

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

EXPERIMENTAL PRIORITY MAIL FLAT-RATE
BOX, 2004

Docket No. MC2004-2

RESPONSE OF THE UNITED STATES POSTAL SERVICE TO
PRESIDING OFFICER'S INFORMATION REQUEST NO. 1

The United States Postal Service hereby provides its response to Presiding Officer's Information Request No. 1, issued July 28, 2004. Note that witnesses Loetscher and Scherer each have provided responses to question POIR1-3. Each question is stated verbatim and is followed by the response.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

By its attorneys:

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August 4, 2004

RESPONSE OF POSTAL SERVICE WITNESS LOETSCHER
TO PRESIDING OFFICER'S INFORMATION REQUEST No. 1

POIR1-1: On pages 3 – 4 of USPS-LR-2, the equation used to estimate the relation of cubic feet and weight is given as:

$$\ln(\text{CUFT}_i) = \beta_0 + \beta_1 \ln(\text{WT}_i) + \beta_2 \ln(\text{WTSQ}_i) + \beta_j \text{ZONE} + \varepsilon_i$$

where WT_i is the weight of the i^{th} piece in pounds and WTSQ_i is the weight of the i^{th} piece squared in pounds. The actual equation used in the calculation of the regressions in the workbook "Cubic Feet Distribution LR .xls" appears to be:

$$\ln(\text{CUFT}_i) = \beta_0 + \beta_1 \ln(\text{WT}_i) + \beta_2 [\ln(\text{WT}_i)]^2 + \beta_j \text{ZONE} + \varepsilon_i$$

Please reconcile the difference.

RESPONSE:

The equation in which the square of the natural log of weight is used is the correct version of the regression equation used.

The estimation equation used is:

$$\ln(\text{CUFT}_i) = \beta_0 + \beta_1 \ln(\text{WT}_i) + \beta_2 [\ln(\text{WT}_i)]^2 + \beta_j \text{ZONE}_i + \varepsilon_i$$

The variable definitions are as follows:

CUFT_i – is the cubic feet of the i^{th} piece

WT_i - is the weight of the i^{th} piece in pounds

ZONE_i – is the postal zone (1-3, 4, 5, 6, 7, or 8) of the i^{th} piece
 $j = 1-3,4,5,6,7,8$.

ε_i - is a residual term representing the distribution of cubic feet

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POIR1-2: The collection instructions provided by witness Loetscher in response to DBP/USPS-T3-3 list four types of indicia: permit imprint (PI), stamp (ST), meter (MT), and postage validation imprint (PV). The file "cubic_ft_dist.txt," provided as part of library reference USPS-LR-2, gives the indicium code for each parcel sampled in the Priority Mail Parcel Size Distribution and Density Study. Which category of indicia did data collectors use for packages bearing postage printed from the internet?

RESPONSE:

Pieces bearing indicia printed from the internet were recorded as metered postage

(MT).

RESPONSE OF POSTAL SERVICE WITNESS LOETSCHER
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POIR1-3: In response to DBP/USPS-T4-4, witness Loetscher states that an assumption of square girth was used to calculate the volume of parcels for which width and length were not recorded. The column "VolumeCubics" on the "Sample Data" sheet of "Cubic Feet Distribution LR .xls" provided as part of USPS-LR-2 appears to assume a circular girth for these parcels. Please explain.

RESPONSE:

The analysis of Priority Mail density originally compared two assumptions for observations involving girth: circular and square. The choice between the two assumptions was based on the data collectors' impression that pieces for which the girth measurement was taken tended to be predominantly "soft packaging" and only occasionally tubular; thus for the vast majority of pieces whose girth was measured, it was believed that the square girth measurement would be more accurate.

The results under the two assumptions are only slightly different. The circular girth assumption yields an estimate of the density of 0.34 cubic foot parcels of 6.70 pounds per cubic foot. The square girth assumption yields an estimate of the density of 0.34 cubic foot parcel of 6.76 pounds per cubic foot.

Based on the data collectors' impression, my intention was to use the estimates that relied upon the square girth. As this question points out, circular girth was actually used.

Note that witness Scherer also has provided information in response to information request POIR1-3.

RESPONSE OF POSTAL SERVICE WITNESS SCHERER
TO PRESIDING OFFICER'S INFORMATION REQUEST No. 1

POIR1-3: In response to DBP/USPS-T4-4, witness Loetscher states that an assumption of square girth was used to calculate the volume of parcels for which width and length were not recorded. The column "VolumeCubics" on the "Sample Data" sheet of "Cubic Feet Distribution LR .xls" provided as part of USPS-LR-2 appears to assume a circular girth for these parcels. Please explain.

RESPONSE:

As explained in witness Loetscher's response to POIR No. 1, Question 3, "squaring" rather than circumscribing sampled Priority Mail parcels for which girth (as opposed to width and height) was measured would have had the effect of increasing estimated average density at 0.34 cubic feet from 6.70 to 6.76 pounds per cubic foot. This change in estimation would not have had a significant impact on the analysis, conclusions or recommendations found in my testimony (USPS-T-1). The estimated average weight of a parcel at 0.34 cubic feet would have been 0.34 cubic feet x 6.76 pounds/cubic foot = 2.30 pounds. Following the interpolation methodology in my testimony, the base rate would have been $\$4.68 + [(\$6.25 - \$4.68) \times ((2.30 - 1.448)/(2.50 - 1.448))]$ = \$5.95. The implicit rate premium would have been the proposed rate of \$7.70 minus \$5.95, or \$1.75. This would have continued to be an appropriate premium because, like the \$1.78 premium in my testimony, it falls near the middle (coincidentally, right in the middle) of my target range of \$1.50 to \$2.00. Therefore, even had the "squaring" density estimate been used, I would not have altered the proposed rate of \$7.70 or the proposed box size of 0.34 cubic feet.

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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