USPS-T-27

RECEIVED

JUL 10 3 12 PM '97

POSTAL RATE OCHMISSION 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 LESLIE M. SCHENK ON BEHALF OF UNITED STATES POSTAL SERVICE

TABLE OF CONTENTS

a

- ----

<u>PAGE</u>

CONTENTSi
LIST OF EXHIBITS ii
AUTOBIOGRAPHICAL SKETCH iii
I. PURPOSE OF TESTIMONY1
II. BUSINESS REPLY MAIL CHARACTERISTICS
III. BRM MAIL FLOWS4
 A. BRMAS-Qualified BRM Pieces
I. DATA COLLECTION8
II. SURVEY RESULTS
III. COST ESTIMATES12
IV. EXHIBITS
V. APPENDIX A: BRMAS Cost Survey - Data Collection and Processing
VI. APPENDIX B: BRMAS Cost Survey - Survey Forms and Instructions

Direct Testimony

of

Leslie M. Schenk

Autobiographical Sketch

My name is Leslie M. Schenk. I am a Senior Economist with Christensen Associates, which is an economic analysis and consulting firm located in Madison, Wisconsin. I have been employed at Christensen Associates since June, 1995. During my tenure at Christensen Associates, I have worked on many research projects for the U.S. Postal Service.

In 1982 I received a B. A. from SUNY College at Buffalo, with a major in economics and a minor in mathematics. I received an M.A. in economics, and an M.A. in mathematics (with a concentration in statistics) from Indiana University in 1984 and 1986, respectively. In 1995 I received a Ph.D. in economics from Michigan State University.

From 1985 to 1986 I was a research assistant on the economic forecasting modeling project at the Indiana University Business School. There I was responsible for quarterly economic forecasts for industry clients. From 1986 to 1989 I was a demand analyst for Indiana Bell Telephone Company. Among my duties there, I helped prepare analyses for rate case filings before the Public Service Commission of Indiana. I also provided in-house statistical consultation. From 1993 to 1995 I worked as a research assistant at the Institute for Public Policy and Social Research at Michigan

iii

•

State University. My research there was on nonprofit organizations. From 1983 to 1993, I taught numerous university economics, business statistics, and mathematics courses.

I recently presented testimony to the Postal Rate Commission on the costs of nonletter-size Business Reply Mail in Docket No. MC97-1. My previous research for the Postal Service also involved a number of in-field surveys to support Dockets No. MC95-1 and MC96-2.

I. Purpose of Testimony

1	The purpose of my testimony is to estimate the test year costs of
2	counting, rating, and billing for the Business Reply Mail (BRM) service, above
3	and beyond the costs already attributed to First-Class Mail (FCM). My estimates
4	were developed using current information on operating and accounting
5	procedures used for BRM. I will determine the test year per-piece costs for each
6	of the current BRM fee categories, and for advance deposit account
7	maintenance.
8	One purpose of my testimony is to estimate the test year volume-variable
9	per-piece costs of counting, rating, and billing for the Qualified category of
10	Business Reply Mail (QBRM). These costs serve as a basis for the 6-cent per-
11	piece fee for advance deposit account QBRM proposed by witness Needham
12	(USPS-T-39). My testimony also estimates the test year volume-variable per-
13	piece costs of counting, rating, and billing for the Other category of advance
14	deposit account Business Reply Mail, for which witness Needham proposes an
15	8-cent per-piece fee. My testimony also estimates the volume-variable per-piece
16	costs of counting, rating, and billing for non-advance deposit account BRM, for
17	which witness Needham proposes a 30-cent per-piece fee.
18	In part, my testimony is based upon an examination of the volume-
19	variable costs associated with the counting, rating, and billing for what is
20	currently denominated as the Prebarcoded category of advance deposit account

L

.

ĸ.

1 ZIP+4 barcode, and have gone through a qualification process. BRMAS-

qualified BRM currently pays a two-cent per piece fee, in addition to the regular
First-Class Mail postage.

BRMAS-qualified BRM recipients maintain an advance deposit account, with a balance sufficient to cover the projected postage due and per-piece fees for a specified future period (depending on average daily volume), and pay an annual advance deposit account fee (currently \$205).

8 Non-BRMAS advance deposit BRM pieces may or may not be automation 9 compatible or have a ZIP+4 barcode, but, like BRMAS-qualified BRM, have the 10 daily postage due deducted from an advance deposit account. Non-BRMAS 11 advance deposit BRM currently pays a ten-cent per piece fee, in addition to the 12 regular FCM postage.³

13 Non-advance deposit BRM pieces may or may not be automation compatible or barcoded. Non-advance deposit BRM recipients do not pay the 14 postage due and per-piece fees through an advance deposit account. These 15 16 pieces are delivered to the recipient upon payment of postage due, which is either (a) collected by the carrier delivering this mail or by box section clerks, or 17 18 (b) deducted from a Postage Due account. Mailers receiving relatively low volumes of BRM generally use non-advance deposit BRM. Non-advance deposit 19 20 BRM currently pays a 44-cent per piece fee, in addition to the regular FCM 21 postage.

³ With the exception of certain nonletter-size BRM, which currently qualifies for lower experimental per-piece fees as a result of Docket No. MC97-1.

III. BRM Mail Flows

1 To determine the counting, rating, and billing cost associated with QBRM 2 and BRM, it is necessary to focus on operations at the office of destination. At the destinating office, BRM currently is held out from the Incoming Primary 3 4 operation, and sent to either the BRMAS operation, or to a manual sortation 5 operation (usually in the Postage Due Unit or Box Section). These flows differ 6 from other nonpresort FCM, which, after sortation in the Incoming Primary 7 operation, is processed in an Incoming Secondary operation (either automated or manual), and is then sorted to address either in a Delivery Point Sequence (DPS) 8 operation or in a manual operation (e.g., cased by the carrier). 9

A. BRMAS-Qualified BRM Pieces

As shown in the flow chart in Exhibit USPS-27A, BRMAS-qualified BRM goes through the Incoming Primary operation, and then can be sorted to permit number⁴ (corresponding to a unique ZIP+4) in a BRMAS operation. Because the ZIP+4 is unique to a BRM recipient, this sort is equivalent to the level of sortation obtained in the DPS operation. These pieces avoid the Incoming Secondary distribution that other FCM pieces receive.

