DOCKET SECTION

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

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POSTAL RATE COMMISSION
OFFICE OF THE SECRETARY

POSTAL RATE AND FEE CHANGES, 1997

Docket No. R97–1

RESPONSE OF UNITED STATES POSTAL SERVICE
WITNESS BREHM TO INTERROGATORIES OF
THE OFFICE OF THE CONSUMER ADVOCATE (OCA/USPS–T21—1–4), AND
UNITED PARCEL SERVICE (UPS/USPS-T21-1-6)

The United States Postal Service hereby provides responses of witness Brehm to the following interrogatories of the Office of the Consumer Advocate: OCA/USPS–T21—1–4, filed on September 17, 1997, and United Parcel Service: UPS/USPS-T21-1-6, also filed on September 17, 1997.

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

David H. Rubin

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October 1, 1997

RESPONSE OF U.S. POSTAL SERVICE WITNESS BREHM TO INTERROGATORIES OF THE OFFICE OF THE CONSUMER ADVOCATE

OCA/USPS-T21-1. Please refer to your testimony at page 20 and the footnotes to table 4 discussing the marginal increases in window transaction time for window activities.

a. The percent of total transactions, footnote 1, references exhibit USPS-21B. Please explain how the percentages are determined from that exhibit.

b. Footnote 2 references table 5 as the source of the multiple element average transaction time. Please explain how the multiple element transaction time is calculated from table 5.

RESPONSE:

a-b. The footnotes should be presented as follows in the table below.

Table 4: Calculation of Average Increase in Transaction Time

	Single Element Transactions				*Multiple Element Transactions*				
Window Service Activities	Percent of Total Transactions[1]		Average Transaction Time[2]		Percent of Total Transactions[3]		Average Transaction Time[4]		Weighted Average Increase in Transaction Time
Selling Stamps	60.04%	*	53 343	+	39.96%	*	13.313	=	37.347
Setting Meters	62.69%	*	269.554	+	37.31%	*	217.313	=	250 061
Weigh and Rate	30.79%	*	58 268	+	69.21%	*	21.534	=	32.845
Express Mail	53.56%	*	122.449	+	46.44%	*	78.011	=	101.812
Money Orders	31.98%	*	67.2098	+	68.02%	*	32.9855	=	43.932

Table Notes
[1] USPS LR-H-167.
[2] See Table 3
[3] USPS LR-H-167
[4] Exhibit USPS-21B

RESPONSE OF U.S. POSTAL SERVICE WITNESS BREHM TO INTERROGATORIES OF THE OFFICE OF THE CONSUMER ADVOCATE

OCA/USPS-T21-2. Please refer to table 6 in your testimony. Please confirm that footnote 2, which refers to table 7, should be table 5. If not, please explain.

RESPONSE:

Confirmed.

RESPONSE OF U.S. POSTAL SERVICE WITNESS BREHM TO INTERROGATORIES OF THE OFFICE OF THE CONSUMER ADVOCATE

OCA/USPS-T21-3. Please refer to your testimony at page 23. Footnote 31 states that a variability of 78.53 percent originally calculated for express mail was included in the base year calculation and that the recent variability calculation of 83.15 percent as shown on your table 6 raises the volume variability for express mail costs by $902,000. In your opinion should the 83.15 percent variability be used by witness Alexandrovich in his base year cost study? If not, please explain.

RESPONSE:

Given that 83.15 percent was not available at the time that the base year cost study was completed, I can not disagree with witness Alexandrovich's use of the 78.53 percent variability.

RESPONSE OF U.S. POSTAL SERVICE WITNESS BREHM TO INTERROGATORIES OF THE OFFICE OF THE CONSUMER ADVOCATE

OCA/USPS-T21-4. Please confirm that in your testimony on page 6, line 18, the first reference to "staffing time" should read "processing time." If not, please explain

RESPONSE:

Confirmed.

RESPONSE OF U.S. POSTAL SERVICE WITNESS BREHM TO INTERROGATORIES OF UNITED PARCEL SERVICE

UPS/USPS-T21-1. Please refer to page 10 of your testimony, lines 13-14, where you state that "TTS data were collected at 20 randomly selected post offices in July, 1996."

a) Please explain the decision to survey this particular time period. Include in your explanation answers to the questions whether July is a typical month for the Postal Service and whether July is typically a low or high volume month.
b) Please describe the sampling plan used in the selection of the 20 TTS sites, the window clerks who were monitored, and the dates and times of day on which they were monitored.
c) Were all 20 post offices surveyed on the same day of the week?
d) Were all 20 post offices surveyed at the same time of day?
e) Please discuss how the data and results could be affected by selection of the month, days (within the month and days of the week), and times of day.

