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

Postal Rate and Fee Changes, 2000

Docket No. R2000-1

RESPONSE OF THE UNITED STATES POSTAL SERVICE WITNESS BARON TO UPS INTERROGATORIES (UPS/USPS-T12-18-21)

The United States Postal Service hereby provides the response of witness Baron to the following interrogatories of the United Parcel Service: UPS/USPS-T12-18-21, filed on June 9, 2000.

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

Respectfully submitted,

UNITED STATES POSTAL SERVICE

By its attorneys:

Daniel J. Foucheaux, Jr.
Chief Counsel, Ratemaking

Richard T. Cooper

475 L'Enfant Plaza West, S.W.
(202) 268-2993; Fax: -5402
Washington, D.C. 20260-1137
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RESPONSE OF UNTED STATES POSTAL SERVICE WITNESS BARON TO INTERROGATORIES OF UNITED PARCEL SERVICE

UPS/USPS-T12-18. In response to interrogatory UPS/USPS-T1 3-I 0, witness Raymond defines a parcel for purposes of the Engineered Standards (ES) Study as "a package that weighs two pounds or more, and/or is larger than a shoe box." In your response to interrogatory UPS/USPS-T12-14, you provide a definition for parcels in the ES Study which includes small parcels and rolls (SPRs) that are not cased with flats. You conclude that the definition of parcels is "essentially the same" in the ES Study and in the City Carrier Cost System (CCCS).

(a) Do small parcels and rolls consist entirely of packages "that weigh two pounds or more, and/or [are] larger than a shoe box" or do small parcels and rolls include parcels that do not weigh two pounds or more and/or are smaller than a shoe box?

(b) Provide a definition of "small parcels and rolls."

(c) Provide a definition of "small parcels and rolls" as that term was used in the CCCS.

(d) Provide a definition of "small parcels and rolls" as that term was used in the ES Study.

(e) Provide a precise definition of "parcels" as the term is used in the ES Study and in Library Reference USPS-LR-I-310. Provide any documentation, including training manuals, that support your definition.

(f) Explain why your definition of parcels in the ES Study differs from that submitted by witness Raymond, the designer of the ES Study.

(g) Your response to interrogatory UPS/USPS-T12-14 indicates that the volumes for parcels in the ES Study are defined by where the parcels are cased (as they are done in the CCCS). Does this hold for letters and flats as well?

(i) In other words, if a large letter is cased as a flat, is it counted as a letter or as a flat?

(ii) If a flat is small enough to be cased as a letter, is it counted as a letter or as a flat?

(h) In the CCCS data, there are a few parcel-shaped First Class Mail items that are too large to be cased with flats or letters. How would the ES Study identify these items, as letters or as parcels?

RESPONSE:

(a) In my response to UPS/USPS-T12-14(b) I stated that in the ES Study, small parcels and rolls were regarded as mail pieces obtained from parcel hampers (and therefore are kept out of the letter and flat mail stream) but that are "less than two pounds and often smaller in size than a shoe box." This statement needs to be corrected. Small parcels and rolls were, in fact, regarded as mail pieces obtained from parcel hampers that are **always** less than two pounds **and always** smaller than a shoebox. This definition also applies to the small parcel and rolls volumes that are included in the ES load-time regression analysis presented in Docket No. R2000-1, USPS-LR-I-386.

Another entirely consistent view of the difference between small parcels and rolls and parcels is that small parcels and rolls are mail pieces that, although maintained in parcel hampers, are small enough to be cased into letter and flat cases. Whether or not a carrier does case any specific small parcel or roll (SPR) depends on how much space is left after the letters and/or flats have been put into whatever bin the SPR would go into.

One source of ambiguity in these definitions is the variation in how analysts might refer to those small parcels and rolls that the carrier chooses not to case. Sometimes these small parcels and rolls are simply called parcels because they are simply lighter and smaller versions of the same parcels (weighing two pounds or more or taking up more space than a shoebox) that are all kept in the parcel hampers along with the small parcels and rolls. However,

other analysts might classify these uncased small parcels and rolls into a separate, distinct category called, specifically, "small parcels and rolls" in order to emphasize that these pieces **do** differ from the traditional "parcels," in that they weigh less than two pounds and are smaller than a shoebox, and because they can physically be cased into letter or flat cases.

(b) My definition of small parcels and rolls is the same as that applied in the ES study, and that is presented in my response to part (a). To summarize, a small parcel and roll has the following characteristics:

1. It weighs less than two pounds and is smaller than a shoebox.
2. At the delivery unit, it is kept in a parcel hamper.
3. It is small enough to be cased into a letter or flat case, if the carrier chooses to do so.

