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

Postal Rate and Fee Changes, 2001	:	Docket No. R2001-1

DIRECT TESTIMONY OF
JENNIFER J. XIE
ON BEHALF OF THE
UNITED STATES POSTAL SERVICE

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DIRECT TESTIMONY
OF
JENNIFER J. XIE

AUTOBIOGRAPHICAL SKETCH

My name is Jennifer J. Xie. I am a Mathematical Statistician in Cost Systems, Finance. Since joining the Postal Service in 1995, I have worked on statistical design and estimation issues for the Transportation Cost System, Origin-Destination Information System, the Revenue, Pieces and Weight System, and the System for International Revenue and Volume Outbound. I have served as project manager for the Transportation Cost System since August 1997.

Prior to joining the Postal Service, I was employed as a senior Load Research Analyst by the Potomac Electric Power Company (PEPCO). My primary responsibility at PEPCO was to conduct statistical analyses using customer billing and survey information to quantify energy reductions attributable to various conservation programs. I also provided technical support in several PEPCO rate case proceedings.

I received a B.S. in Electrical Engineering from Jiangsu Institute of Technology, China, in 1982 and a M.S. in System Engineering from Hohai University, China, in 1987. I earned a Ph.D. in Operations Research and Applied Statistics from George Mason University in 1992. I am a member of the American Statistical Association and the Washington Statistical Society.

PURPOSE AND SCOPE

The purpose of my testimony is to describe the Transportation Cost System (TRACS), which is a statistical information system used to distribute base year (BY) purchased transportation costs to mail categories. TRACS is composed of five distinct subsystems: Highway, Freight Rail, Passenger Rail (Amtrak), Commercial Air and Network Air. All five subsystems are continuous, ongoing survey systems designed to collect data from the different transportation modes. Each subsystem employs its own survey design and estimation procedures. My testimony covers the general design for each subsystem, the types of estimates each produces, and tables of major estimates and confidence limits.

I. HIGHWAY

The TRACS-Highway subsystem produces separate distribution keys for four types of purchased highway contracts: Inter-BMC[1], Intra-BMC, Inter-SCF[2], and Intra-SCF. The cost for each contract type is composed of one or more accounts. The universe under study is all mail moved on contracts whose costs accrue to these highway accounts:

Inter-BMC: Account Number 53131 (regular Inter-BMC);

Intra-BMC: Account Number 53127 (regular Intra-BMC);

Inter-SCF: Account Numbers 53124 (regular Inter-SCF), 53609 (regular inter-P&DC), 53614 (regular inter-cluster), and 53618 (regular inter-area);

Intra-SCF: Account Numbers 53121 (regular intra-SCF), 53601 (regular intra-P&DC), and 53605 (regular intra-district).

The primary sampling unit (PSU) for all four contract types is the route-trip-stop-day, which is defined as all mail unloaded from a truck at one facility on a specific trip, on a specific day. The survey design is essentially the same for all the contract types, though each of them has its own sampling frame. Each highway sampling frame is a list of stop-days[3]. There are three major steps involved in constructing the sampling frames. In the first step, routing and operation information is extracted from the National Air and Surface System

[1] Bulk Mail Center.
[2] Sectional Center Facility.
[3] Abbreviated name for route-trip-stop-days

(NASS)[4] for all the highway contract routes that are expected to be in operation in the upcoming quarter. The information extracted from NASS includes the route number, the trip number, the facilities where the vehicle stops, and the days of a week when the trip operates. In the second step, account information is extracted from the Highway Pay Master File[5] for the same contract routes. The account information is used to group the contracts into the four contract types. In the third and final step, the ZIP Code and facility type are extracted from the NASS Facility File[6] for each stop on a route. The facility information is used for stratifying the sampling frame, as well as for administering the survey.

The sample design consists of three stages. In the first stage, within each contract type, the stop-days are stratified based on the facility type of the stop and whether the trip is inbound or outbound. A systematic random sample of stop-days is selected from each stratum. In the second stage, for each selected stop-day, a subsample of wheeled containers, pallets and loose items[7] off-loaded at the test facility is selected. From selected containers, a third stage sample of items is selected. For pallets and loose items selected at the second stage, there is no third stage sample. All selected mail is recorded.