⁴ Each BRM recipient is required to have a separate BRM permit for each shape/rate element combination received.

1 BRMAS operations vary across facilities. The BRMAS program is run on either a Delivery Barcode Sorter (DBCS) or a Mail Processing Barcode Sorter 2 3 (MPBCS), as determined by the facility. In some cases, the BRMAS operation includes both "primary" and "secondary" sort schemes, in order to get all • 4 5 BRMAS-gualified mail finalized to permit number. For these facilities, all 6 BRMAS-qualified mail arrives at the BRMAS operation mixed; on a "primary" sort scheme, some is sorted to permit number (for the highest volume mailers), 7 and the rest is sorted to the secondary schemes. In the secondary sort 8 schemes, the mail is sorted to permit number for the rest of the BRMAS-9 10 qualified mail. At other facilities, BRM is sorted to BRMAS scheme on the 11 Incoming Primary operation, so the BRM receives only one handling in the 12 BRMAS operation.

For those pieces finalized in the BRMAS operation, the BRMAS program also performs counting and rating functions, and can provide a report for the BRM recipient of postage due (i.e., a bill). BRMAS does not deduct the postage due from the advance deposit account.

Even at facilities that sort BRM in a BRMAS operation, not all BRMASqualified mail gets finalized to permit number in the BRMAS operation. This results from operational limitations (*e.g.*, the number of bins available for sortation), pieces being rejected (*e.g.*, due to mechanical problems or piece characteristics), or diversion of some BRM to other mailstreams (*e.g.*, mixing

with other FCM that got distributed in a DPS operation).⁵ These residual pieces
are usually sorted, counted and rated manually in the Postage Due Unit.

Even when all BRMAS-qualified pieces for a mailer can be finalized in the BRMAS operation, verification and accounting activities associated with these pieces are done in the Postage Due Unit.

6 Currently, for the reasons given above and because many facilities do not 7 have BRMAS software, only 14 percent of BRMAS-qualified BRM is counted and 8 rated in a BRMAS operation (see USPS Library Reference H-179, Table 13). At 9 facilities without BRMAS operations, BRMAS-qualified BRM is counted, rated 10 and billed using a variety of methods, the most common method being 11 manually counting of each piece (see USPS Library Reference H-179, Tables 13, 12 16 and 18).

B. Non-BRMAS Advance Deposit BRM Pieces

In general, non-BRMAS advance deposit BRM pieces are diverted from the 13 First-Class Mail stream after the Incoming Primary operation, as shown in Exhibit 14 USPS-27A. These pieces avoid the Incoming Secondary distribution that other 15 FCM pieces receive. These pieces can receive sortation to the mailer in the 16 Incoming Primary or BRMAS operations, but are typically sorted manually in the 17 Postage Due Unit (see USPS Library Reference H-179, Table 13). In addition to 18 manual distribution, the Postage Due Unit operation includes counting, rating, 19 billing, and accounting functions. These pieces are then picked up at the 20

⁵ See Table 15, USPS Library Reference H-179.

Postage Due Unit by carriers or box section clerks for distribution to customer
 (see USPS Library Reference H-179, Table 4).

C. Non-Advance Deposit BRM Pieces

The manual or automation Incoming Secondary distribution operation is 3 avoided for non-advance deposit BRM, and the following mailflow is followed 4 5 instead: diversion to the Postage Due Unit, manual distribution, counting, rating, and billing functions at the Postage Due Unit, pick-up by carriers or box 6 section clerks, fee collection by carriers or box section clerks, and accountability 7 relief involving carriers or box section clerks (remitting fees collected) and 8 postage due unit clerks (for accepting fee collections, or for deductions from 9 Postage Due accounts). The distribution of collection methods currently used is 10 shown in Table 5, USPS Library Reference H-179. The mailflow for non-11 advance deposit BRM is shown in Exhibit USPS-27B. 12

D. Advance Deposit Accounts and BRM Permits

Other workload attributable to BRM is associated with the administration of the advance deposit accounts set up for BRMAS-qualified and non-BRMAS advance deposit mail recipients. This workload includes determining whether adequate funds are on deposit to cover the postage due for future mail received, notifying the mailer of inadequate funds, deducting daily postage due from the account, and the initial set up of the advance deposit account. These activities

are generally administered through the Postage Due Unit or the Business Mail
 Entry Unit (BMEU). An annual accounting fee is charged to cover these costs.
 Each Business Reply Mail recipient must obtain a permit to receive BRM.
 The administration of the BRM permit is similar to that of permits obtained for
 permit imprint mail of other classes.

IV. Data Collection

Two surveys were conducted to support the cost estimates derived in this 6 testimony. The BRM Practices Survey, which is discussed in detail in USPS 7 Library Reference H-179, collected data on BRM-related practices at 441 postal 8 facilities across the country. In addition to other results, this survey provides 9 national estimates of several variables used in my cost models: profiles of fee 10 collection methods for non-advance deposit BRM, delivery modes for advance 11 deposit BRM, and the percentages of non-BRMAS pieces (both advance and 12 13 non-advance deposit) receiving distribution to finer depth of sort on automation equipment. As a preliminary step in this survey, we visited several postal 14 facilities and viewed BRM-related operations. 15

The cost of BRMAS-qualified BRM was developed in part using the results of another survey done at selected postal facilities. This survey collected data on workload in BRMAS operations. At the time this survey was designed, I was informed that a new version of the BRMAS program would be implemented

nationally sometime during the test year,⁶ and that productivity under the new
program would be higher than the productivity realized under the version of
BRMAS currently being used. In this cost model, the costs associated with
BRMAS-qualified pieces, if a new BRMAS program were up and running in the
test year, would have been overestimated had I used the average productivity of
all sites currently using BRMAS.