(c) The CCCS does not explicitly define small parcels and rolls. It only defines *the concept of "Parcel Mail," identifying this as all pieces that are "too large or* cumbersome to case into either a letter case or a flat case." The CCCS methodology for measuring mail pieces by shape category counts all pieces that are sorted into letter cases as letters, all pieces that are sorted into flat cases as flats, and all pieces that physically cannot be cased – due to weight or size - as parcels. For example, if a piece is cased into a letter case, the CCCS counts it as a letter, regardless of its physical characteristics. If it is cased into a flat case, it is counted as a flat, regardless of its physical characteristics. The remaining possibility is that the piece is obtained from a letter or flat tray, and thus could be sorted into a letter or flat case. However, it is sorted into a container for delivery

to a firm or is otherwise kept separate. The CCCS would classify this piece according to the casing method the carrier would otherwise use.

Thus, the CCCS counts all **cased** SPRs as either letters or flats, depending on where they are cased. It counts all non-cased SPRs as parcels, because only those uncased pieces **that are obtained from letter or flat trays** are ever counted as letters or flats, based on the determination of where they would be cased if the carrier chose to do so.

(d) This definition is the one given in response to parts (a) and (b).

(e) A parcel, as distinct from a small parcel or roll, is a piece that weighs two or more pounds or is larger than a shoebox, and is therefore too heavy or too cumbersome to be cased into a letter or flat case. See Witness Raymond's response to UPS/USPS-T13-10.

(f) My definition of parcels - as opposed to small parcels and rolls - is the same as that submitted by witness Raymond. Both Mr. Raymond and I define "parcels" as pieces that are kept in parcel hampers, and that weigh two pounds or more or are larger than a shoebox and are therefore too large or cumbersome to be cased into letter or flat cases.

(g) and (h) I have been informed that in the ES study, a large letter cased as a flat was counted as a flat. A small flat cased as a letter was counted as a letter. A piece that was too large or cumbersome to be cased was counted as a parcel, regardless of its rate classification.

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UPS/USPS-T12-19. In your response to interrogatory UPS/USPS-T12-14(b), you refer to an "analysis team."

(a) What was the purpose and composition of the analysis team?

(b) Did the analysis team include any of the data collectors associated with the ES Study?

RESPONSE:

(a) The analysis team that I am referring to in this interrogatory response consisted of Lloyd Raymond, William Lloyd, and Robert Boldt of Resource & Process Metrics, Inc., and Richard Harris of the United States Postal Service. The purpose of their analysis is described in Mr. Raymond's Docket No. R2000 -1 Direct Testimony, USPS-T-13, at 3-5.

(b) No.

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UPS/USPS-TI2-20. In your response to interrogatory UPS/USPS-T12-16 you provide regression results in Table 3A and Table 4A when the parcels variable is defined to include SPRs. For the analysis requested in this question, define SPRs as a separate variable. That is, perform the analysis such that SPRs are not included in any of the three primary shape categories -- letters, flats or parcels -- but represent a separate fourth shape variable.

(a) Present updated results similar to Tables 3A and 4A based on reestimating the equations used to generate Tables 3A and 4A in your response to interrogatory UPS/USPS-T12-16, such that SPRs are defined as a separate variable in the analysis. Modify the interaction terms and dummy variables accordingly.

(b) After estimating Tables 3A and 4A provided in your response to interrogatory UPS/USPS-T12-16, you test the joint significance of the volume interaction terms. Using the results from part (a) of this interrogatory, present the results of the joint significance of the volume interaction terms, which include a separate SPR variable.

(c) If the results from part (b) of this interrogatory indicate that the joint interaction terms are not significant, present the results of the regression analysis when these terms are not included, as you did in Tables 3B and 48. Maintain SPRs as a separate variable in this analysis.

RESPONSE:

(a) The results requested appear below in tables 3C and 4C. Library Reference

USPS-LR-I-402 is being filed to document the estimation of these new

regressions.