Weight and volume information by mail category is recorded for the contents of sampled items. For sampled pallets, the dimensions of the pallet and

[4] See Section III and Appendix I-1 of TRACS Highway Subsystem Statistical and Computer Documentation, filed as USPS-LR-J-32, for additional details regarding NASS.
[5] See Section III and Appendix I-2 of TRACS Highway Subsystem Statistical and Computer Documentation, filed as USPS-LR-J-32, for additional details regarding Pay Master File.
[6] See Section III and Appendix I-3 of TRACS Highway Subsystem Statistical and Computer Documentation, filed as USPS-LR-J-32, for additional details regarding NASS Facility File.
[7] Items include pieces, parcels, bundles, sacks, trays, or tubs. Items that are not in wheeled containers or on pallets are called loose items.

the proportion of the pallet's space occupied by each mail category are recorded. In order to develop estimates of cubic-foot-miles, data collectors also record the facility where the item, or the pallet, was loaded onto the vehicle (to establish miles traveled) and the percent of vehicle floor occupied by palletized mail, containerized items, and loose items (to establish cubic-feet utilized). Data are recorded directly into portable microcomputers using the Computerized On-Site Data Entry System (CODES) software. From the sample data, the cubic-foot-miles transported for each contract type are estimated by mail category.

Distribution keys are calculated by dividing the mail category cubic-foot-miles by the total cubic-foot-miles. Separate distribution keys are calculated for each quarter for each of the four contract types, and are used to distribute quarterly costs by contract types. Annual costs, shown in Tables 1-4, are the sums of the quarterly costs. The confidence intervals of annual costs, also shown in Tables 1-4, are derived from the coefficients of variation (CVs) of the quarterly distribution keys.

A more detailed description of the TRACS-Highway sample design and estimation methodology is contained in Sections I-VII of Library Reference USPS-LR-J-32, TRACS Highway Subsystem Statistical and Computer Documentation. TRACS data collection procedures are detailed further in Chapter 5 of Handbook F-65, filed as Library Reference USPS-LR-J-14, with supplemental instructions in Library Reference USPS-LR-J-34, Supplemental Statistical Programs Policies and Data Collection Instructions. The CODES-

TRACS software, used on laptop computers to record the data, is documented in Section 1 of Library Reference USPS-LR-J-35.

II. FREIGHT RAIL

The TRACS-Rail subsystem produces distribution keys for the Inter-BMC freight rail account (53143). The universe under study is all mail transported via freight rail whose costs accrue to this account. The PSU for freight rail is the origin-destination-day, which is defined as all mail being transported from a given origin BMC to a given destination on a given day. While highway transportation is contracted by route, with one route consisting of multiple trips and stops, freight rail is contracted between one origin and one destination. A trip between the origin and the destination facility is referred to as a rail movement. The freight rail sampling frame is a list of all origin-destination-days (movements) with a BMC origin which are not destined for a mail bag depository or mailer's plant, and are not used exclusively for empty equipment. The freight rail sampling frame is developed using 12 weeks of historical records from the Rail Management Information System (RMIS)[8]. The information extracted from RMIS includes the origin BMC, the destination facility, the date of arrival, the number of vans on the movement, and the cost of the movement.

The sample design consists of four stages. In the first stage, a random sample of rail movements is selected from the sampling frame. In the second stage, one van is randomly selected from the vans on the selected movement. In

[8] See Section II-1 and Appendix I-2 of TRACS Freight Rail Subsystem Statistical and Computer Documentation, filed as USPS-LR-J-33, for additional details regarding RMIS.

the third stage, a subsample of wheeled containers, pallets and loose items off-loaded from the test van is selected. From selected containers, a fourth stage sample of items is selected. For pallets and loose items selected at the third stage, there is no fourth stage sample. All selected mail is recorded. The freight rail sample design at the third and fourth stages is the same as the highway sample design at the second and third stages.

Weight and volume information by rate category is recorded for the contents of sampled items. For sampled pallets, the dimensions of the pallet and the proportion of the pallet's space occupied by each mail category are recorded. Data collectors also record the percent of van floor space occupied by palletized mail, containerized items, and loose items. Data are recorded directly into portable microcomputers using CODES software.

The sample data are expanded, by mail category, to the cubic-foot-miles of the test van. The cost for the trip is multiplied by the cubic-foot-mile proportions to estimate mail category costs for the trip. The costs for tested trips are then expanded to represent all trips in the quarter.

