

USPS-T-4

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

POSTAL RATE AND FEE CHANGES, 2006

Docket No. R2006-1

DIRECT TESTIMONY OF
THOMAS W. HARAHUSH
ON BEHALF OF
THE UNITED STATES POSTAL SERVICE

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1 DIRECT TESTIMONY
2 OF
3 THOMAS W. HARAUSH

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6 AUTOBIOGRAPHICAL SKETCH
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8 My name is Thomas W. Harahush. I am a Mathematical Statistician in Revenue
9 and Cost Systems, Finance. I have been employed by the Postal Service since
10 1985. During that time I have worked on a number of statistical issues in the
11 areas of cost and service performance. I have provided technical support for rate
12 case witnesses in a number of cases since Docket No. R90-1 and I was the
13 statistical witness for the carrier cost programs in Docket No. R97-1, Docket No.
14 R2000-1, Docket No. R2001-1, and Docket No. R2005-1.

15
16 Prior to my employment with the Postal Service I was a Mathematical Statistician
17 with the Bureau of the Census for twelve years. There I worked on sample
18 design, field work, and processing issues on the 1980 Decennial Census and a
19 number of ongoing surveys, including the Annual Housing Survey, Consumer
20 Expenditures Survey and the Survey of Disabled Adults. Prior to my work with
21 the Bureau of the Census, I was a Statistician at the Bureau of Mines.

22
23 I received a Bachelor of Science Degree in Mathematics from Pennsylvania
24 State University in 1972. My graduate studies in mathematical statistics and
25 survey sampling were conducted at George Washington University.

26

- 1 I am currently a member of the American Statistical Association and the
- 2 Washington Statistical Society.

1 PURPOSE AND SCOPE OF TESTIMONY

2 The requirement that each subclass of mail and special service be priced so as
3 to cover its attributable costs compels the Postal Service to determine the
4 revenues, volumes and costs of each class, subclass, and special service.
5 However, the Postal Service's revenue and cost accounting systems do not in
6 general coincide with, or specifically identify, individual categories of mail or
7 service. Therefore, the Postal Service relies on various statistical systems and
8 special studies to provide estimates of accrued costs for certain postal operating
9 functions, and to provide estimates of revenues, volumes and attributable costs
10 of various categories of mail.

11

12 The purpose of my testimony is to describe the City Carrier Cost System, which
13 is a statistical information system used to distribute attributable city carrier costs
14 to categories of mail in the Postal Service's request. My testimony covers the
15 general design of the City Carrier Cost System, the types of estimates that are
16 produced, and tables showing the reliability of major estimates.

17

18 My testimony relies on no input data from other witnesses. Witnesses Milanovic
19 (USPS-T-9) and Kelley (USPS-T-30) are primary users of data from the City
20 Carrier Cost System.

21

22 The library references associated with, and discussed in, my testimony are all
23 Category 1 library references.

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ESTIMATION OF CARRIER COSTS

3 The Postal Service supplements its city carrier accounting information with
4 statistical data from the City Carrier Cost System to develop various estimates of
5 costs by category of mail.

6

7 The distribution of city carrier cost is based on mail volume delivered on city
8 carrier routes. Estimates of these volumes are utilized to produce ratios that are,
9 in turn, used to distribute costs to the various categories of mail.

10

11

City Carrier Cost System

12

13 The City Carrier Cost System is a probability sample of city carrier routes. The
14 randomly selected routes are sampled each quarter of the year. For each
15 sampled route, a subsample of stops is selected. For each selected stop, data to
16 determine the type of stop and the volume of mail by shape and category of mail
17 are recorded directly into a portable microcomputer using CODES software. All
18 collection mail for the sampled route is also counted.