7 Therefore, I developed a test year counting, rating, and billing cost 8 estimate for BRMAS-qualified BRM based on operations at postal facilities which 9 currently have relatively efficient BRMAS programs and whose average BRMAS 10 productivity is likely to be similar to the productivity level which could 11 reasonably be expected in an improved BRMAS program. Efficiency in this 12 context was quantified as counting and rating high volumes of BRM using 13 BRMAS.

Given the results of the BRM Practices Survey, I was able to identify four postal facilities using the BRMAS program to count and rate a significant volume of BRM (i.e., more than 14,000 BRMAS-qualified pieces sorted in the BRMAS operation on an average day). These sites were also identified as facilities which had made changes to the (national) BRMAS program to make it suit their local needs better. A fifth site with high BRMAS-counted volumes and which had made local changes to the BRMAS software (but which was not one of the

⁶ To my knowledge, the Postal Service has not yet developed a new version of the BRMAS program, and no longer expects to have a new version in place during the test year.

sites that had responded to the BRM Practices Survey) was identified by Postal
 Service personnel.

A two-week survey was conducted at these five sites; data were collected on workhours and volumes involved in all stages of distribution, billing, and accounting of BRM pieces processed using BRMAS software. These data were used to determine the average productivity of BRMAS operations across the five sample sites. The BRMAS Cost Survey is discussed in more detail in Appendix A.

By the time it was determined that a new BRMAS program would not be 9 operational during the test year, there was not enough time to do a survey to 10 11 determine the average BRMAS productivity at all facilities currently using 12 BRMAS. Therefore, I used the average productivity at these efficient sites in my 13 cost model. This means that the results of my cost model for BRMAS-gualified 14 BRM should be interpreted with care, but these results can be used to proxy the test year volume variable costs of BRMAS-qualified BRM, for the following 15 16 reasons. Given that the sample sites chosen are those that count and rate high 17 volumes of BRM, and given the limited number of facilities now using BRMAS to count and rate BRM, the productivity of these sample sites would have a big 18 19 effect on the average BRMAS productivity over all facilities currently using BRMAS. And because such a low percentage of all BRMAS-qualified BRM is 20 21 counted and rated in a BRMAS operation, the BRMAS productivity does not have as much influence on overall cost as does the productivity associated with 22

manually counting and rating this BRM (see description of cost estimates in
Section VI below for more details). In addition, these data are more current than

3 the workload data previously collected (for Docket No. R90-1)⁷.

4

V. Survey Results

Productivity estimates for distribution functions (sortation on the barcode 5 sorter) and additional BRMAS-related procedures (verification procedures and 6 7 handling of residual pieces not finalized in BRMAS operation, as described in Section III, Part A.) are shown in Exhibit USPS-27C, lines [5]-[6]. These 8 9 productivities represent the average number of pieces processed per hour for each of these two 'tasks' across all sample sites. The productivity reported in 10 11 line [5] for distribution functions has been adjusted by the volume variability for BCS operations (0.945). The productivity reported for additional workload (i.e., 12 verification of counts) in line [6] has been adjusted by the volume variability for 13 Business Reply/Postage Due (0.797), since these functions are performed by 14 Postage Due Unit personnel. 15

⁷ Because the sample facilities are the most efficient BRMAS users, and were selected to proxy the productivity under a new BRMAS program, the sample is not considered to be representative of the population of facilities using the current BRMAS program (with more variant levels of proficiency). Accordingly, no standard errors are reported for the productivity estimates presented here.

VI. Cost Estimates

1	The cost models presented here were built incorporating the mail flows
2	described above, as well as the average productivities developed from the
3	BRMAS Cost Survey.
4	The derivation of the cost estimate for BRMAS-qualified BRM pieces is
5	shown in Exhibit USPS-27C. The productivity associated with manual counting
6	and rating of BRM is included in the cost model for BRMAS-qualified BRM
7	because a percentage of this mail currently is not processed in the BRMAS
8	operation, ⁸ and a similar percentage is expected to receive such processing in
9	the test year. The total direct and indirect volume-variable cost associated with
10	BRMAS-qualified mail is a weighted average of the cost for BRMAS-sorted
11	pieces (with weight equal to the BRMAS coverage factor) and the cost for
12	manually-sorted pieces (with weight equal to 100 percent minus the BRMAS
13	coverage factor).9
14	The BRMAS coverage factor is the percentage of all BRMAS-qualified
15	pieces that are counted and rated in the BRMAS operation. The results of the
16	BRM Practices Survey indicate that 14.24 percent of all BRMAS-qualified BRM

⁸ See USPS Library Reference H-179, Table 13.

