

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, D.C. 20268B0001

EXPERIMENTAL PRIORITY MAIL FLAT-RATE
Box, 2004

Docket No. MC2004-2

RESPONSE OF UNITED STATES POSTAL SERVICE
WITNESS LOETSCHER TO INTERROGATORIES OF
DAVID B. POPKIN
(DBP/USPS-T3-7-10)
(July 28, 2004)

The United States Postal Service hereby files witness Loetscher's responses to interrogatories of David B. Popkin: DBP/USPS-T3-7-10, filed on July 13, 2004.

Each interrogatory is stated verbatim and is followed by the response.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

By its attorneys:

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DBP/USPS-T3-7. Please refer to your response to DBP/USPS-T1-6. Your response indicated the range for which a 95% confidence level would refer to. My interrogatory requested the level of confidence that the given sample size would provide. Please respond.

RESPONSE:

The study was intended to provide size characteristics of Priority Mail pieces by pound increment. As discussed in my response to OCA/USPS-T3-3, prior to the study no data existed that would enable us to determine the sample size needed to produce estimates with a desired precision level. Using the data collected in the study, the number of observations needed to obtain a desired precision level can be calculated using the mean and variances calculated from the sample data for approximations of the population means. The table below provides the calculated number of observations needed to produce estimates of the mean cubic volume (in cubic feet) for each pound increment at 4 precision levels with a probability of 95 percent.¹ For example there is a 95 percent probability that a sample of 883 Priority Mail pieces in the one-pound increment will produce an estimate of the mean cubic feet for one-pound Priority Mail pieces that is within 5 percent of the population value.

¹ Cochran, William G. (1977) *Sampling Techniques*. John Wiley & Sons, New York Chapter 10 page 77.

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Pound Increment	Sample Mean (ft ³)	Sample Variance	Sample Size at 5%	Sample Size at 7.5%	Sample Size at 10%	Sample Size at 12.5%	Study Observations
1	0.132	0.010	883	393	221	141	1,277
2	0.241	0.039	1,013	450	253	162	1,603
3	0.398	0.126	1,214	539	303	194	747
4	0.566	0.224	1,063	473	266	170	423
5	0.739	0.333	928	412	232	148	258
6	0.888	0.423	816	363	204	131	181
7	1.073	0.475	628	279	157	100	128
8	1.237	0.663	659	293	165	105	118
9	1.349	0.910	761	338	190	122	69
10	1.319	0.470	411	183	103	66	70

Over 87 percent of FY2002 Priority Mail volume weighed less than 3 pounds and 95 percent weighed less than 5 pounds. For the under-3-pound increments, the sampling efforts collected more than the number of observations needed to produce estimates within 7.5 percent of the population value with 95 percent confidence and within 10 percent for the 4 and 5 pound increments. The precision of the estimates of the higher-pound increments (pieces weighing more than 5 pounds) is less, but the proportion of pieces in these increments is small. The fact that sampling efforts produced more observations than needed to satisfy relatively strict precision levels for the dominant pound increments leads me to conclude that the study has provided an accurate measure of Priority Mail sizes by pound increment.

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DBP/USPS-T3-8. Please refer to the attachment to response to DBP/USPS-T3-3. You indicated that the data was collected over a two-day period. It was also indicated that the sampling study was done over the October 2002 to January 2003 timeframe. [a] What specific days was the study conducted at each of the ten sites. Please also provide in addition to the month, day, and year the day of the week and whether there was a holiday in the given week or the preceding week. [b] How were the specific days, both day of the week and time of the year, chosen?

RESPONSE:

The table below provides the dates and weekdays during which data collection occurred at each sample site. Data collection occurred over a two-day period; in some cases the data collection shift crossed calendar days (*i.e.*, data collection occurred during the Postal Service’s Tour 1), so a three-day span is shown. Also indicated are major United States holidays, if any, that occurred in the week of, or week before, data collection.

Site	Data Collection (Start - End, Weekdays)	Major US Holiday?
Phoenix, AZ 852	11/19/02 – 11/22/02, TWR	None
New York, NY 100	01/22/03 - 01/24/03, WRF	None
North Metro, GA 300	12/04/02 – 12/05/02, WR	Thanksgiving preceding
Detroit, MI 481	11/13/02 – 11/15/02, WRF	None
Jacksonville, FL 320	01/20/03 – 01/21/03, MTW	None
Kansas City, MO 640	11/20/02 – 11/21/02, WR	None
Hartford, CT 060	12/03/02 – 12/05/02, TWR	Thanksgiving preceding
Everett, WA 982	11/18/02 – 11/19/02, MT	None
Syracuse, NY 130	12/04/02 – 12/06/02, WRF	Thanksgiving preceding
Wichita, KS 670	11/13/02 – 11/15/02, WRF	None

The time of year was a simple choice based on the availability of data collection resources as limited by avoidance of operational impact. Since the study’s intent

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was to measure the size distribution of parcels within pound increment, and not parcel volume across pound increment or zone, we did not believe that the time of year would have any impact upon the estimates. See also, my response to DPB/USPS-T1-14b. To account for the relative differences in annual parcel volume across pound increment and zone, we relied on RPW-ODIS sampling which is designed to measure these volumes. Different days of the week were selected for each site to spread sample observations across the week. Consecutive days of the week were selected at each site to reduce the cost of data collection.

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DBP/USPS-T3-9. Please refer to the attachment to response to DBP/USPS-T3-3. On page 2 you indicate that only 1 parcel in 30 was chosen for machinable parcels while every nonmachinable outside [NMO] parcel was chosen. Please explain the reason for reasons [sic] why every NMO was chosen (as opposed to a sampling procedure). Wouldn't this system provide a greater weight to NMO based on their relationship to the entire volume? Please explain.

RESPONSE:

Heavy weight parcels account for a relatively small proportion of the universe of parcels. To ensure that we obtained sufficient observations of heavy weight parcels, we sampled every third container of nonmachinable outside (NMO) parcels and measured every piece in that container, where possible. As such, we did not sample every NMO. NMO parcels are generally heavier weight parcels, and therefore would not be in the same pound increment as non-NMOs. This mitigates any concern that different sampling rates were used as between non-NMOs and NMOs. In addition, as described in USPS-LR-2, subsection 3(D), pound increment cubic feet and weight are weighted by the GFY 2003 RPW parcel volumes in the pound increment to account for differences in sampling rates across pound increments.

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DBP/USPS-T3-10. In the tables attached to your response to DBP/USPS-T3-5, you show that the largest weight of a parcel in the up-to 0.34 cubic foot category was 15 pounds. Please explain why the data in the Library Reference shows parcels of a greater weight.

RESPONSE:

As described in Section 3 of USPS-LR-2, a regression technique was used to generate a continuous size distribution of Priority Mail parcels for all pound increments and zones.

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon all participants of record in this proceeding in accordance with section 12 of the Rules of Practice.

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