19

20 These data are used to estimate the number of actual and potential stops for
21 three types of stops: (1) single delivery residential, (2) multi-delivery residential,
22 and (3) business and mixed (residential and business). For each of these three
23 types of stops and for collection mail, sample data are also used to estimate the

1 distribution of mail volume by shape, and within shape, by category of mail. The
2 numbers of actual and potential deliveries are also estimated for both single-
3 delivery and multi-delivery residential stops.

4

5 A description of the statistical design of the City Carrier Cost System is contained
6 in USPS-LR-L-11, City Carrier Cost System (CCCS) Statistical and Computer
7 Documentation. Data collection instructions are contained in USPS-LR-K-
8 21/R2005-1, Handbook F-65, Data Collection User's Guide for Cost Systems,
9 TL-3, Chapter 3. Supplemental data collection policies and instructions are
10 contained in USPS-LR-L-23, Supplemental Statistical Programs Policies & Data
11 Collection Instructions. CODES software documentation is contained in USPS-
12 LR-L-13, CCCS-RCCS CODES Computer System Documentation and Source
13 Code, Sections 1 and 2. Fiscal Year 2005 estimates of major items with
14 associated confidence intervals are shown in Tables 1 - 5.

TABLE 1: City Carrier Cost - Fiscal Year 2005 Proportions of Letter Shaped Mail Volume and Associated Confidence Limits

Mail Class	Proportion of Total	C.V. ¹ of Proportion	Lower 95% Confidence Limit ²	Upper 95% Confidence Limit ³
FIRST-CLASS MAIL				
Letters & Parcels	0.1885	0.95%	0.1850	0.1920
Presort Letters & Parcels	0.3308	0.50%	0.3276	0.3340
Private Mailing Cards	0.0175	1.54%	0.0170	0.0180
Presort Private Cards	0.0194	2.26%	0.0185	0.0203
TOTAL FIRST-CLASS	0.5561	0.38%	0.5520	0.5602
PRIORITY MAIL	0.0002	17.96%	0.0001	0.0003
EXPRESS MAIL	0.0000	57.62%	0.0000	0.0000
MAILGRAMS	0.0000	33.30%	0.0000	0.0000
PERIODICALS	0.0026	4.44%	0.0024	0.0028
STANDARD MAIL				
ECR Saturation	0.0617	2.13%	0.0591	0.0643
ECR All Other	0.0282	2.43%	0.0269	0.0295
Other	0.3463	0.50%	0.3429	0.3497
TOTAL STANDARD	0.4363	0.49%	0.4321	0.4405
PACKAGE SERVICES				
Parcel Post				
Bound Printed Matter	0.0000	55.32%	0.0000	0.0000
Media Mail & Library	0.0000	71.66%	0.0000	0.0000
TOTAL PACKAGE SERVICES	0.0000	44.04%	0.0000	0.0000
U. S. POSTAL SERVICE				
FREE for BLIND & HNDCPD	0.0027	9.60%	0.0022	0.0032
INTERNATIONAL MAIL	0.0001	17.26%	0.0001	0.0001
TOTAL MAIL	1.0000			

¹Coefficient of variation = 100%X(Est. Std. Dev./Est. Proportion)

²Lower Limit = Estimated Proportion – (1.96XEst. Std. Deviation)

³Upper Limit = Estimated Proportion + (1.96XEst. Std. Deviation)

TABLE 2: City Carrier Cost - Fiscal Year 2005 Proportions of Flat Shaped Mail Volume and Associated Confidence Limits

