

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

POSTAL RATE AND FEE CHANGES, 2001

Docket No. R2001-1

DIRECT TESTIMONY
OF
LESLIE M. SCHENK
ON BEHALF OF THE
UNITED STATES POSTAL SERVICE

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AUTOBIOGRAPHICAL SKETCH

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

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Much of my work for the Postal Service has involved statistical studies of data collection systems and mail characteristics, and the development of engineering cost models of mail processing. I have presented testimony and provided supporting materials before the Postal Rate Commission in three prior cases. In Docket No. MC99-1, I presented direct testimony on the cost of counting, rating, and billing nonletter-size Business Reply Mail. In Docket No. R97-1, I presented direct testimony on the cost of counting, billing, and rating Business Reply Mail and rebuttal testimony on nonprofit costs and volumes. I presented direct testimony in Docket No. MC97-1 on the costs of nonletter-size Business Reply Mail.

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In 1982, I received a B.A. from SUNY College at Buffalo, with a major in economics and a minor in mathematics. I received a M.A. in economics and a 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.

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From 1985 to 1986, I was a research assistant on the economic forecasting modeling project at the Indiana University Business School. There I

1 was responsible for quarterly economic forecasts for industry clients. From 1986
2 to 1989, I was a demand analyst for Indiana Bell Telephone Company. Among
3 my duties there, I helped prepare analyses for rate case filings before the Public
4 Service Commission of Indiana and I provided in-house statistical consultation.
5 From 1993 to 1995, I worked as a research assistant at the Institute for Public
6 Policy and Social Research at Michigan State University. My research there was
7 on nonprofit organizations. From 1983 to 1993, I taught numerous economics,
8 business statistics, and mathematics courses.

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ASSOCIATED LIBRARY REFERENCES

2 The following Library References are associated with or sponsored in my
3 testimony:

USPS LR-J-58: First-Class, Periodicals, and Standard Mail Weight Studies

4 This library reference contains printed and electronic documentation of the
5 spreadsheets and programs used to develop test year cost by weight
6 increments for First-Class, Periodicals, and Standard Mail. This library
7 reference updates previous studies sponsored by witness Daniel (USPS-
8 T-28/R2000-1; USPS-LR-I-91, USPS-LR-I-92, and USPS-LR-I-93).
9 Witnesses Robinson (USPS-T-29), Taufique (USPS-T-34), Hope (USPS-
10 T-31), and Moeller (USPS-T-32) use these cost estimates in developing
11 rates for First-Class, Periodicals, Standard ECR, and Standard rates,
12 respectively.

13 This library reference also documents the analysis used to develop two
14 test year cost differentials for Standard mail: an estimate of the flat/parcel
15 cost differential, and an estimate of the cost differences due to differences
16 in presorting and drop shipment. These analyses update previous
17 analyses sponsored by witness Crum (USPS-T-27/R2000-1, Attachment
18 F). Witness Moeller (USPS-T-32) uses these estimates to develop the
19 Standard Regular rate design.

20 This library reference also documents the development of the volume
21 distributions by destination entry and weight increment for Standard ECR
22 mail. Witness Hope (USPS-T-31) uses these volume distributions in
23 developing the Standard ECR rate design.

USPS LR-J-59: Development of ECR Mail Processing Saturation Savings

24 This library reference contains printed and electronic documentation of the
25 spreadsheets and programs used to develop ECR mail processing
26 saturation savings. This study updates a previous study sponsored by
27 witness Daniel (USPS-T-28/R2000-1, USPS-LR-I-96). Witness Hope
28 (USPS-T-31) uses these cost savings in developing ECR rates.

USPS LR-J-100: Pallet Cost Analysis Spreadsheet

29 This library reference contains printed and electronic documentation of the
30 spreadsheet used to calculate the test year cost differential between
31 Periodical flats mail prepared in sacks and on pallets. Witness Taufique
32 (USPS-T-34) uses this estimate in developing Periodicals rates.

USPS LR-J-113: Parcel Post Weight Study

1 This library reference contains documentation of the study conducted to
2 estimate volumes of permit imprint parcel post mail by pound step and
3 entry discount. Witness Kiefer (USPS-T-33) uses the results of this study
4 in developing Parcel Post rates.