⁹ The automation coverage factor included in Docket No. R90-1 and R94-1 is not needed in this model, because the BRMAS coverage factor was determined from a representative sample of all Postal facilities (see USPS Library Reference H-179), and so takes into account the extent of automation at Postal facilities.

is counted and rated in the BRMAS operation. Since a new BRMAS program is 1 expected to be in place during the test year, the current BRMAS coverage 2 percentage is the applicable BRMAS coverage factor to use in this model, ceteris 3 paribus. However, a Prepaid Reply Mail (PRM) service has been proposed, with 4 reduced postage, a monthly accounting fee, and no per-piece fee (see USPS-T-5 32). This service would be advantageous for some high-volume BRMAS-6 qualified BRM recipients. If there is migration of BRMAS-qualified volumes to 7 PRM, the BRMAS coverage factor would change, which would affect the cost of 8 BRMAS-qualified BRM. According to witness Fronk's testimony, 66 percent of 9 BRMAS-gualified volume is projected to migrate to PRM. Multiplying the volume 10 of BRMAS-qualified mail counted and rated in the BRMAS operation by 34 11 percent, determining the percentage of all BRMAS-qualified mail, and weighting 12 across strata by total BRMAS-qualified volume (after 66 percent has migrated to 13 PRM), the resulting BRMAS coverage factor after this migration is 5.87 percent. 14 As shown in Exhibit USPS-27C, the attributable cost associated with a 15 BRMAS-gualified BRM piece, using a BRMAS coverage factor of 5.87 percent, is 16 \$0.0785. This cost includes all distribution in the BRMAS operation, as well as 17 additional piece-related functions performed on these pieces¹⁰. However, a BRM 18 piece processed at the BRMAS operation avoids the Incoming Secondary 19 operation. The cost of distribution in an automated Incoming Secondary 20

¹⁰ As discussed in Section III, Part A. above, piece-related functions are performed in the Postage Due Unit on BRMAS-processed BRM. These activities include verification of machine counts, pulling missorted or overweight pieces, and compiling all piece counts for a permit number from other mail streams.

operation for BRMAS pieces should be comparable to the cost for that operation
for a nonpresort barcoded First-Class Mail piece. That cost is \$0.0231, as
derived in USPS-T-25. Netting out this cost avoidance, the net volume-variable
cost of a BRMAS-gualified BRM piece is \$0.0554.

5 The only current BRMAS productivity data available are those from the 6 BRMAS Cost Survey, which represents the most efficient facilities, rather than 7 the average productivity across all facilities. These data do however represent 8 the best data available. This means that, assuming the current BRMAS 9 coverage rate continues in the test year, the estimated cost presented here is a 10 conservative estimate of the test year cost of counting, rating and billing 11 BRMAS-gualified BRM.

The cost derivations for non-BRMAS advance deposit BRM pieces are 12 shown in Exhibit USPS-27D. Two productivities affect the cost estimates for 13 non-BRMAS advance deposit BRM pieces: most pieces are counted and rated 14 manually, but some pieces get distribution on automation equipment (on 15 barcode sorters in the Incoming Primary operation, or in the BRMAS operation) 16 for a finer depth of sort. The productivity estimate used in this cost analysis is 17 that used in Docket No. R90-1, USPS-T-23; productivity of an essentially 18 manual operation such as this one does not change substantially over time, 19 since the activities do not change. The productivity has been adjusted for 20 volume variability, using the volume variability for Business Reply/Postage Due 21

of 0.797. The net attributable cost of a non-BRMAS advance deposit BRM
 piece is \$0.0701.

The cost derivation for non-advance deposit BRM is shown in Exhibit 3 USPS-27E. In addition to the distribution, rating, and billing costs that other 4 non-BRMAS BRM pieces incur, non-advance deposit BRM pieces incur costs 5 associated with postage and fee collection. These fees are either collected by 6 carriers or box section clerks, or are deducted from Postage Due accounts. The 7 distribution of fee collection methods was determined from BRM Practices 8 Survey results (USPS Library Reference H-179, Table 5). The net attributable 9 cost of a non-advance deposit BRM piece is \$0.2250. 10 Exhibits USPS-27G through 27I show the derivation of cost components 11

12 for the non-BRMAS and non-advance deposit BRM models.

13 The derivation of the cost for the maintenance of the advance deposit 14 account is shown in Exhibit USPS-27F. The productivity used in this model 15 was obtained from the results of the BRMAS Cost Survey. There is no reason 16 to believe that the workload associated with the advance deposit account would 17 differ between BRMAS-gualified and non-BRMAS accounts.

Appendix A: BRMAS Cost Survey – Data Collection and Processing

1	In order to estimate the productivities of various activities associated with
2	BRMAS-qualified BRM pieces, a survey of five sites was conducted in April-May,
3	1997. Over a period of two weeks, these sites recorded times spent by all
4	postal personnel working BRMAS-qualified pieces in all operations associated
5	with the sortation, counting, billing, and accounting of these pieces.

Selection of Sites

Sites were selected so that the resulting average productivity could be 6 used as a proxy for the productivity obtained with implementation of a new 7 BRMAS program nationwide. It was assumed that postal facilities which were 8 using the current BRMAS program to sort high volumes of BRMAS-gualified 9 pieces represented the most efficient facilities. Four sites were identified as 10 11 such from results of the BRM Practices Survey (USPS Library Reference H-179) and an additional high volume BRMAS user was identified by Postal Service 12 personnel, as described earlier in my testimony. 13

The other criterion used to select sample sites was whether the facilities had made individual changes to the (national) BRMAS program to make the program more efficient for local use. For example, one of the sample sites had adapted the program so that machine counts could be downloaded into locallydesigned billing software. Another site had made an equipment change to make bill printing possible without stopping machine processing.

Data Collection, Entry and Processing

Time and volumes by operation for all employees were collected on a daily basis, using the forms and instructions shown in Appendix B. These forms were returned to Christensen Associates, along with End-of-Run (EOR) reports from the BRMAS program for all schemes run, and other supporting documents. The sites were sampled over two-week periods, with staggered start dates to accommodate training schedules. Training was done over the telephone for two sites, and in person for the other three sites.