Distribution keys are calculated by dividing the expanded costs for a mail category by the total expanded costs. Separate distribution keys are calculated for each quarter, and are used to distribute quarterly costs. Annual costs, shown in Table 5, are the sum of quarterly costs. The confidence intervals for annual costs, also shown in Table 5, are derived from the CVs of the quarterly distribution keys.

A more detailed description of the TRACS-Rail sample design and estimation methodology is contained in Sections I-V of Library Reference USPS-LR-J-33, TRACS Freight Rail Subsystem Statistical and Computer Documentation. TRACS data collection procedures are detailed further in Chapter 5 of Handbook F-65, filed as Library Reference USPS-LR-J-14, with supplemental instructions in Library Reference USPS-LR-J-34, Supplemental Statistical Programs Policies and Data Collection Instructions. The CODES-TRACS software, used on laptop computers to record the data, is documented in Section 1 of Library Reference USPS-LR-J-35.

III. PASSENGER RAIL (AMTRAK)

The TRACS-Amtrak subsystem produces distribution keys for the passenger rail service account, 53142. The universe under study is all mail transported via Amtrak whose costs accrue to this account. In fiscal year 2000, the Postal Service contracted for mail transportation on 39 Amtrak trains. Each of them makes multiple trips a week along the same route from a specific origin, stopping at various points en route, to a final destination.

The PSU is a trip, which consists of all mail unloaded from an Amtrak train at all the stops along a specific trip. A trip is uniquely determined by its train number and the day the train departs. It can extend over more than one calendar date. The sampling frame is a list of trips. It is developed by extracting the routing and operation information for all Amtrak trains in the NASS database. Information extracted from NASS includes the train number, the frequency (days

of a week when the train departs), the origin, cities at which it stops, and the arrival time for each stop. The 39 trains are divided into two groups (low cost and high cost) based on their contract costs obtained from the Amtrak Train Cost File[9].

The sample design consists of four stages. At the first stage, trips are stratified by train; one trip per quarter is selected from each low cost train and two trips from each high cost train. All stops on the selected trip are sampled. At the second stage, one car is randomly selected from all cars offloading mail at each stop of the sampled trip. At the third stage, a subsample of wheeled containers, pallets and loose items is selected from the mail off-loaded from the selected car. From selected containers, a fourth stage sample of items is selected. There is no fourth stage sample for pallets and loose items selected at the second stage. All selected mail is recorded. The Amtrak sample design at the third and fourth stages is essentially the same as the Highway sample design.

Weight and volume information by rate category is recorded for the contents of sampled items. For sampled pallets, the dimensions of the pallet and the proportion of the pallet's space occupied by each mail category are recorded. To permit estimation of square-foot-miles, data collectors also record the facility where the item, or the pallet, was loaded onto the train (to establish the miles traveled) and the total number of containers and loose items off-loaded from the

[9]See Section I and Appendix I of TRACS Passenger Rail (Amtrak) Subsystem Statistical and Computer Documentation, filed as USPS-LR-J-30, for additional details regarding Amtrak Train Cost File.

entire train (to establish the square-feet utilized). Data are recorded directly into portable microcomputers using CODES software.

The sample data are expanded, by mail category, to the square-foot-miles of the sampled trip. Mail category proportions of square-foot-miles are calculated for each sampled trip and weighted by the trip cost. The weighted mail category proportion is multiplied by the train cost to estimate the mail category cost for the train. The distribution key is calculated by dividing the sum of mail category costs for the 39 trains by the total cost for the 39 trains. Separate distribution keys are calculated for each quarter, and are used to distribute quarterly costs. Annual costs, shown in Table 6, are the sum of quarterly costs. The confidence intervals for annual costs, also shown in Table 6, are derived from the CVs of the quarterly costs.

A more detailed description of the TRACS-Amtrak sample design and estimation methodology is contained in Sections I-VII of Library Reference USPS-LR-J-30, TRACS Passenger Rail (Amtrak) Subsystem Statistical and Computer Documentation. TRACS data collection procedures are detailed further in Chapter 5 of Handbook F-65, filed as Library Reference USPS-LR-J-14, with supplemental instructions in Library Reference USPS-LR-J-34, Supplemental Statistical Programs Policies and Data Collection Instructions. The CODES-TRACS software, used on laptop computers to record the data, is documented in Section 1 of Library Reference USPS-LR-J-35.