5 USPS LR-J-117: Development of Delivery Costs by Rate Element for First-Class
6 and Standard Mail

7 This library reference contains printed and electronic documentation of the
8 spreadsheets and programs used to develop estimates of delivery costs
9 by rate element for First-Class and Standard Mail. This study updates a
10 previous study done by witness Daniel (USPS-T-28/R2000-1, USPS-LR-I-
11 95). The results of this study are used by witness Miller (USPS-LR-J-60)
12 in calculating letters mail processing costs, and in USPS-LR-J-58 to
13 develop First-Class and Standard Mail costs by weight increment.

USPS LR-J-118: Cost Analysis for Bundle Breakage Reduction

14 This library reference contains printed and electronic documentation of the
15 spreadsheets containing the test year cost savings associated with a 25
16 percent reduction in bundle breakage for First-Class, Periodicals, and
17 Standard mail flats. Witness Patelunas (USPS-T-12) incorporates these
18 estimates as test year final adjustments.

19 USPS LR-J-119: Cost Analysis for LOT Preparation of Periodicals Carrier Route
20 Basic Mail

21 This library reference contains printed and electronic documentation of the
22 spreadsheet used to develop the test year cost savings associated with
23 required line-of-travel preparation for Periodicals Carrier Route Basic Mail.
24 This study updates a previous study presented in USPS-LR-I-307/R2000-
25 1. Witness Patelunas (USPS-T-12) incorporates these estimates as test
26 year final adjustments.

1 **I. PURPOSE AND SCOPE**

2 The purpose of my testimony is to estimate the following:

- 3 • Test year cost savings resulting from a 25 percent reduction in
4 bundle breakage rates for flats mail,
- 5 • Test year cost savings resulting from required line-of-travel (LOT)
6 preparation for Periodicals Carrier Route Basic flats,
- 7 • Test year cost differential between Periodicals flats mail prepared
8 on pallets and in sacks.

9 Witness Patelunas (USPS-T-12) incorporates the cost savings for the 25
10 percent reduction in bundle breakage and the required LOT preparation for
11 Periodicals Carrier Route Basic flats as test year final adjustments. Witness
12 Taufique (USPS-T-34) uses the cost differential estimate for palletized
13 Periodicals flats in support of the Periodicals rate design. The results presented
14 in this testimony include only cost savings associated with the changes described
15 here.

16 In my testimony I also sponsor the following analyses:

- 17 • Development of costs by weight increment for First-Class,
18 Periodicals, and Standard Mail, which are used in the rate design
19 for each of those mail classes.
- 20 • Development of estimates for the parcel/flat cost differential and for
21 the cost difference due to differences of presort and drop shipment
22 for Standard Mail.
- 23 • Development of volume distributions by destination entry and
24 weight increment for Standard ECR mail.
- 25 • Development of ECR mail processing saturation savings, which is
26 used in the Standard ECR rate design.

- 1 • Development of delivery costs by rate element for First-Class and
- 2 Standard Mail, which are used in the rate design for those mail
- 3 classes.

- 4 • Development of weight distributions for Parcel Post mail, which is
- 5 used in the Parcel Post rate design.

6 **II. REDUCTION IN BUNDLE BREAKAGE**

7 The purpose of this section of my testimony is to report estimates of test

8 year mail processing cost savings associated with a 25 percent reduction in

9 bundle breakage rates for flats mail. The methodology used to develop these

10 cost estimates is summarized below, and is fully documented in USPS-LR-J-118.

11 The cost savings estimates are presented in Table 1 below.

| Table 1: Test Year Mail Processing Cost Savings Associated with a 25 Percent Reduction in Flats Bundle Breakage Rates | |
|--|-------------------------------------|
| <u>Class</u> | <u>Mail Processing Cost Savings</u> |
| First-Class Presort | \$118,979 |
| Periodicals – Outside County | \$7,045,805 |
| Periodicals – Within County | \$829,387 |
| Standard (all except ECR) | \$5,427,504 |
| Standard ECR | \$2,783,377 |
| Source: USPS-LR-J-118 | |

12 The first step in developing these cost savings estimates for First-Class

13 Presort, Periodicals Outside County, and Standard Mail is to modify the flats cost

14 models developed by witness Miller (USPS-T-24, USPS-LR-J-61) to exclude

15 piggyback factors. As a result, the modified flats cost model calculates the test

16 year unit mail processing costs by rate element without piggyback factors and

17 with current bundle breakage rates. The next step in the process is to change

18 the bundle breakage rates in the modified flats cost model to reflect a 25 percent

19 reduction in breakage rates. After this change, the modified flats cost model then

1 calculates the test year unit mail processing cost by rate element for the reduced
 2 bundle breakage rates.