RESPONSE:

a. While it is unclear what effect large mail volumes will have on retail transaction times, a decision was made to avoid those time periods that typically have unusual mail volumes. In this respect, July satisfies this constraint, although it is my understanding that the summer months have relatively low mail volumes.

b. The stratum design, sample selection, and program documentation for the transaction time study are in section 2 of LR-H-167. Specifically, the sampling plan is documented on pages 6 - 44 of the library reference.

The survey implementation is described and documented in section 3 of LR-H-167. Information on monitoring window clerks and the time of day that data collection occurred is found on pages 51 to 52. The dates on which each post office was observed are listed in the following table.

Date	City	State	Zip
July 15 - 16	OAKLAND	TN	38060
July 15 - 16	SALINAS	CA	93907
July 15 - 16	COQUILLE	OR	97423
July 15 - 16	FORT WORTH	TX	76161
July 15 - 16	ROCKVILLE	MD	20850
July 18 - 19	BURNEY	CA	96013
July 18 - 20	JACKSONVILLE	FL	32203
July 18 - 20	PISMO BEACH	CA	93449
July 18 - 20	MEXIA	TX	76667
July 18 - 20	MAHWAH	NJ	07430
July 22 - 23	MONTGOMERY	AL	36119
July 22 - 23	SAN BERNARDINO	CA	92401
July 22 - 23	BATTLE MOUNTAIN	NV	89820
July 22 - 23	MENTOR	OH	44060
July 22 - 23	JERSEY CITY	NJ	07302
July 25 - 27	COLUMBUS	MS	39701
July 25 - 27	LAS VEGAS	NV	89199
July 25 - 27	SALT LAKE CITY	UT	84199
July 25 - 27	GLENVILLE	WV	26351
July 25 - 27	WEBSTER	MA	01570

c. No. Each data collector visited two offices per week. The first office was visited on Monday and Tuesday, the second on Thursday, Friday, and Saturday. Each data collector's schedule is described in the following table.

Days	Week	Office
Monday & Tuesday	Week 1	Office #1
Thursday, Friday & Saturday	Week 1	Office #2
Monday & Tuesday	Week 2	Office #3
Thursday, Friday & Saturday	Week 2	Office #4

d. No. All offices were studied from open to close except for offices with extended hours, which were studied only during regular business hours. See pages 51-52 of LR-H-167.

e. It is reasonable to expect that the load factor of a post office differs by month, days (within the month and days of the week), and times of day. For a discussion of how

the load factor of an office influences transaction times, please see my response to UPS/USPS-T21-2.

RESPONSE OF U.S. POSTAL SERVICE WITNESS BREHM TO INTERROGATORIES OF UNITED PARCEL SERVICE

UPS/USPS-T21-2. Please discuss how the length of transactions may differ with the load factor of the post office. For instance, when there is a long line of customers waiting for service, are transactions performed more quickly than during times when there is a short line, or no line at all?

RESPONSE:

The transaction time study data contains enough detail to provide a preliminary analysis of this question. It is common for post offices to experience a lunch-time peak in customer demand. At this time of day, the line of customers waiting for service (the load factor) is usually longer than other times of day. Therefore, because the transaction time study captured the time of day that a transaction occurred, it is possible to examine the effect of changes in an office's load factor on the length of transactions.

I examined the difference in transaction times between the peak and off-peak periods in the following way. I created a dummy variable called "PEAK" that is equal to 1 if the transaction occurred between 11:30 a.m. and 1:30 p.m., and equal to 0 for all other times. The results, which are attached to this interrogatory response, show that transaction times tend to decrease by only one-half of a second (-0.501424) during the lunch-time peak, and this result is statistically insignificant (the t-statistic is 0.236). Therefore, a preliminary analysis of the transaction time study data does <u>not</u> show that transactions are completed more quickly at peak periods of demand, which is when office load factors tend to be the highest.

The regression results and the SAS program log are attached to this response.