Once a year, TRACS samples mail transported on Amtrak-Roadrailer. A distribution key is developed to allocate Amtrak-Roadrailer costs. In BY00, the

Roadrailer sample was conducted during the period of June 17 – July 7. Each Roadrailer route was treated as a regular train. Every trip was treated as a PSU. Four tests were conducted for each Roadrailer. To the extent possible, the tests were taken on different days of the week to help ensure a representative mix across days. At all stops of each trip, data were collected from unloaded mail using normal Amtrak test procedures. Data were recorded using the CODES software for Amtrak tests and transmitted to the mainframe computer along with Amtrak test data. The Amtrak expansion procedure was used in the Roadrailer expansion process. Each Roadrailer was treated as if it was a train and the four tested trips were treated as PSU's. A distribution key was calculated using the expanded Roadrailer sample, and was used to distribute the BY00 Roadrailer costs. Results are shown in Table 7.

A more detailed description of the Roadrailer sample design and estimation methodology for the BY00 study is provided in USPS-LR-I-433/R2000-1. The expansion programs, inputs to the expansion programs and SAS logs used to generate the distribution key are contained in Appendix V: Lists of Source Code and Data on CD-ROM, of USPS-LR-J-30.

IV. COMMERCIAL AIR

The TRACS-Air subsystem produces distribution keys for commercial air transportation costs. The universe under study is all mail transported under purchased transportation contracts on passenger airlines from a domestic origin to a domestic destination. It does not include mail traveling via air taxi or the Eagle, Western or Christmas Networks. The PSU is a flight-day, and is defined

as all mail being dispatched from the specified origin on a given day via a particular airline and flight with the same first-leg destination reflected on the routing label. The sampling frame is constructed by extracting the recent dispatch records from the Air Contract Support System (ACSS)[10]. ACSS maintains the routing information (carrier, origin, destination, and date of the flight) about an individual dispatch, and specifies the gross weight and primary mail class for all items in the dispatch. Flights whose schedules continue through the upcoming postal quarter according to the Official Airline Guide (OAG) are eligible for sampling.

The sample design consists of two stages. In the first stage, a random sample of flight-days is selected from the sampling frame. In the second stage, for each selected flight-day, a subsample of mail items dispatched for that flight is selected for detailed sampling.

Dispatch information is recorded for each selected item. Weight and volume information, by mail category, is then recorded for the contents of the item. The dispatch information is used in the expansion process to link the sample data with dispatch records in the Plan vs. Actual (PVA) file[11]. Similar to the ACSS, but at a less aggregated mail class level, the PVA file maintains individual dispatch information for all items transported by air during the entire quarter. Data are recorded directly into a portable microcomputer using CODES software.

[10] See Section III and Appendix I-B of TRACS Commercial Air Subsystem Statistical and Computer Documentation, filed as USPS-LR-J-29, for additional details regarding ACSS file.
[11] See Section III and Appendix I-K of TRACS Commercial Air Subsystem Statistical and Computer Documentation, filed as USPS-LR-J-29, for additional details regarding PVA file.

The sample data are expanded, by rate category and by primary mail class, to the pound-miles of mail on the test flight and then to the total pound-miles of mail for the quarter. PVA records are used to determine the pound-miles of mail for the test flight, as well as the total pound-miles for the quarter for each primary mail class. The expanded pound-miles for a mail category are obtained by adding fully expanded pound-miles across all primary mail classes.

Distribution keys are calculated by dividing the expanded pound-miles for a mail category by the total expanded pound-miles. Separate distribution keys are calculated for each quarter, and are used to distribute quarterly costs. Annual costs, shown in Table 8, are the sum of the quarterly costs. The confidence intervals for annual costs, also shown in Table 8, are derived from the CVs of the quarterly costs.

A more detailed description of the TRACS-Air sample design and estimation methodology is contained in Sections I-VII of Library Reference USPS-LR-J-29, TRACS Commercial Air Subsystem Statistical and Computer Documentation. TRACS data collection procedures are detailed further in Chapter 5 of Handbook F-65, filed as Library Reference USPS-LR-J-14, with supplemental instructions in Library Reference USPS-LR-J-34, Supplemental Statistical Programs Policies and Data Collection Instructions. The CODES-TRACS software, used on laptop computers to record the data, is documented in Section 1 of Library Reference USPS-LR-J-35.