3 Then the unit cost savings associated with the bundle breakage reduction
 4 are calculated. For each rate element, the test year unit mail processing costs
 5 (without piggyback factors and with the reduced bundle breakage rates) are
 6 subtracted from the test year unit mail processing costs (without piggyback
 7 factors and with current bundle breakage rates). This step results in estimated
 8 unit cost savings by rate element for the reduced bundle breakage rates. The last
 9 step in the process is to multiply the unit cost savings by the test year volumes
 10 for each rate element and then to sum the results across rate elements to obtain
 11 an estimate of total test year cost savings from the 25 percent reduction in
 12 bundle breakage rates.

13 These calculations are described in more detail USPS-LR-J-118, and
 14 shown in the Excel workbook in ‘LR-J-118 Tables.xls.’ The cost models in
 15 USPS-LR-J-61 on which this analysis is based do not develop costs for
 16 Periodicals Within County and Standard ECR mail. The methodology used to
 17 estimate the cost savings resulting from a 25 percent reduction in bundle
 18 breakage rates for these rate categories is described in USPS-LR-J-118.

19 The bundle breakage rates used in these calculations are given in Table
 20 2.

| <u>Container Type</u> | <u>Breakage</u> | <u>Current</u> | <u>Test Year</u> |
|-----------------------|-----------------|----------------|------------------|
| Pallet | Initial | 1.10% | 0.83% |
| | Subsequent | 10.00% | 7.50% |
| Sack | Initial | 17.50% | 13.13% |
| | Subsequent | 10.00% | 7.50% |

1 Bundles are said to 'break' when the pieces in the bundle are no longer
2 kept together and separate from other pieces by means of banding or packaging
3 of some sort. The 'initial' bundle breakage rate refers to the rate at which
4 bundles break when first dumped or unloaded from the mailer-prepared container
5 (i.e., pallet or sack). When bundles are first dumped or unloaded from a
6 container, some are weakened or otherwise compromised but not actually
7 broken. These weakened bundles are at risk of breaking in subsequent
8 handlings. The 'subsequent' bundle breakage rate refers to the rate at which
9 these weakened bundles break when dumped or unloaded at the next or
10 subsequent bundle sortation operation.

11 Broken bundles result in added costs because they increase the number
12 of piece sorts that are required for presorted mail, i.e., pieces in the broken
13 bundle must be sorted in piece sortation operation(s) earlier than the bundle
14 presort level would normally indicate. For example, a 3-Digit bundle in a Mixed
15 ADC (MADC) sack will usually first get a bundle sort at the originating ADC. It
16 will then get a bundle sort at the destinating ADC, before being (deliberately)
17 broken and sorted in piece sortation operations at the destinating SCF. If that 3-
18 Digit bundle is broken when the MADC sack is dumped at the SPBS or manual
19 bundle sort operation at the originating ADC, the pieces in that broken bundle will
20 be gathered and taken to an outgoing primary piece sortation operation at the
21 originating ADC. Those pieces will typically also get sorted in an incoming
22 primary sortation operation at the destination ADC. When bundle breakage is

1 reduced, more mail is sorted as intact bundles further into the mail processing
 2 stream, resulting in cost savings.