TABLE 3C. New Quadratic Load-Time Equation Based On The 1996-1998 Engineered Standards Data Base (t-Statistics Are In Parentheses)	
Independent Variable	Coefficient Estimated
Intercept	-5,743.10 (2.70)
Load Time/Letters Dummy	2,790.73 (8.56)
Load Time/Flats Dummy	1,991.05 (6.21)
Load Time/Accountables Dummy	2,253.40 (8.96)
Load Time/SPR Dummy	212.85 (0.81)
Load Time/Parcel Dummy	.1,104.03 (3.73)
Letters Delivered	1.33 (2.05)
Letters Delivered Squared	-0.0004 (3.23)
Flats Delivered	0.80 (0.53)
Flats Delivered Squared	-0.002 (2.22)
Accountables Delivered	197.44 (1.83)
Accountables Delivered Squared	-7.34 (3.54)
SPRs Delivered	48.47 (1.74)
SPRs Delivered Squared	-0.25 (1.79)
Parcels Delivered	107.79 (2.55)
Parcels Delivered Squared	-0.69 (0.99)
Letters*Flats	0.00009 (0.19)
Letters*Accountables	0.04 (1.32)
Letters*SPRs	0.006 (0.63)
Letters*Parcels	-0.008 (0.63)
Flats*Accountables	0.06 (0.89)
Flats*SPRs	-0.02 (1.07)
Flats*Parcels	-0.007 (0.23)
Accountables*SPRs	-0.38 (0.33)
Accountables*Parcels	-2.68 (0.87)
Deliveries	-0.125 (0.04)
Deliveries Squared	-0.00006 (0.024)
Letters*Deliveries	0.002 (2.39)
Flats*Deliveries	0.005 (2.26
Accountables*Deliveries	-0.06 (0.54)
SPRs*Deliveries	-0.04 (1.09)
Parcels*Deliveries	-0.07 (1.08)
% of Deliveries That Are Residential Other	6,434.56 (3.38)
% of Deliveries That Are Residential Curb	9,325.65 (4.86)
% of Deliveries That Are Residential Central	8,171.71 (4.12)
% of Deliveries That Are Residential NDCBU	7,830.50 (3.94)
% of Deliveries That Are Business Other	5,088.93 (2.42)
% of Deliveries That Are Business Curb	2,880.14 (1.08)
% of Deliveries That Are Business Central	10,519.00 (3.44)
R-Square	57.04%
F Statistic	24.17
Number of Observations	750

TABLE 4C. New Total Load Time Per Route-Day, Marginal Load Times, And Load-Time Elasticities Derived From The New Load-Time Regression Dataset	
Predicted Daily Load Time	9,146.06 Seconds
Marginal Load Times (in seconds)	
Letters	1.07
Flats	1.49
Accountables	182.13
SPRs	22.80
Parcels	36.10
Deliveries	4.40
Estimated Elasticities	
Letters	22.05%
Flats	8.77%
Accountables	7.80%
SPRs	4.22%
Parcels	4.10%
Deliveries	23.76%

(b) The test of the joint significance of the volume interaction terms produced an F-statistic of .6594.

(c) The results of the joint significance test do indicate that the volume interaction terms are not statistically significant. Therefore, the following tables present the results of a regression that does not include these terms.

TABLE 3D. New Quadratic Load-Time Equation Based On The 1996-1998 Engineered Standards Data Base (t-Statistics Are In Parentheses)	
Independent Variable	Coefficient Estimated
Intercept	-4,885.84 (2.39)
Load Time/Letters Dummy	2,872.58 (8.94)
Load Time/Flats Dummy	1,904.85 (6.00)
Load Time/Accountables Dummy	2,238.04 (8.99)
Load Time/SPR Dummy	220.88 (0.86)
Load Time/Parcel Dummy	1,113.69 (3.84)
Letters Delivered	1.40 (2.45)
Letters Delivered Squared	-0.0004 (3.80)
Flats Delivered	0.47 (0.33)
Flats Delivered Squared	-0.001 (2.06)
Accountables Delivered	292.48 (3.87)
Accountables Delivered Squared	-7.17 (3.57)

TABLE 3D. New Quadratic Load-Time Equation Based On The 1996-1998 Engineered Standards Data Base (t-Statistics Are In Parentheses)	
SPRs Delivered	42.25 (2.02)
SPRs Delivered Squared	-0.21 (1.61)
Parcels Delivered	82.80 (2.43)
Parcels Delivered Squared	-0.72 (1.21)
Deliveries	-0.75 (0.25)
Deliveries Squared	0.0002 (0.065)
Letters*Deliveries	0.002 (2.74)
Flats*Deliveries	0.005 (2.89)
Accountables*Deliveries	-0.11 (1.12)
SPRs*Deliveries	-0.03 (0.80)
Parcels*Deliveries	-0.06 (1.15)
% of Deliveries That Are Residential Other	5,768.49 (3.16)
% of Deliveries That Are Residential Curb	8,657.60 (4.72)
% of Deliveries That Are Residential Central	7,518.82 (3.95))
% of Deliveries That Are Residential NDCBU	7,140.73 (3.74)
% of Deliveries That Are Business Other	4,260.11 (2.11)
% of Deliveries That Are Business Curb	2,091.71 (0.80)
% of Deliveries That Are Business Central	10,101.00 (3.37)
R-Square	56.64%
F Statistic	32.43
Number of Observations	750