V. NETWORK AIR

The TRACS-Network Air subsystem produces two sets of distribution keys, one for the Eagle Network and one for the Western Network. The universe under study is all mail transported on the Eagle and Western Networks whose costs accrue to the following accounts:

53541: Eagle Network Line Haul.

53543: Eagle Network Terminal Handling.

53545: Western Network Line Haul.

53546: Western Network Terminal Handling.

53547: Eagle Network Fuel.

It does not include mail transported on passenger airlines, day net, air taxi or the Christmas Networks. Unlike commercial airline flights, network flights are dedicated fully to transporting mail between the hub and one or more cities in the network. The hub for the Eagle Network is Indianapolis, Indiana; for the Western Network, it is Oakland, California. The sample design for each network is the same.

The PSU is a city-day, which consists of all mail dispatched via network flights from that city to the hub (as the first leg flight) on the specified day. The sampling frame is a list of such city-days, and is constructed by extracting the network flight data from the NASS database. For each network city, NASS specifies the flight number, hub destination, flight frequency (days of a week when the flight runs), and the closeout time. Each city is sampled three times per quarter.

The sample design consists of two stages. In the first stage, for each city in the network, three days are randomly selected for sampling. In the second stage, a subsample of mail items dispatched via the network flight to the hub is selected for detailed sampling.

Dispatch information is recorded for each selected item. Weight and volume information, by rate category, are then recorded for the contents of the item. The dispatch information is used in the expansion process to link the sample data with dispatch records in the PVA file. Data are recorded directly into a portable microcomputer using CODES software.

The sample data are expanded, by rate category and by primary mail class, to the pound-miles of mail on the test flight and then to the total pound-miles of mail transported on the network during the quarter. PVA records are used to determine the pound-miles of mail for the test flight, as well as the total pound-miles for the quarter for each primary mail class. The expanded pound-miles for a mail category are obtained by adding fully expanded pound-miles across all primary mail classes.

Distribution keys are calculated by dividing the expanded pound-miles for a mail category by the total expanded pound-miles. Separate distribution keys are calculated for each network for each quarter, and are used to distribute quarterly non-premium costs. Annual costs, shown in Tables 9-10, are the sum of the quarterly costs. The confidence intervals for annual costs, also shown in Tables 8-9, are derived from the CVs of the quarterly costs.

A more detailed description of the TRACS-Network Air sample design and estimation methodology is contained in Sections I-VII of Library Reference USPS-LR-J-31, TRACS Network Air Subsystem Statistical and Computer Documentation. TRACS data collection procedures are detailed further in Chapter 5 of Handbook F-65, filed as Library Reference USPS-LR-J-14, with supplemental instructions in Library Reference USPS-LR-J-34, Supplemental Statistical Programs Policies and Data Collection Instructions. The CODES-TRACS software, used on laptop computers to record the data, is documented in Section 1 of Library Reference USPS-LR-J-35.

APPENDIX

Table 1. BY00 Inter-BMC Highway Costs and Confidence Intervals

Mail Category	CV	Lower 95% C.L. ($1,000)	Cost ($1,000)	Upper 95% C.L. ($1,000)
1C Single-Piece Letters	0.129	8,165	10,929	13,694
1C Presort Letters	0.159	5,291	7,682	10,072
1C Single-Piece Cards	0.370	24	88	151
1C Presort Cards	0.491	8	229	449
Priority Mail	0.132	6,203	8,375	10,547
Express Mail	0.342	45	135	226
Periodicals	0.054	34,873	38,989	43,104
Standard Mail ECR	0.172	4,422	6,661	8,900
Standard Mail Regular	0.101	69,309	86,486	103,663
Parcel Post	0.055	55,130	61,851	68,572
Bound Printed Matter	0.081	14,008	16,664	19,319
Media Mail	0.069	20,572	23,802	27,033
US Postal Service	0.390	183	775	1,366
Free Mail	0.433	105	696	1,287
International Mail	0.239	1,965	3,700	5,434
Total			**267,060**	