ATTACHMENT TO RESPONSE
TO UPS/USPS-T21-2, P.1

Full Model -- All Variables

Model: MODEL1
Dependent Variable: DURATION

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	32	20994127.455	656066.48297	130.414	0.0001
Error	7142	35928996.129	5030.6631377		
C Total	7174	56923123.584			

Root MSE	70.92717	R-square	0.3688
Dep Mean	85.02481	Adj R-sq	0.3660
C.V.	83.41938		

Full Model -- All Variables

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	38.053805	1.59806169	23.812	0.0001
CHECK	1	52.957291	3.32380411	15.933	0.0001
CREDIT	1	112.208567	8.49892387	13.203	0.0001
ST	1	11.163665	1.93203426	5.778	0.0001
WRQUAN	1	14.659039	0.65727540	22.303	0.0001
AC	1	6.914482	2.76177822	2.504	0.0123
EXQUAN	1	84.748066	4.13643210	20.488	0.0001
MOQUAN	1	33.609998	1.55633645	21.596	0.0001
CAQUAN	1	81.774479	21.43827472	3.814	0.0001
MEQUAN	1	204.793318	7.26933712	28.172	0.0001
PD	1	59.993970	13.24073528	4.531	0.0001
CS	1	1.172390	22.49280093	0.052	0.9584
MS	1	43.935822	4.51188816	9.738	0.0001
CF	1	30.664845	8.07908970	3.796	0.0001
MP	1	80.417027	15.34221079	5.242	0.0001
PCQUAN	1	76.988903	71.01957775	1.084	0.2784
BRQUAN	1	127.067765	8.41585881	15.099	0.0001
EC	1	10.835762	7.47148819	1.450	0.1470
IQQUAN	1	42.084708	2.56910862	16.381	0.0001
OT	1	93.815822	5.39751229	17.381	0.0001
PPQUAN	1	151.839502	11.89578138	12.764	0.0001
RRQUAN	1	10.388574	3.50366032	2.965	0.0030
RGQUAN	1	94.759522	5.59386160	16.940	0.0001
SIRQUAN	1	66.435779	22.47627697	2.956	0.0031
RDQUAN	1	142.451518	71.01027127	2.006	0.0449
CEQUAN	1	20.337062	2.75965550	7.369	0.0001
INSQUAN	1	71.234465	4.85122566	14.684	0.0001
SCMQUAN	1	20.137555	41.06597260	0.490	0.6239
GVP	1	64.041761	4.73416319	13.528	0.0001
GPDQUAN	1	2.995964	1.60475390	1.867	0.0620
WA	1	-0.576148	9.16938673	-0.063	0.9499
RM	1	8.741616	11.57202763	0.755	0.4500
PEAK	1	-0.501424	2.12122761	-0.236	0.8131