Completed survey forms were checked upon receipt, and entered into an 8 Excel spreadsheet. All calculations were done in Excel. Average daily hours and 9 volumes for each "task" (machine sortation and additional workload) were 10 computed per site. Productivity for each task for each site was calculated as 11 the ratio of average daily hours per task to the average daily volume processed 12 in each task. The overall average productivity for each task is the weighted 13 average of productivities across sites, with weights equal to the average daily 14 BRMAS-gualified volume processed. 15

EXHIBITS

- Exhibit A: Flow Chart -- Advance Deposit BRM
- Exhibit B: Flow Chart Non-Advance Deposit BRM
- Exhibit C: Determination of Attributable Cost of BRMAS-Qualified BRM
- Exhibit D: Determination of Attributable Cost of Non-BRMAS Advance Deposit BRM
- Exhibit E: Determination of Attributable Cost of Non-Advance Deposit BRM
- Exhibit F: Cost of Oversight and Maintenance of BRM Advance Deposit Accounts
- Exhibit G: Cost of BRM Pick-up at Postage Due Unit
- xhibit H: Collection Cost for Non-Advance Deposit BRM -- Carrier
- xhibit I: Collection Cost for Non-Advance Deposit BRM Box Section



*BRMAS and non-BRMAS advanced deposit BRM have the same flow pattern, but may differ in sorting and delivery operations.



Exhibit USPS-27C: Determination of Attributable Costs of BRMAS-qualified BRM Pieces

BRMAS coverage factor (net of rejects)	5.87% [1]
Average productive hourly wage rate for clerk/mailhandler	\$25,45 [2]
Average of MPBCS and DBCS Piggyback factors MODS 18 Business Reply Piggyback factor	2.077 [3] 1.477 [4]

			Direct &
	Pieces	Direct	Indirect
	Per Hour	Cost/Piece	Cost/Piece
Marginal BRMAS processing net productivity	8,207 [5]	\$0.0031 [8]	\$0.0064 [11]
Marginal BRMAS productivity, Postage Due Unit activities	9,361 [6]	\$0.0027 [9]	\$0.0040 [12]
Marginal Manual Sortation Productivity, Postage Due Unit	454 [7]	\$0.0560 [10]	\$0.0827 [13]
Weighted cost per piece (direct & indirect)			\$0.0785 [14]
Cost avoidance (Inc. Sec. for automation compatible FCM piec	ce)		(\$0.0231) [15]
Net direct and indirect weighted cost of BRMAS processing			\$0.0554 [16]

Footnotes (all piggyback factors are from LR-H-77, volume variabilities from LR-H-113):

- [1] Percentage of BRMAS pieces finalized to mailer using BRMAS for all sites using BRMAS software to sort BRM (LR-H-179, Table 13), adjusted for migration to PRM (see text for description of adjustment process)
- [2] FY98 before cost, disaggregated wage for other mail processing (see LR-H-146)
- [3] Average of FY98 Cost Pool Disaggregate MPBCS and DBCS piggyback factors = (1.719+2.434)/2
- [4] FY98 Business Reply cost pool piggyback factor
- [5] Pieces processed in BRMAS operation (TPH) per hour 1997 (fr. BRMAS Study); marginal productivity = productivity /0 945 (volume variability for BCS)
- [6] BRMAS pieces (TPH) per additional hour 1997; marginal productivity = productivity/0.797 (volume variability for Business Reply/Postage Due)
- [7] Productivity fr. R90-1; marginal productivity = productivity/0.797 (volume variability for Business Reply/Postage Due)
- [8] [2] divided by [5]
- [9] [2] divided by [6]
- [10] [2] divided by [7]
- [11] [3] * [8]
- [12] [4]*[9]
- [13] [4] * [10]
- [14] ([1] *([11]+[12])) + ([13] * (1-([2]))
- [15] Cost of incoming secondary, automation basic 1C presort (from USPS-T-25)
- [16] [14] +[15]

Exhibit USPS-27D:

Determination of Attributable Costs of Non-BRMAS Advance Deposit BRM

Manual Clerical Processing Marginal Productivity at Postage Due Unit	454 [1]
Average Productive Hourly Wage Rate (Clerks/Mailhandlers)	\$25.45 [2]
MODS 18 Business Reply Piggyback factor	1.477 [3]
Average of MPBCS and DBCS Piggyback factors	2.077 [4]
Per piece direct cost	\$0.0560 [5]
Per piece direct and indirect cost	\$0.0827 [6]
Per piece Cost Avoidance, Incoming Secondary	(\$0.0231) [7]
Net incremental direct & indirect cost (clerical processing)	\$0.0597 [8]
Direct and indirect cost of BRM pick-up (at Postage Due Unit)	\$0.0098 [9]
Additional cost BCS Sort (to obtain more depth of sort)	\$0.0007 [10]
Total Non-BRMAS Advance Deposit BRM Attributable Costs	\$0.0701 [11]

Footnotes (all piggyback factors are from LR-H-77, volume variabilities from LR-H-113):

- [1] Productivity fr. R90-1; marginal productivity = productivity / 0.797 (volume variability for Business Reply/Postage Due)
- [2] FY98 before cost, disaggregated wage for other mail processing (see LR-H-146)
- [3] FY98 Business Reply cost pool piggyback factor
- [4] Average of FY98 Cost Pool Disaggregate MPBCS and DBCS piggyback factors = (1.719+2.434) / 2
- [5] [2] / [1]
- [6] [5] * [3]
- [7] Cost of incoming secondary, automation basic 1C presort (from USPS-T-25)
- [8] [6] + [7]
- [9] see Exhibit USPS-T-27G
- (using productivity for BRMAS as proxy); ([wage] / BRMAS pieces per hour) *volume variability for BCS * % BCS sort
 * average barcode sorter piggyback factor = ([2] / 8207) * 0.945 * 0.115 * ((1.719+2.434)/2); % BCS sort from LR-H-179, Table 13
- [11] [8] + [9] + [10]

)