Mail Class	Proportion of Total	C.V. ¹ of Proportion	Lower 95% Confidence Limit ²	Upper 95% Confidence Limit ³
FIRST-CLASS MAIL				
Letters & Parcels	0.0538	1.93%	0.0518	0.0558
Presort Letters & Parcels	0.0168	2.07%	0.0161	0.0175
Private Mailing Cards				
Presort Private Cards				
TOTAL FIRST-CLASS	0.0706	1.65%	0.0683	0.0729
PRIORITY MAIL	0.0054	3.05%	0.0051	0.0057
EXPRESS MAIL	0.0006	8.79%	0.0005	0.0007
MAILGRAMS				
PERIODICALS	0.1679	0.94%	0.1648	0.1710
STANDARD MAIL				
ECR Saturation	0.1966	1.79%	0.1897	0.2035
ECR All Other	0.2990	0.97%	0.2933	0.3047
Other	0.2548	0.85%	0.2506	0.2590
TOTAL STANDARD	0.7504	0.29%	0.7461	0.7547
PACKAGE SERVICES				
Parcel Post	0.0000	20.80%	0.0000	0.0000
Bound Printed Matter	0.0040	4.32%	0.0037	0.0043
Media Mail & Library	0.0004	7.24%	0.0003	0.0005
TOTAL PACKAGE	0.0044	3.95%	0.0041	0.0047
SERVICES				
U. S. POSTAL SERVICE	0.0003	19.45%	0.0002	0.0004
FREE for BLIND & HNDCPD	0.0002	13.90%	0.0001	0.0003
INTERNATIONAL MAIL	0.0012	5.99%	0.0011	0.0013
TOTAL MAIL	1.0000			

¹Coefficient of variation = 100%X(Est. Std. Dev./Est. Proportion)

²Lower Limit = Estimated Proportion – (1.96XEst. Std. Deviation)

³Upper Limit = Estimated Proportion + (1.96XEst. Std. Deviation)

TABLE 3: City Carrier Cost - Fiscal Year 2005 Proportions of Small Parcel Shaped Mail Volume and Associated Confidence Limits

Mail Class	Proportion of Total	C.V. ¹ of Proportion	Lower 95% Confidence Limit ²	Upper 95% Confidence Limit ³
FIRST-CLASS MAIL				
Letters & Parcels	0.2060	2.07%	0.1976	0.2144
Presort Letters & Parcels	0.0084	10.82%	0.0066	0.0102
Private Mailing Cards				
Presort Private Cards				
TOTAL FIRST-CLASS	0.2144	2.02%	0.2059	0.2229
PRIORITY MAIL	0.0875	3.11%	0.0822	0.0928
EXPRESS MAIL	0.0011	27.76%	0.0005	0.0017
MAILGRAMS				
PERIODICALS	0.0248	10.57%	0.0197	0.0299
STANDARD MAIL				
ECR Saturation	0.0044	41.22%	0.0008	0.0080
ECR All Other	0.0562	6.51%	0.0490	0.0634
Other	0.4353	1.33%	0.4240	0.4466
TOTAL STANDARD	0.4960	1.24%	0.4839	0.5081
PACKAGE SERVICES				
Parcel Post	0.0476	4.96%	0.0430	0.0522
Bound Printed Matter	0.0638	4.61%	0.0580	0.0696
Media Mail & Library	0.0386	4.60%	0.0351	0.0421
TOTAL PACKAGE	0.1499	2.72%	0.1419	0.1579
SERVICES				
U. S. POSTAL SERVICE	0.0004	37.26%	0.0001	0.0007
FREE for BLIND & HNDCPD	0.0113	15.50%	0.0079	0.0147
INTERNATIONAL MAIL	0.0144	7.14%	0.0124	0.0164
TOTAL MAIL	1.0000			

¹Coefficient of variation = 100%X(Est. Std. Dev./Est. Proportion)

²Lower Limit = Estimated Proportion – (1.96XEst. Std. Deviation)

³Upper Limit = Estimated Proportion + (1.96XEst. Std. Deviation)

TABLE 4: City Carrier Cost - Fiscal Year 2005 Proportions of Large Parcel Shaped Mail Volume and Associated Confidence Limits