3 **III. LOT PREPARATION OF PERIODICALS**

4 In Docket No. R2000-1, an analysis was presented in USPS-LR-I-307 that
 5 calculated the cost savings resulting from a LOT requirement for Carrier
 6 Presorted Basic Periodicals. LOT sequencing generally approximates carriers'
 7 actual sequence of delivery, so carriers can case LOT mail more easily than
 8 randomly arranged mail, thereby saving carrier in-office costs. In the study
 9 presented in USPS-LR-I-307, the cost savings associated with the preparation of
 10 Standard Enhanced Carrier Route (ECR) basic rate mail in LOT sequence was
 11 determined and then used as a proxy for the savings associated with Periodicals
 12 Carrier Route Basic rate mail in LOT sequence. This analysis has been updated
 13 in USPS-LR-J-119 to obtain the cost savings estimate for Periodicals LOT
 14 sequencing shown in Table 3.

| Table 3: Cost Savings Associated with Required LOT Sequencing of Periodicals Carrier Route Basic Mail | |
|---|---------------------|
| | <u>Cost Savings</u> |
| Outside County | \$23,554,843 |
| <u>Inside County</u> | <u>\$3,155,041</u> |
| Total | \$26,709,884 |
| Source: USPS-LR-J-119 | |

15 In USPS-LR-I-307, it was estimated that test year savings for LOT
 16 sequenced Carrier Presorted Basic Periodicals flats was 0.53 cent per piece. I
 17 inflate the estimated 0.53 cent per piece savings identified in USPS-LR-I-307 for

1 changes in City Carrier wages, and then multiply by test year Carrier Presorted
 2 Basic Periodicals flats volume to obtain the total test year cost savings of
 3 \$26,709,884. A detailed description of the estimation methodology is presented
 4 in USPS-LR-J-119.

5 **IV. PALLET COST ANALYSIS**

6 Controlling for other factors, the mail presented by mailers in sacks is
 7 more costly to process than the mail presented on pallets. The cost difference is
 8 due to differences in productivities for platform and other allied operations
 9 associated with unloading mail and moving mail to bundle sort operations.

10 USPS-LR-J-100 estimates the mail processing cost difference between
 11 palletized and sacked Periodicals flats. First, USPS-LR-J-100 identifies the
 12 activities associated with unloading mail and moving mail to bundle sort
 13 operations. Then the costs associated with these activities are estimated, and
 14 the cost difference between palletized and sacked Periodicals flats is calculated.
 15 The results of this analysis, which is presented in USPS-LR-J-100, are
 16 summarized in Table 4.

| Table 4: Cost Difference Between Palletized and Sacked Mailings | |
|---|-----------------------|
| | <u>Per Piece Cost</u> |
| Sacks | \$0.0285 |
| <u>Pallets</u> | <u>\$0.0077</u> |
| Difference | \$0.0209 |
| Source: USPS-LR-J-100 | |

1 The factors that affect this cost difference are the costs associated with
2 unloading and moving palletized and sacked mail at the 'destination' facility. The
3 'destination' facility refers to the facility at which the pallet or sack would be
4 dumped or opened and the bundles or pieces therein handled separately. The
5 'destination' facility is determined by the container presort level (e.g., a 3-Digit
6 pallet is typically dumped at the destination SCF).

7 **V. FIRST-CLASS, PERIODICALS, AND STANDARD MAIL WEIGHT STUDIES**

8 In this testimony I also sponsor library reference USPS-LR-J-58, First-
9 Class, Periodicals, and Standard Mail Weight Studies. These weight studies are
10 not related to any other analysis described above. Witnesses Robinson (USPS-
11 T-29), Taufique (USPS-T-34), Hope (USPS-T-31), and Moeller (USPS-T-32) use
12 the results of this library reference as general guidelines in developing First-
13 Class, Periodicals, Standard ECR, and Standard Regular rates, respectively.

14 This library reference updates the analyses done in library references
15 USPS-LR-I-91 (First-Class Weight Studies), USPS-LR-I-92 (Standard Mail (A)
16 Weight Studies), and USPS-LR-I-93 (Periodicals Weight Studies) in Docket No.
17 R2000-1, which were sponsored by witness Daniel (USPS-T-28/R2000-1). The
18 methodology used in this library reference is the same as that described in
19 witness Daniel's testimony. The studies were updated to incorporate test year
20 costs and volumes.

