

USPS-T-3

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

POSTAL RATE AND FEE CHANGES, 2006

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Docket No. R2006-1

DIRECT TESTIMONY OF
BRADLEY V. PAFFORD
ON BEHALF OF THE
UNITED STATES POSTAL SERVICE

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TABLE 1: FISCAL YEAR 2005 REVENUE, PIECES AND WEIGHT ESTIMATES
AND ASSOCIATED CONFIDENCE LIMITS10

1 Direct Testimony
2 Of
3 Bradley V. Pafford
4 AUTOBIOGRAPHICAL SKETCH
5

6 My name is Bradley V. Pafford. I am a Mathematical Statistician in
7 Revenue and Volume Reporting, Finance. I have been employed by the
8 Postal Service since 1991. During that time I have worked on statistical
9 design issues for improving Postal Service domestic and international
10 statistical information systems. I have appeared as a witness in Docket No.
11 R2005-1, USPS-T-4; Docket No. R2001-1, USPS-T-3; Docket No. R2000-1,
12 USPS-T-4 and Docket No. R97-1, USPS-T-1. I provided technical support to
13 witness Steele in Docket No. R94-1 and for Postal Service statistical issues in
14 Docket Nos. MC95-2 and MC96-3.

15 Prior to my employment with the Postal Service, I was a Mathematical
16 Statistician with the U. S. Department of Agriculture (USDA), National
17 Agricultural Statistics Service (NASS), for eleven years. I have published
18 many USDA technical reports, and have contributed papers at the American
19 Statistical Association Annual Conference and the Bureau of the Census
20 Annual Research Conference.

21 I was awarded a Bachelor of Science degree with a major in Forestry
22 from Virginia Polytechnic Institute and State University in 1977, and a Master
23 of Science degree in Forestry from Virginia Polytechnic Institute and State
24 University in 1979. My Master of Science degree in Forestry concentrated
25 on survey research in outdoor recreation environments, with my Master's

1 thesis developed around a time and location probability sample of users of
2 the Cape Hatteras National Seashore in the Outer Banks of North Carolina.
3 In 1985 I received a Masters of Statistics degree from North Carolina State
4 University. I was an instructor of statistics at the USDA graduate school from
5 1988 - 1992. I am a member of the American Statistical Association.

1 I. PURPOSE AND SCOPE OF TESTIMONY

2

3 The purpose of my testimony is to describe the Origin-Destination
4 Information System and Revenue, Pieces and Weight (ODIS-RPW), the Bulk
5 Mail Revenue, Pieces and Weight System (BRPW) and the Revenue, Pieces
6 and Weight Adjustment System (ARPW), which generate estimates of
7 revenue, pieces and weight underlying the Postal Service's Request. My
8 testimony describes the ODIS-RPW System, and identifies any changes from
9 the my previous testimony in Docket No. R2005-1, USPS-T-4. My testimony
10 describes the general design of BRPW. To a lesser extent, my testimony
11 provides a general overview of ARPW: a system that combines the revenue,
12 pieces and weight data, including ODIS-RPW and BRPW, from the varied
13 sources to produce the Fiscal Year (FY) 2005 report used for the Base Year.
14 Finally, I present tables showing estimates of revenue, pieces, and weight
15 and their statistical reliability.

16 This testimony is divided into five sections as follows: Section II
17 provides a general overview of the estimation of revenue, pieces and weight.
18 Section III describes ODIS-RPW, Section IV describes BRPW, and Section V
19 describes how the revenue, pieces and weight estimates are prepared
20 through the use of ARPW. A table is attached that provides the FY2005
21 estimates of revenue, pieces, and weight and their associated 95%
22 confidence limits.

23 I developed my testimony using inputs from no other witnesses in this
24 case. The users of ODIS-RPW, BRPW, and ARPW include witness Thress

1 (USPS-T-7), witness Milanovic (USPS-T-9), witness Nash (USPS-T-16),
2 witness Miller (USPS-T-20 and USPS-T-21), witness Talmo (USPS-T-27),
3 witness Loetscher (USPS-T-28), witness Schroeder (USPS-T-29), witness
4 Kelley (USPS-T-30), witness O'Hara (USPS-T-31), witness Taufique (USPS-
5 T-32), witness Scherer (USPS-T-33), witness Tang (USPS-T-35), witness
6 Kiefer (USPS-T-36), witness Koroma (USPS-T-37), witness Yeh (USPS-T-
7 38), witness Berkeley (USPS-T-39), witness Mitchum (USPS-T-40), and
8 witness Kaneer (USPS-T-41). The Library References associated with my
9 testimony (all Category 1) include USPS-LR-L-14, USPS-LR-L-15, USPS-LR-
10 L-16, USPS-LR-L-17, USPS-LR-L-18, USPS-LR-L-19, USPS-LR-L-20, USPS-
11 LR-K-22/R2005-1, and USPS-LR-L-23. All of the library references cited in
12 this testimony are Category 1 library references.