Mail Class	Proportion of Total	C.V. ¹ of Proportion	Lower 95% Confidence Limit ²	Upper 95% Confidence Limit ³
FIRST-CLASS MAIL				
Letters & Parcels	0.0933	4.30%	0.0854	0.1012
Presort Letters & Parcels	0.0015	41.23%	0.0003	0.0027
Private Mailing Cards				
Presort Private Cards				
TOTAL FIRST-CLASS	0.0949	4.32%	0.0869	0.1029
PRIORITY MAIL	0.2952	2.05%	0.2833	0.3071
EXPRESS MAIL	0.0054	14.69%	0.0038	0.0070
MAILGRAMS				
PERIODICALS	0.0146	14.74%	0.0104	0.0188
STANDARD MAIL				
ECR Saturation				
ECR All Other	0.0018	40.05%	0.0004	0.0032
Other	0.1296	3.13%	0.1216	0.1376
TOTAL STANDARD	0.1314	3.14%	0.1233	0.1395
PACKAGE SERVICES				
Parcel Post	0.2294	2.25%	0.2193	0.2395
Bound Printed Matter	0.1404	3.28%	0.1314	0.1494
Media Mail & Library	0.0656	4.65%	0.0596	0.0716
TOTAL PACKAGE SERVICES	0.4355	1.49%	0.4228	0.4482
U. S. POSTAL SERVICE	0.0013	36.88%	0.0004	0.0022
FREE for BLIND & HNDCPD	0.0024	25.58%	0.0012	0.0036
INTERNATIONAL MAIL	0.0193	7.98%	0.0163	0.0223
TOTAL MAIL	1.0000			

¹Coefficient of variation = 100%X(Est. Std. Dev./Est. Proportion)

²Lower Limit = Estimated Proportion – (1.96XEst. Std. Deviation)

³Upper Limit = Estimated Proportion + (1.96XEst. Std. Deviation)

TABLE 5: City Carrier Cost - Fiscal Year 2005 Proportions of All Shapes
Mail Volume and Associated Confidence Limits

Mail Class	Proportion of Total	C.V. ¹ of Proportion	Lower 95% Confidence Limit ²	Upper 95% Confidence Limit ³
FIRST-CLASS MAIL				
Letters & Parcels	0.1542	0.95%	0.1513	0.1571
Presort Letters & Parcels	0.2476	0.54%	0.2450	0.2502
Private Mailing Cards	0.0128	1.54%	0.0124	0.0132
Presort Private Cards	0.0143	2.27%	0.0137	0.0149
TOTAL FIRST-CLASS	0.4289	0.45%	0.4251	0.4327
PRIORITY MAIL	0.0034	2.01%	0.0033	0.0035
EXPRESS MAIL	0.0002	7.57%	0.0002	0.0002
MAILGRAMS	0.0000	33.30%	0.0000	0.0000
PERIODICALS	0.0445	0.92%	0.0437	0.0453
STANDARD MAIL				
ECR Saturation	0.0950	1.75%	0.0917	0.0983
ECR All Other	0.0965	1.08%	0.0945	0.0985
Other	0.3228	0.33%	0.3200	0.3256
TOTAL STANDARD	0.5144	0.39%	0.5105	0.5183
PACKAGE SERVICES				
Parcel Post	0.0015	2.29%	0.0014	0.0016
Bound Printed Matter	0.0022	2.65%	0.0021	0.0023
Media Mail & Library	0.0007	3.25%	0.0007	0.0007
TOTAL PACKAGE	0.0044	1.65%	0.0043	0.0045
SERVICES				
U. S. POSTAL SERVICE	0.0020	9.31%	0.0016	0.0024
FREE for BLIND & HNDCPD	0.0002	9.49%	0.0002	0.0002
INTERNATIONAL MAIL	0.0019	2.61%	0.0018	0.0020
TOTAL MAIL	1.0000			

¹Coefficient of variation = 100%X(Est. Std. Dev./Est. Proportion)

²Lower Limit = Estimated Proportion – (1.96XEst. Std. Deviation)

³Upper Limit = Estimated Proportion + (1.96XEst. Std. Deviation)