Exhibit USPS-27E: Determination of Attributable Costs of Non-Advance Deposit BRM

Carrier Delivery Related Cost	\$0.8770 [1]
Box Section Clerk Related Cost	\$0.6863 [2]
% Fee Collection Through Carrier	12.3% [3]
% Fee Collection Through Box Section	8.4% [4]
% Fee Collection Through Postage Due Account	79.3% [5]
Weighted Delivery related cost	\$0.1652 [6]
Clerical Processing Cost at Postage Due Section	\$0.0597 [7]
Additional BCS sort (for non-advance deposit)	\$0.0001 [8]
Total Attributable Cost of Non-advance Deposit BRM	\$0.2250 [9]

Footnotes (all piggyback factors are from LR-H-77, volume variabilities from LR-H-113): [1] See Exhibit USPS-T-27H [2] See Exhibit USPS-T-271 [3] LR-H-179, Table 5 [4] Id. [5] Id. [6] ([1] * [3]) + ([2] * [4]) + (0 * [5]) [7] See Exhibit USPS-T-27D [8] (using productivity for BRMAS as proxy); ([wage] / BRMAS pieces per hour) *volume variability for BCS * % BCS sort * average barcode sorter piggyback factor = ([2] / 8207) * 0.945 * 0.115 * ((1.719+2.434)/2); % BCS sort from LR-H-179, Table 13 [9] [6] + [7] + [8] Exhibit USPS-27F:

Cost of Oversight and Maintenance of BRM Advance Deposit Accounts

Clerk/Mailhandler Productive Hourly Wage Rate	\$25.45 [1]
Total Workhours(per account; two weeks)	0.28 [2]
Total Direct Cost	\$7.14 [3]
FY98 Piggyback factor for Accounting/Auditing Cost Pool	1.492 [4]
Total Direct and Indirect Cost	\$10.65 [5]
Annualized	\$276.93 [6]

ootnotes (all piggyback factors are from LR-H-77):

[1] FY98 before cost, disaggregated wage for other mail processing (see LR-H-146)

- [2] 1997 BRMAS Study
- [3] [1] * [2]
- [5] [3] * [4]
 [6] [5] * 26 periods of two weeks

Exhibit USPS-27G: Cost of BRM Pick-up at Postage Due Unit

Piggyback Factor for Business Reply	1.477 [1]
Piggyback Factor for total 1C City Delivery	1.315 [2]
Productive hourly wage rate for City carriers	\$26.08 [3]
Productive hourly wage rate for Clerks/Mailhandlers	\$25.45 [4]
Proportion of BRM picked up by carriers	20.70% [5]
Proportion of BRM picked up by box section clerks	79.30% [6]

					Direct &	
			Pieces /	Direct	indirect	
	Volume	Workhours	Workhour	Cost/Piece	Cost/Piece	
BRM picked up by carriers	1,414,026	454.04	3,114	\$0.0084	\$0.0110	[7]
BRM picked up by clerks	1,900,580	477.46	3,981	\$0.0064	\$0.0094	[8]

Weighted Cost Per Piece 3,314,606

\$0.0072 \$0.0098 [9]

Footnotes (all piggyback factors are from LR-H-77):

[1] FY98 MODS18 - Business Reply piggyback factor

[2] FY98 City Delivery Carrier Piggyback Factor -- 1C

[3] FY 98 Productive Hourly Wage Rate for city carriers (see LR-H-12)

[4] FY98 before cost, disaggregated wage for other mail processing (see LR-H-146)

[5] LR-H-179, Table 4

[6] LR-H-179, Table 4

[7] [3] * (workhours/volume) * [2]

[8] [4] * (workhours/volume) * [1]

[9] [5] * [7] + [6] * [8]

Exhibit USPS-27H: Collection Cost for Non-Advance Deposit BRM -- Carrier

Productive hourly wage rate for City carriers	\$26.08 [1]
Piggyback Factor for total 1C City Delivery	1.315 [2]

	BRM				
	Volume	Workhours	Pieces /	Direct Cost	Direct & Indirect
Work Element	(Pieces) [3]	[4]	Workhour [5]	Per Piece [6]	Cost / Piece [7]
Travel To/From Postage Due Section	1414026	454.04	3,114	\$0.0084	\$0.0110
Examine and sign due bill (Form 3582-B)	96372	306.31	315	\$0.0829	\$0.1090
Collect From Customer	94125	1359.38	69	\$0.3767	\$0.4954
Turn in Postage	94125	355.82	265	\$0.0986	\$0.1297
Accept Collections	116276	447.24	260	\$0.1003	\$0.1319
Carrier Collection Cost for Non-Advance Deposit BRI	N			\$0,6669	\$0.8770

}

'n

Footnotes (all piggyback factors are from LR-H-77):

[1] FY 98 Productive Hourly Wage Rate for city carriers (see LR-H-12)

[2] FY98 City Delivery Carrier Piggyback Factor -- 1C

[3] Exhibit USPS-23H, R90-1, page 1

[4] Id.

[5] [1]/**[2**]

[6] [1] / [3]

[7] [4] * [2]

Ł

Exhibit USPS-27I: Collection Cost for Non-Advance Deposit BRM -- Box Section

Productive hourly wage rate for Clerks/Mailhandlers	\$25.45 [1]
Piggyback Factor for Business Reply	1.477 [2]

	BRM Volume	Workhours	Pieces /	Direct Cost	Direct & Indirect
Work Element	(Pieces) [3]	[4]	Workhour [5]	Per Piece [6]	Cost / Piece [7]
Travel To/From Postage Due Section	1900580	477.46	3981	\$0.0064	\$0.0094
Examine and sign due bill (Form 3582-B)	30569	100.79	303	\$0.0839	\$0.1239
Prepare Call Slip and Place in Lock Box	30569	90.95	336	\$0.0757	\$0.1118
Collect From Customer	29535	114.68	258	\$0.0988	\$0.1459
Turn in Postage	25935	103.93	250	\$0.1020	\$0.1506
Accept Collections	116276	447.24	260	\$0.0979	\$0.1446
Box Section Clerk Attributable Delivery Related Cost				\$0.4646	\$0.6863

Footnotes (all piggyback factors are from LR-H-77):

- [1] FY98 before cost, disaggregated wage for other mail processing (see LR-H-146)
- [2] FY98 MODS18 Business Reply piggyback factor
- [3] Exhibit USPS-23H, R90-1, page 2
- [4] Id.
- [5] [3] / [4]
- [6] [1]/[3]
- [7] [4] * [2]

Appendix A: BRMAS Cost Survey - Data Collection and Processing

In order to estimate the productivities of various activities associated
 with BRMAS-qualified BRM pieces, a survey of five sites was conducted in
 April-May, 1997. Over a period of two weeks, these sites recorded times
 spent by all postal personnel working BRMAS-qualified pieces in all operations
 associated with the sortation, counting, billing, and accounting of these pieces.