Table 2. BY00 Intra-BMC Highway Costs and Confidence Intervals

Mail Category	CV	Lower 95% C.L. ($1,000)	Cost ($1,000)	Upper 95% C.L. ($1,000)
1C Single-Piece Letters	0.097	12,548	15,506	18,464
1C Presort Letters	0.133	7,364	9,972	12,581
1C Single-Piece Cards	0.268	69	145	221
1C Presort Cards	0.274	32	69	106
Priority Mail	0.107	16,046	20,306	24,567
Express Mail	0.282	378	846	1,314
Periodicals	0.076	20,881	24,546	28,210
Standard Mail ECR	0.190	6,789	10,816	14,844
Standard Mail Regular	0.117	45,651	59,215	72,779
Parcel Post	0.050	85,511	94,753	103,995
Bound Printed Matter	0.102	19,089	23,869	28,649
Media Mail	0.090	13,826	16,792	19,758
US Postal Service	0.415	44	234	423
Free Mail	0.335	87	254	421
International Mail	0.310	1,065	2,714	4,363
Total			**280,037**	

Table 3. BY00 Inter-SCF Highway Costs and Confidence Intervals

Mail Category	CV	Lower 95% C.L. ($1,000)	Cost ($1,000)	Upper 95% C.L. ($1,000)
1C Single-Piece Letters	0.055	136,904	153,508	170,112
1C Presort Letters	0.158	44,430	64,385	84,340
1C Single-Piece Cards	0.205	1,308	2,187	3,066
1C Presort Cards	0.316	689	1,804	2,920
Priority Mail	0.081	97,320	115,561	133,801
Express Mail	0.220	3,477	6,117	8,756
Periodicals	0.129	37,848	50,600	63,352
Standard Mail ECR	0.339	996	2,968	4,939
Standard Mail Regular	0.211	22,171	37,771	53,371
Parcel Post	0.162	12,239	17,929	23,620
Bound Printed Matter	0.193	2,495	4,019	5,542
Media Mail	0.251	3,334	6,566	9,798
US Postal Service	0.611	-	703	1,546
Free Mail	0.343	344	1,050	1,756
International Mail	0.457	849	8,159	15,469
Total			**473,327**	

Table 4. BY00 Intra-SCF Highway Costs and Confidence Intervals

Mail Category	CV	Lower 95% C.L. ($1,000)	Cost ($1,000)	Upper 95% C.L. ($1,000)
1C Single-Piece Letters	0.046	104,087	114,480	124,872
1C Presort Letters	0.111	31,812	40,687	49,561
1C Single-Piece Cards	0.175	1,057	1,607	2,158
1C Presort Cards	0.210	417	707	998
Priority Mail	0.063	126,776	144,506	162,237
Express Mail	0.253	4,567	9,057	13,548
Periodicals	0.081	57,359	68,182	79,005
Standard Mail ECR	0.232	12,642	23,222	33,802
Standard Mail Regular	0.133	68,309	92,308	116,307
Parcel Post	0.097	46,786	57,794	68,803
Bound Printed Matter	0.136	10,048	13,688	17,329
Media Mail	0.153	5,454	7,801	10,148
US Postal Service	0.284	445	1,001	1,558
Free Mail	0.256	501	1,007	1,512
International Mail	0.314	1,703	4,433	7,164
Total			**580,483**	

Table 5. BY00 Freight Rail Costs and Confidence Intervals

Mail Category	CV	Lower 95% C.L. ($1,000)	Cost ($1,000)	Upper 95% C.L. ($1,000)
1C Single-Piece Letters	18.469	-	468	17,424
1C Presort Letters	10.791	-	570	12,634
1C Single-Piece Cards	311.531	-	23	14,169
1C Presort Cards	809.714	-	8	12,740
Priority Mail	20.369	-	620	25,372
Express Mail	284.422	-	48	26,534
Periodicals	0.182	8,328	12,939	17,550
Standard Mail ECR	0.124	5,577	7,360	9,142
Standard Mail Regular	0.010	58,664	59,857	61,049
Parcel Post	0.078	19,854	23,450	27,047
Bound Printed Matter	0.124	6,363	8,416	10,469
Media Mail	0.091	9,825	11,961	14,097
US Postal Service	28.556	-	291	16,598
Free Mail	81.693	-	135	21,677
International Mail	0.793	-	3,944	10,070
Total			**130,089**	