1 II. ESTIMATION OF REVENUE, PIECES AND WEIGHT
2

3 The Postal Service's revenue accounting system contains several
4 postage based accounts that are directly associated with specific classes or
5 subclasses of mail. However, most postage revenue accounts are general
6 accounts that do not correspond exactly with specific mail categories. In
7 addition, the revenue accounting system does not provide the necessary mail
8 piece and weight information. Therefore, the Postal Service supplements its
9 revenue accounting information with statistical data from two systems: the
10 probability-based sampling system known as ODIS-RPW, and the combined
11 revenue accounting and bulk mailing postage statement-based system known
12 as BRPW. These data are combined through a system known as ARPW. My
13 testimony discusses ODIS-RPW, BRPW and ARPW.

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16 III. ORIGIN-DESTINATION INFORMATION SYSTEM AND REVENUE,
17 PIECES AND WEIGHT (ODIS-RPW)
18

19 ODIS-RPW is the primary probability sampling system used to assist in
20 estimating the Postal Service revenue, pieces, weight, and transit time
21 measurement. Information collected from this system is used to develop
22 proposals for new postal rates and fees, assist in budget and workload
23 preparation, conduct management studies, and inform or support
24 management decisions concerning mail flow and transit times in
25 transportation and operations.

1 For the purposes of my testimony, ODIS-RPW is used to produce
2 component estimates of revenue, pieces and weight for mail categories
3 where the data are not available from the Postal Service's revenue
4 accounting system, or from postage statements.

5 ODIS-RPW is composed of a probability sample of mail at destination
6 (as it exits the postal system), and a probability sample of registered, insured,
7 Collect on Delivery (COD) and Certificates of Mailing (COM) mail at origin (as
8 it enters the postal system). The statistical methodology for ODIS-RPW is
9 provided in USPS-LR-L-14, which updates previous ODIS-RPW
10 documentation in USPS-LR-K-14/R2005-1.

11 ODIS-RPW destination sampling employs a stratified sample design
12 that begins with a sampling frame. All destinating mail is partitioned into
13 frame units, as part of a sampling frame. The frame unit for destinating mail
14 is the Mail Exit Point (MEP). In ODIS-RPW origin sampling the finance
15 number is the first-stage sampling unit, and the consolidated originating frame
16 unit, or COU, is the second-stage sampling unit. The statistical
17 documentation for the sampling units and sampling frame appear in USPS-
18 LR-L-14.

19 The procedures used by statistical programs staff in district field offices
20 to maintain the MEPs and COUs can be found in Appendix J of the *Handbook*
21 *F-75, Data Collection User's Guide for Revenue, Volume, and Performance*
22 *Measurement Systems*, USPS-LR-K-22/R2005-1. All supplemental policy
23 instructions issued throughout FY 2005 have been provided in USPS-LR-L-

1 23, which updates USPS-LR-K-23/R2005-1.

2 MEPs are stratified based on expected average daily volume by mail
3 shape and predicted mail class within geographic sampling area, which
4 equates roughly to a destinating processing and distribution area. The
5 sampling unit is a randomly selected MEP-day or COU-day. MEPs and
6 COUs are stratified and sampled each quarter. The sample size for ODIS-
7 RPW for FY2005 totaled 135,599 MEP-days and COU-days, compared with a
8 sample size of 135,504 in FY2004, the base year for Docket No. R2005-1.

9 Test dates are randomly assigned in conjunction, or jointly scheduled,
10 with other statistical system test schedules. The documentation for Jointly
11 Scheduled Tests can be found in USPS-LR-L-15. This updates previous
12 documentation in USPS-LR-K-15/R2005-1.

13 ODIS-RPW tests are conducted by trained data collectors. Data
14 collectors record information about sampled mail pieces that include such
15 items as revenue, pieces, weight, mail class, mail preparation and sortation
16 markings, type of mailer, indicia, shape, origin ZIP Code, origin postmark,
17 destination ZIP Code, special service, meter number, meter manufacturer,
18 forwarding/return status, and the like.

19 For each MEP-day (COU-day), a subsample of the mail may be
20 selected. Subsampling instructions are also documented in Sections 3.6 and
21 3.7 of USPS-LR-K-22/R2005-1. Data are entered directly into laptop
22 computers using the ODIS-RPW Computerized On-Site Data Entry System
23 (ODIS-RPW CODES), and uploaded to a centralized server, referred to as

1 the WEB Base Unit. Each month an ODIS-RPW data file is written to the San
2 Mateo mainframe for processing. ODIS-RPW CODES data entry and WEB
3 Base Unit documentation is presented in USPS-LR-L-19, which update
4 previous documentation in USPS-LR-K-19/R2005-1.

5 From the sample data, estimates of revenue, pieces and weight are
6 developed and used to distribute general postage account revenue to the
7 measured categories of mail. Separate estimates are developed for each
8 quarter. Documentation of the systems that produce revenue and pieces
9 estimates are provided in USPS-LR-L-14.