Selection of Sites

Sites were selected so that the resulting average productivity could be 6 used as a proxy for the productivity obtained with implementation of a new 7 BRMAS program nationwide. It was assumed that postal facilities which were 8 using the current BRMAS program to sort high volumes of BRMAS-qualified 9 pieces represented the most efficient facilities. Four sites were identified as 10 such from results of the BRM Practices Survey (USPS Library Reference H-179) 11 and an additional high volume BRMAS user was identified by Postal Service 12 personnel, as described in the main text of this library reference. 13

The other criterion used to select sample sites was whether the facilities had made individual changes to the (national) BRMAS program to make the program more efficient for local use. For example, one of the sample sites had adapted the program so that machine counts could be downloaded into locallydesigned billing software. Another site had made an equipment change to make bill printing possible without stopping machine processing.

Data Collection, Entry and Processing

Time and volumes by operation for all employees were collected on a daily basis, using the forms and instructions shown in Appendix B. These forms were returned to Christensen Associates, along with End-of-Run (EOR) reports from the BRMAS program for all schemes run, and other supporting documents. The sites were sampled over two-week periods, with staggered start dates to accommodate training schedules. Training was done over the telephone for two sites, and in person for the other three sites.

Completed survey forms were checked upon receipt, and entered into an 8 9 Excel spreadsheet. All calculations were done in Excel. Average daily hours and volumes for each "task" (machine sortation and additional workload) were 10 computed per site. Productivity for each task for each site was calculated as 11 12 the ratio of average daily hours per task to the average daily volume processed 13 in each task. The overall average productivity for each task is the weighted average of productivities across sites, with weights equal to the average daily 14 BRMAS-qualified volume processed. 15

Inputs obtained from Postal Service for use in BRM cost estimates (all FY98)

- -

Wage rates:	Before cost, disaggregated wage for other mail processing Productive Hourly Wage Rate for city carriers	Input \$25.445 \$26.083	Source LR-H-146 LR-H-12
Piggyback Factors:	MPBCS	1.719	LR-H-77
	DBCS	2.434	LR-H-77
	MOD 18 Business Reply	1.477	LR-H-77
	Accounting/Auditing Cost pool	1.492	LR-H-77
	City Delivery Carrier Piggyback Factor 1C	1.315	LR-H-77
Cost Avoidance:	Automation basic presort incoming secondary cost (in cents)	2,3079	USPS-T-25
Volume variabilities:	BCS	0.945	LR-H-113
	Business Reply/Postage Due	0.797	LR-H-113

7/7/97

__ __ __

Appendix B - Survey Forms and Instructions

•

_

- -

Appendix B, USPS-T-27

Processing BRM with BRMAS Software -- Time & Volume Report

Site: _____

1

Tour Supervisor: _____ Tour #

Date: _____

This form should be completed by the tour supervisor. Please include all processing of BRM on barcode sorters using BRMAS software. Enter hours for each employee engaged in BRMAS-related activities on a separate line, and also provide tour totals.

	Workhours					
Employee	Sortation of BRM using BRMAS software	Printing of BRMAS bills/reports; attaching bills to pieces	Moving Sorted BRM to Postage Due Unit or Box Section	BRMAS software setup	Convert BCS back to non- BRMAS scheme	Other (please specify)
1						
2						
3						
4						
Total						

1

Total time to run all BRMAS schemes: _____

ì

Downtime in BRMAS processing:

Provide the following volumes of BRM processed using BRMAS software.

	Volume (number of pieces)
BRM finalized to mailer	
BRM sorted to "overflow" or mixed bins (multiple mailers)	
BRM sorted to reject bin	
Number of customer bills printed (if applicable)	

Instructions for completing the form: "Processing BRM with BRMAS Software – Time and Volume Report"

A. General

On the "BRM Processing with BRMAS Software" form, record the volumes and associated workhours related to automated BRM processing (sorting and counting) using BRMAS software. Data included on this form should be collected for all operations using BRMAS software to sort and count BRM at your facility.

This form should be filled out by a supervisor familiar with BRM processing using BRMAS software.

Your office will record volumes and workhours on a daily basis, for a two-week study period, beginning on April 8 and ending April 21, 1997.

In addition to completing the form, please provide a copy of all BRMAS activity reports on a daily basis.

B. Instructions for completing the form each day

- 1. Complete the general information at the top of the form.
- Maintain a continuing record of time spent by all personnel involved in processing BRM at any barcode sorter operation using BRMAS software. Enter the total time per tour in the designated spot on the form. Use whole hours or fractions of hours converted to decimal equivalent. For example: 5 hours and 30 minutes = 5.50 hours.

Workhours should reflect total workhours for the operation, such as loading and feeding mail into the barcode sorter, as well as allied labor time for sweeping, traying, strapping, and moving mail to the Postage Due Unit. Also include supervisory time as well. Do not include time spent completing this form.