21 USPS-LR-J-58 includes two additional analyses of Standard mail costs. A
22 test year parcel/flat cost difference is calculated for Standard mail. In addition,
23 the test year cost difference due to differences in presorting and drop shipment of

1 Standard mail is calculated. Witness Moeller (USPS-T-32) uses the test year
2 parcel/flat cost differential and the test year cost difference due to differences in
3 presorting and drop shipment of Standard mail in developing the Standard
4 Regular rate design.

5 Also, USPS-LR-J-58 develops estimates of volume distributions by
6 destination entry and weight increment for Standard ECR mail. Witness Hope
7 (USPS-T-31) uses the volume distribution by destination entry and weight
8 increment for Standard ECR mail in developing the rate design for that mail
9 class.

10 Other testimony and library references used in the development of this
11 library reference include:

- 12 • USPS-T-11 for BY00 CRA costs
- 13 • USPS LR-J-10 for the IOCS data set
- 14 • USPS LR-J-112 for volumes by shape and weight increment

15 **VI. DEVELOPMENT OF ECR MAIL PROCESSING SATURATION SAVINGS**

16 In this testimony I also sponsor library reference USPS-LR-J-59,
17 Development of ECR Mail Processing Saturation Savings. This library reference
18 is not related to any other analysis described above. Rather, witness Hope
19 (USPS-T-31) uses the results of this library reference in developing Standard
20 ECR Mail rates.

1 This library reference updates the analysis done in library reference
2 USPS-LR-I-96/R2000-1 (Development of ECR and NPECR Mail Processing
3 Saturation Savings), which was sponsored by witness Daniel (USPS-T-
4 28/R2000-1). The methodology used in this library reference is the same as that
5 described in witness Daniel's testimony. The study was updated to incorporate
6 test year costs and volumes.

7 Other testimony and library references used in the development of this
8 library reference include:

- 9 • USPS-T-11 for BY00 CRA costs
- 10 • USPS-LR-J-10 for the IOCS Data Set
- 11 • USPS-LR-J-112 for volumes by shape and weight increment
- 12 • USPS-LR-J-68 for non-transportation unit cost avoidance
- 13 • USPS-LR-J-52 for base year and test year cost factors

14 **VII. PARCEL POST WEIGHT STUDY**

15 In this testimony I sponsor library reference USPS-LR-J-113, Parcel Post
16 Weight Study. This library reference is not related to any other analysis
17 described above. In developing Parcel Post rates, witness Kiefer (USPS-T-33)
18 uses the results of this library reference to distribute costs to weight step within
19 the Parcel Post rate elements.

20 A survey is used to collect and compile mail manifests to produce volume
21 estimates of permit imprint entry discounted Parcel Post mail by pound step by
22 entry discount for FY 2000. These hardcopy or electronic manifests indicate the
23 zone and weight characteristics of each parcel in a mailing. The volume

1 estimates by pound step and entry discount are determined by a stratified
2 random sample of Parcel Post mailers.

3 This survey relies on PERMIT data for various elements of its survey
4 design. The PERMIT system is documented in witness Hunter's testimony
5 (USPS-T-4) and all incorporated library references.

6 **VIII. DEVELOPMENT OF DELIVERY COSTS BY RATE ELEMENT FOR**
7 **FIRST-CLASS AND STANDARD MAIL**

8 In this testimony I sponsor library reference USPS-LR-J-117,
9 Development of Delivery Costs by Rate Element for First-Class and Standard
10 Mail. This library reference is not related to any other analysis described above.
11 Rather, witness Miller (USPS-LR-J-60) uses the results of this library reference in
12 developing letter costs.

13 This library reference updates the analysis done in library reference
14 USPS-LR-I-95/R2000-1 (Development of Delivery Costs by Rate Category for
15 First-Class Mail and Standard Mail (A)), which was sponsored by witness Daniel
16 (USPS-T-28/R2000-1). The methodology used in this library reference is the
17 same as that described in witness Daniel's testimony. The study was updated to
18 incorporate test year costs and volumes.

19 Other testimony and library references used in the development of this
20 library reference include:

- 21 • USPS-T-12 for test year costs
- 22 • USPS-LR-J-53 for test year piggybacks and CRA costs
- 23 • USPS-LR-J-57 for CRA worksheets

- 1 • USPS-LR-J-112 for volumes by shape and weight increment