TABLE 4D. New Total Load Time Per Route-Day, Marginal Load Times, And Load-Time Elasticities Derived From The New Load-Time Regression Dataset	
Predicted Daily Load Time	9,136.21 Seconds
Marginal Load Times (in seconds)	
Letters	1.08
Flats	1.40
Accountables	181.76
SPRs	22.48
Parcels	36.50
Deliveries	4.32
Estimated Elasticities	
Letters	22.43%
Flats	8.28%
Accountables	7.79%
SPRs	4.17%
Parcels	4.15%
Deliveries	23.34%

UPS/USPS-T12-21. In your response to interrogatory UPS/USPS-T12-16, you conclude that the volume variables (letters, flats, parcels, and accountables) are jointly insignificant, and you reestimate the regression equation without these variables.

(a) Provide the same test for joint significance of the volume variables (letters, flats, parcels, and accountables) on your results from Table 3 of Library Reference USPS-LR-I-310. Maintain the same variable definitions in this test as you did in Table 4 of Library Reference USPS-LR-I-310, where SPRs are included in the flats variable.

(b) If the results from part (a) of this interrogatory indicate that the volume variables are jointly insignificant, reestimate Tables 3 and 4 without the volume-interaction terms. Again, maintain the same variable definitions as you did in Library Reference USPS-LR-I-310, where SPRs are included in the flats variable.

RESPONSE:

(a) The F-statistics for this test of joint significance of the volume interaction terms is equal to 0.7493.

(b) The results in part (a) do indicate that the volume interaction terms are jointly insignificant. The tables below show the results of estimating new regressions without these interactions terms. (See USPS-LR-I-402 for the documentation of these F-statistic calculations and the new regressions).

Table 3E
New Quadratic Load-Time Equation Based on the 1996-1998 Engineered Standards Data Base
(t-statistics are in parentheses)

Independent Variable	Coefficient Estimated
Intercept	-4,774.81 (2.35)
Load Time/Letters Dummy	2,890.30 (9.07)
Load Time/Flats Dummy	2,072.12 (6.50)
Load Time/Accountables Dummy	2,270.50 (9.22)
Load Time/Parcels Dummy	1,176.97 (4.08)
Letters Delivered	1.50 (2.73)
Letters Delivered Squared	-0.0004 (3.98)
Flats Delivered	1.05 (.734)
Flats Delivered Squared	-0.001 (2.46)
Accountables Delivered	321.82 (4.32)
Accountables Delivered Squared	-7.61 (3.84)

Table 3E **New Quadratic Load-Time Equation Based on the 1996-1998 Engineered Standards Data Base** ***(t-statistics are in parentheses)***	
Parcels Delivered	91.02 (2.71)
Parcels Delivered Squared	-0.82 (1.39)
Deliveries	.495 (0.171)
Deliveries Squared	-0.001 (0.391)
Letters*Deliveries	0.002 (2.94)
Flats*Deliveries	0.004 (2.16)
Accountables*Deliveries	-0.15 (1.512)
Parcels*Deliveries	-0.07 (1.26)
% of Deliveries That Are Residential Other	5,304.77 (2.93)
% of Deliveries That Are Residential Curb	8,331.32 (4.55)
% of Deliveries That Are Residential Central	7,159.05 (3.78)
% of Deliveries That Are Residential NDCBU	6,679.65 (3.52)
% of Deliveries That Are Business Other	3,793.41 (1.89)
% of Deliveries That Are Business Curb	753.64 (0.296)
% of Deliveries That Are Business Central	9880.35 (3.33)
R-Square	56.56%
F Statistic	37.70
Number of Observations	750

Table 4E ***Total Load Time Per Route-Day, Marginal Load Times, And Load-Time Elasticities Derived From The New Load-Time Regression***	
Predicted Daily Load Time	9,145.51 Seconds
Marginal Load Times (in seconds)	
Letters	1.13
Flats	1.52
Accountables	188.90
Parcels	39.98
Deliveries	4.61
Estimated Elasticities	
Letters	23.42%
Flats	9.22%
Accountables	8.09%
Parcels	4.54%
Deliveries	24.88%

DECLARATION

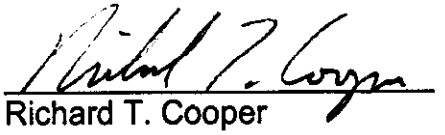
I, Donald M. Baron, declare under penalty of perjury that the foregoing answers are true and correct to the best of my knowledge, information, and belief.

Donald M. Baron

Date: 6-23-00

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.



Richard T. Cooper

475 L'Enfant Plaza West, S.W.
Washington, D.C. 20260-1137
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