- 3. At the end of each tour of duty, record on the form the total number of pieces sorted by barcode sorters using BRMAS software, based on activity or end-of run reports generated by the BRMAS software. Note that you need to differentiate between number of pieces finalized to mailer, sorted to the reject bin, and sorted to "Overflow" bins. "Overflow" bins refer to those bins to which multiple mailers' pieces are sorted (that is, pieces that will be finalized in an operation other than BRMAS).
- 4. If any entry requested on the form is not applicable, please mark N/A (not applicable).
- 5. Time spent on collecting data for the survey and to complete the data forms should not be included in the workhours reported.

6. Enclose with each day's survey forms a copy of all activity or end-of-run report generated by the BRMAS software.

If you have any questions concerning this survey, please contact us at the telephone number given below. The data you will be collecting are important to the Postal Service's rate making efforts. As such, we need to receive your survey results in an expeditious manner. Please return all survey forms and copies of activity reports as follows:

4/8 - 4/12: Fax or Express Mail each day's results 4/13 - 4/21: Fax or Priority Mail each day's results

> Leslie Schenk Christensen Associates 4610 University Avenue Suite 700 Madison, WI 53705-2164

> > Phone: (608) 231-2266 Fax: (608) 231-2108

Appendix , USPS-T-27

BRMAS-rated BRM Counting/Billing -- Time & Volume Report

Site:

Tour Supervisor: _____

Tour # _____

Date: _____

This form should be completed by the tour supervisor. Please include all activities associated with counting and billing of BRMAS-rated BRM. Enter hours for each employee engaged in these activities on a separate line, and also provide tour totals.

	Workhours					
Employee	Check for missorts and overweight pieces or verify BRMAS report counts; adjusting bills for discrepancies	Manually sorting, counting and rating BRMAS- rated pieces	Prepare statement or due bill to mailer	Record keeping of daily activity	Notifying mailer of low balance in advance deposit account (calls or notes)	Other (please specify)
1						
2						
3						
4						
Total						

Provide the following volumes of BRMAS-rated BRM.

	Volume (number of pieces)	Reason BRMAS counts/bills not used (if applicable)		
BRM pieces for which BRMAS reports were used for counts				
BRMAS-rated pieces manually counted				
BRM pieces for which BRMAS bills were used				
BRMAS-rated pieces manually billed				

BRMAS Survey Instructions for completing the form "BRMAS-rated BRM Counting and Billing, Time & Volume Report"

A. General

On the form "BRMAS-rated BRM Counting and Billing, Time & Volume Report", record volumes and associated workhours related to procedures for sortation, counting, and billing of BRMAS-rated mail done by the Postage Due Unit or Box Section. Data reported on this form should be collected for all personnel from all tours involved in manually processing BRMAS-rated BRM at the Postage Due Unit or Box Section at your facility.

No short-paid mail should be included in these figures. Only volumes and workhours associated with BRMAS-rated BRM (not all BRM) should be reported.

Your office will record the information requested on the form for a two-week survey period, April 8 - April 21, 1997.

B. Specific Instructions for completing the form

- 1. Complete the general information at the top of the form.
- Maintain a continuing record of time spent for each one of the work elements listed on the form for all personnel involved with handling BRMAS-rated BRM. Workhours reported should be <u>only those associated with BRMAS-rated pieces</u>, <u>not all BRM</u>.
- 3. At the end of the tour of duty, record on the form the total time spent and the number of BRMAS-rated pieces handled for each of the work elements as applicable. Use minutes or fractions of minutes to be converted to decimal equivalent. For example:

5 minutes and 30 seconds = 5.50 minutes

4. Individual Questions on the form:

Item 1. Checking for accuracy of BRMAS reports – If BRMAS reports/bills accompany bundles of sorted BRM, enter the time involved in re-counting, checking for and adjusting for heavy pieces and mis-sorts.

Item 2. Manually counting & rating BRMAS-rated pieces – Include any workhours used to manually count and rate BRMAS-rated pieces (instead of using machine counts from BRMAS activity reports). These would include any pieces from the reject bin, from overflow bins (pieces not sorted to customer by the barcode sorters) or pieces for mailers not included in the BRMAS software runs (because of low volume, for example).

Item 3. Preparation of Due Bill or Statement – if bills generated by BRMAS software are not used. These include bill generated using meter strips, an IRT, a hand-written 3582-A, entering piece counts into the PERMIT system and printing a bill/statement, entering information into a computer to generate a bill to be attached to the BRM bundle, etc. Any workhours associated with activities involved with creating a statement that will be given to the mailer regarding the day's BRM charges should be included here.

Item 4. Record keeping of daily BRM activity by mailer – This includes writing in manual logs or data entry (if other than for generating a daily bill) if accounting is done on a computer.

item 5. Notifying mailer of low balance in advance deposit account – Include any time spent on the phone or writing reminders for telling a mailer that more funds are needed in their account.

- 5. In the bottom table on the form, please record volumes of BRMAS-rated pieces for each day of the survey. Specifically, we need you to differentiate between BRMAS-rated pieces which were manually counted and rated, or billed by personnel in your unit, and volumes of BRMAS-rated pieces which were counted and billed using BRMAS activity reports and BRMAS-generated customer statements. If BRMAS activity reports or customer statements/bills were not used, please explain why (for example, "we don't receive customer bills from mail processing", "counts were for pieces from reject bins").
- 6. If any entry required on the form is not applicable, please mark N/A (not applicable).
- 7. Time spent on collecting data for this survey and completing the survey forms should not be included in the survey.

If you have any questions concerning this survey, please contact us at the telephone number given below. The data you will be collecting are important to the Postal Service's rate making efforts. As such, we need to receive your survey results in an expeditious manner. Please return all survey forms as follows:

4/8 - 4/12: Fax or Express Mail each day's results 4/13 - 4/21: Fax or Priority Mail each day's results

> Leslie Schenk Christensen Associates 4610 University Avenue Suite 700 Madison, WI 53705-2164 Phone: (608) 231-2266 Fax: (608) 231-2108