Table 6. BY00 Passenger Rail (Amtrak) Costs and Confidence Intervals

Mail Category	CV	Lower 95% C.L. ($1,000)	Cost ($1,000)	Upper 95% C.L. ($1,000)
1C Single-Piece Letters	0.335	1,044	3,031	5,019
1C Presort Letters	0.377	1,745	6,662	11,580
1C Single-Piece Cards	0.360	8	29	49
1C Presort Cards	0.971	-	231	670
Priority Mail	0.230	1,220	2,224	3,229
Express Mail	0.000	-	-	-
Periodicals	0.043	72,306	78,931	85,556
Standard Mail ECR	0.617	-	75	165
Standard Mail Regular	0.153	1,179	1,685	2,191
Parcel Post	0.384	199	804	1,409
Bound Printed Matter	0.091	24	30	35
Media Mail	0.751	-	142	350
US Postal Service	2.375	-	603	3,409
Free Mail	0.179	256	394	533
International Mail	0.621	-	406	899
Total			**95,246**	

Table 7. BY00 Amtrak - Roadrailer Distribution Key and Costs

Mail Category	Distribution Key	Cost ($1,000)
1C Single-Piece Letters	.2832	1,507
1C Presort Letters	.2913	1,550
1C Single-Piece Cards	.0109	58
1C Presort Cards	.0025	13
Priority Mail	.0152	81
Express Mail	-	-
Periodicals	.3383	1,800
Standard Mail ECR	.0002	1
Standard Mail Regular	.0189	100
Parcel Post	.0048	26
Bound Printed Matter	.0047	25
Media Mail	.0166	88
US Postal Service	.0111	59
Free Mail	.0016	8
International Mail	.0006	3
Total	**1.0000**	**5,321**

Table 8. BY00 Commercial Air Costs and Confidence Intervals

Mail Category	CV	Lower 95% C.L. ($1,000)	Cost ($1,000)	Upper 95% C.L. ($1,000)
1C Single-Piece Letters	0.102	166,019	207,567	249,114
1C Presort Letters	0.122	133,272	175,228	217,183
1C Single-Piece Cards	0.335	1,849	5,385	8,921
1C Presort Cards	0.354	540	1,761	2,982
Priority Mail	0.140	229,434	315,962	402,489
Express Mail	0.223	5,985	10,627	15,269
Periodicals	0.222	8,549	15,154	21,759
Standard Mail ECR	0.399	54	247	441
Standard Mail Regular	0.202	11,034	18,275	25,517
Parcel Post	0.789	-	2,274	5,788
Bound Printed Matter	0.424	364	2,149	3,934
Media Mail	0.266	757	1,584	2,410
US Postal Service	0.473	83	1,151	2,219
Free Mail	0.639	-	902	2,032
International Mail	0.232	10,984	20,165	29,347
Total			**778,430**	

Table 9. BY00 Eagle Network Costs and Confidence Intervals

Mail Category	CV	Lower 95% C.L. ($1,000)	Cost ($1,000)	Upper 95% C.L. ($1,000)
1C Single-Piece Letters	0.118	6,996	9,104	11,212
1C Presort Letters	0.121	5,980	7,832	9,683
1C Single-Piece Cards	0.277	44	96	148
1C Presort Cards	0.295	26	62	98
Priority Mail	0.064	22,460	25,659	28,857
Express Mail	0.056	13,961	15,674	17,386
Periodicals	0.206	167	280	393
Standard Mail ECR	0.827	-	11	30
Standard Mail Regular	0.264	354	733	1,112
Parcel Post	0.835	-	47	124
Bound Printed Matter	0.703	-	50	119
Media Mail	0.376	15	56	98
US Postal Service	0.435	92	628	1,164
Free Mail	0.517	-	45	91
International Mail	0.187	3,692	5,821	7,949
Total			**66,098**	

Table 10. BY00 Western Network Costs and Confidence Intervals

Mail Category	CV	Lower 95% C.L. ($1,000)	Cost ($1,000)	Upper 95% C.L. ($1,000)
1C Single-Piece Letters	0.319	241	641	1,041
1C Presort Letters	0.165	1,278	1,890	2,503
1C Single-Piece Cards	0.354	6	19	32
1C Presort Cards	0.910	-	17	48
Priority Mail	0.087	4,821	5,813	6,806
Express Mail	0.109	877	1,114	1,352
Periodicals	0.443	14	103	192
Standard Mail ECR	0.946	-	5	14
Standard Mail Regular	0.490	12	288	564
Parcel Post	1.000	-	17	51
Bound Printed Matter	1.000	-	1	3
Media Mail	1.000	-	2	7
US Postal Service	0.738	-	5	13
Free Mail	0.000	-	-	-
International Mail	0.342	184	558	932
Total			**10,475**	