ 25.445
2. Productivity. USPS-T-29, Appendix V, page 15.
3. Conversion Factor. USPS-T-29, Appendix V, page 15.
4. Piggyback Factor. USPS-T-29, Appendix V, page 16.
5. Wage rate * piggyback factor / (productivity * conversion factor).

Nonmachinable BMC Presort Cost Summary

	<u># of hand.</u>	<u>(2) units/hr</u>	<u>(3) conv. fact.</u>	<u>(4) PB fact.</u>	<u>(5) \$ per op.</u>	<u>Cost</u>
Origin SCF						
Load NMOs Pallets	1.0000	23.9	26.3	1.84	0.075	0.075
Origin BMC						
Unload Pallets	1.0000	21.9	26.3	2.13	0.094	0.094
Crossdock Pallets	1.0000	12.6	26.3	2.13	0.163	0.163
Load NMOs Pallets	1.0000	23.9	26.3	2.13	0.086	0.086
Destination BMC						
Unload Pallets	1.0000	21.9	26.3	2.13	0.094	0.094

1. Test Year 1998 Wage Rate (LR-H-146) = 25.445
2. Productivity. USPS-T-29, Appendix V, page 15.
3. Conversion Factor. USPS-T-29, Appendix V, page 15.
4. Piggyback Factor. USPS-T-29, Appendix V, page 16.
5. Wage rate * piggyback factor / (productivity * conversion factor).