10

11 IV. BULK MAIL REVENUE, PIECES AND WEIGHT SYSTEM (BRPW)

12

13 The BRPW provides estimates of revenue, pieces and weight totals for
14 the bulk mail categories that have corresponding postage revenue accounts
15 in the Postal Service's revenue accounting system. The BRPW also reports
16 estimates of revenue, pieces and weight totals for other bulk mail categories
17 for which data can be obtained from bulk mailing postage statements. For FY
18 2005, revenue and volume totals are estimated under the BRPW for the
19 following bulk mail categories: permit imprint single-piece and presort First-
20 Class Mail, permit imprint Priority Mail, Periodicals, Nonprofit and Regular
21 Standard Mail, Package Services permit imprint Parcel Post, permit imprint
22 Bound Printed Matter (BPM), permit imprint Media Mail, and permit imprint
23 Library Mail. The postage totals obtained from the following Account Identifier
24 Code (AIC) sub-accounts reported in the revenue accounts system are used

1 in the BRPW: AIC 121 for permit imprint First-Class Mail; AIC 237 for permit
2 imprint Priority Mail; AIC 135, AIC 136, and AIC 224 for Periodicals; AIC 125
3 for permit imprint Nonprofit Standard Mail; AIC 130 and AIC 143 for permit
4 imprint Regular Standard Mail; AIC 124 for permit imprint Package Services
5 Media and Library Mail; and AIC 131 and AIC 223 for permit imprint Package
6 Services BPM and Parcel Post, respectively. BRPW captures mail piece
7 information from postage statements obtained from a panel of post offices.
8 An ongoing census of the panel is taken in which the member offices report
9 their postage statement information each postal accounting period. The panel
10 consists of an automated office component comprised of offices reporting
11 postage statement activity through PostalOne, automated bulk mail
12 acceptance and financial reporting systems, and a supplemental probability
13 based sample of non-automated post offices. PostalOne is documented in
14 USPS-LR-L-26, which updates previous documentation USPS-LR-K-
15 26/R2005-1.

16 Revenue, pieces and weight are captured under the BRPW for Base
17 Year 2005 from the following postage statement series: PS Form 3600 for
18 First-Class Mail and Priority Mail, PS Form 3541 for Periodicals, PS Form
19 3602 for Nonprofit and Regular Standard Mail, PS Form 3605 for Package
20 Services BPM and Parcel Post, PS Form 3608 for Package Services Media
21 Mail and Library Mail, PS Form 3540 for Special Services, and PS Form 3660
22 for Single-Piece Manifest Mailings Permit Imprint. A copy of each type of

1 postage statement is provided in USPS-LR-L-17, which updates previous
2 copies of postage statements documented in USPS-LR-K-17/R2005-1.

3 For the bulk mail categories of presort First-Class Mail, Periodicals,
4 and Nonprofit and Regular Standard Mail, the BRPW estimates of revenue
5 and volume totals constitute the Postal Service's final estimates. For the bulk
6 mail categories of Package Services BPM, Package Services Parcel Post,
7 Package Services Media Mail, and Package Services Library Mail, the
8 estimates of revenue, pieces and weight totals are developed separately for
9 the permit imprint and postage affixed indicia components under the BRPW
10 and ODIS-RPW, respectively.

11 The revenue account postage totals and the postage statement
12 revenue and volume information obtained from the panel are combined in the
13 BRPW jobstream to produce the estimates of revenue, pieces and weight
14 totals each quarter. Quarterly estimates are input into the ARPW model. The
15 BRPW data processing and reporting procedures, and the BRPW statistical
16 documentation are described in USPS-LR-L-16 and USPS-LR-L-17,
17 respectively. They update previous documentation provided in USPS-LR-K-
18 16/R2005-1 and USPS-LR-K-17/R2005-1, respectively. The ARPW is
19 documented in Library Reference USPS-LR-L-18, which updates previous
20 Library Reference USPS-LR-K-18/R2005-1.

1 V. PREPARATION OF REVENUE, PIECES AND WEIGHT REPORT
2 ESTIMATES
3

4 The ODIS-RPW and BRPW estimates are combined with other data in
5 the RPW Adjustment System (ARPW) to produce RPW Report estimates.
6 The FY 2005 RPW Report is provided in USPS-LR-L-20, which updates
7 previous library reference, USPS-LR-K-20/R2005-1. The RPW Report
8 estimates are the base year revenue, pieces and weight estimates shown in
9 the Table 1. ARPW is documented in USPS-LR-L-18, which updates
10 previous documentation, USPS-LR-K-18/R2005-1.

11 Estimates of the coefficients of variation (expressed as percentages),
12 and upper and lower 95% confidence limits, are also shown in Table 1.
13 Documentation of ODIS-RPW and BRPW variance estimation is contained in
14 USPS-LR-L-14 and USPS-LR-L-17, which update prior documentation
15 provided in USPS-LR-K-14/R2005-1 and USPS-LR-K-17/R2005-1,
16 respectively.