ATTACHMENT TO RESPONSE TO UPS/USPS-T21-2, P.2

```
NOTE: Copyright (c) 1989-1996 by SAS Institute Inc., Cary, NC, USA.
NOTE: SAS (r) Proprietary Software Release 6.12  TS020
      Licensed to PRICE WATERHOUSE LLP, Site 0015509001.

1
2    options ls=96 ps=54 nocenter nodate nonumber;
3
4    libname tts 'c:\mydocu~1\window~1\analys~1';
NOTE: Libref TTS was successfully assigned as follows:
      Engine:        V612
      Physical Name: c:\mydocu~1\window~1\analys~1
5
6    data alldata;
7    set tts.econscal;
8
9    array code(6) acode1-acode6;
10   array value(6) avalue1-avalue6;
11   array quan(6) aquant1-aquant6;
12
13   ST=0; STval=0;
14   WR=0; WRquan=0;
15   AC=0; ACquan=0;
16   EX=0; EXquan=0;
17   MO=0; MOquan=0; MOval=0;
18   CA=0; CAquan=0;
19   ME=0; MEquan=0; MEval=0;
20   PD=0;
21   CS=0;
22   MS=0;
23   CF=0;
24   MP=0;
25   PC=0; PCquan=0; PCval=0;
26   BR=0; BRquan=0;
27   EC=0; ECquan=0;
28   GT=0; GTquan=0;
29   IQ=0; IQquan=0;
30   OT=0;
31   PP=0; PPquan=0;
32   IWR=0; IWRquan=0;
33   IAC=0; IACquan=0;
34   IST=0; ISTval=0;
35   SRR=0; SRRquan=0;
36   SRG=0; SRGquan=0;
37   SIR=0; SIRquan=0;
38   SRD=0; SRDquan=0;
39   SCE=0; SCEquan=0;
40   SIL=0; SILquan=0;
41   SIH=0; SIHquan=0;
42   SCM=0; SCMquan=0;
43   GVP=0;
44   GPD=0; GPDquan=0;
45   GRR=0; GRRquan=0;
46   GRG=0; GRGquan=0;
47   GRD=0; GRDquan=0;
48   GCE=0; GCEquan=0;
```

```
49  GIL=0; GILquan=0;
50  GIH=0; GIHquan=0;
51  IMO=0; IMOquan=0; IMOval=0;
52  BX=0;
53  RMO=0; RMOquan=0; RMOval=0;
54  WA=0;
55  RM=0;
56  book=0;
57  singles=0;
58
59  do i=1 to 6;
60  if quan(i)=. then quan(i)=0;
61  if value(i)=. then value(i)=0;
62  if code(i)='ST' then do; ST=1; STval=value(i); end;
63  if code(i)='WR' then do; WR=1; WRquan=quan(i); end;
64  if code(i)='AC' then do; AC=1; ACquan=quan(i); end;
65  if code(i)='EX' then do; EX=1; EXquan=quan(i); end;
66  if code(i)='MO' then do; MO=1; MOquan=quan(i); MOval=value(i); end;
67  if code(i)='CA' then do; CA=1; CAquan=quan(i); end;
68  if code(i)='ME' then do; ME=1; MEquan=quan(i); MEval=value(i); end;
69  if code(i)='PD' then PD=1;
70  if code(i)='MS' then MS=1;
71  if code(i)='CS' then CS=1;
72  if code(i)='CF' then CF=1;
73  if code(i)='MP' then MP=1;
74  if code(i)='PC' then do; PC=1; PCquan=quan(i); PCval=value(i); end;
75  if code(i)='BR' then do; BR=1; BRquan=quan(i); end;
76  if code(i)='EC' then do; EC=1; ECquan=quan(i); end;
77  if code(i)='GT' then do; GT=1; GTquan=quan(i); end;
78  if code(i)='IQ' then do; IQ=1; IQquan=quan(i); end;
79  if code(i)='OT' then OT=1;
80  if code(i)='PP' then do; PP=1; PPquan=quan(i); end;
81  if code(i)='IWR' then do; IWR=1; IWRquan=quan(i); end;
82  if code(i)='IAC' then do; IAC=1; IACquan=quan(i); end;
83  if code(i)='IST' then do; IST=1; ISTval=value(i); end;
84  if code(i)='SRR' then do; SRR=1; SRRquan=quan(i); end;
85  if code(i)='SRG' then do; SRG=1; SRGquan=quan(i); end;
86  if code(i)='SIR' then do; SIR=1; SIRquan=quan(i); end;
87  if code(i)='SRD' then do; SRD=1; SRDquan=quan(i); end;
88  if code(i)='SCE' then do; SCE=1; SCEquan=quan(i); end;
89  if code(i)='SIL' then do; SIL=1; SILquan=quan(i); end;
90  if code(i)='SIH' then do; SIH=1; SIHquan=quan(i); end;
91  if code(i)='SCM' then do; SCM=1; SCMquan=quan(i); end;
92  if code(i)='GVP' then GVP=1;
93  if code(i)='GPD' then do; GPD=1; GPDquan=quan(i); end;
94  if code(i)='GRR' then do; GRR=1; GRRquan=quan(i); end;
95  if code(i)='GRG' then do; GRG=1; GRGquan=quan(i); end;
96  if code(i)='GRD' then do; GRD=1; GRDquan=quan(i); end;
97  if code(i)='GCE' then do; GCE=1; GCEquan=quan(i); end;
98  if code(i)='GIL' then do; GIL=1; GILquan=quan(i); end;
99  if code(i)='GIH' then do; GIH=1; GIHquan=quan(i); end;
100 if code(i)='IMO' then do; IMO=1; IMOquan=quan(i); IMOval=value(i); end;
101 if code(i)='BX' then BX=1;
102 if code(i)='RMO' then do; RMO=1; RMOquan=quan(i); RMOval=value(i); end;
103 if code(i)='WA' then WA=1;
104 if code(i)='RM' then RM=1;
105 end;
```

```
106
107  ** Define the time variables ;
108
109  H=hour(begin);
110  M=minute(begin);
111
112  if (H=11 and M ge 30) or (H=12) or (H=1 and M le 30) then peak=1; else peak=0;
113
114     if (me=1 and mequan=0) then mequan=1;
115
116     if (wr=1 or iwr=1) then wr=1; else wr=0;
117     wrquan=wrquan+iwrquan;
118
119     if (iac=1 or ac=1) then ac=1; else ac=0;
120     acquan=acquan+iacquan;
121
122     if (br=1 or bx=1) then br=1; else br=0;
123
124     if st=1 or ist=1 then st=1; else st=0;
125
126     if (moquan+imoquan+rmoquan) ne 0 then mo=1; else mo=0;
127     moquan=moquan+imoquan+rmoquan;
128
129     if srr=1 or grr=1 then rr=1;
130     rrquan=srrquan+grrquan;
131
132     if srg=1 or grg=1 then rg=1;
133     rgquan=srgquan+grgquan;
134
135     if srd=1 or grd=1 then rd=1;
136     rdquan=srdquan+grdquan;
137
138     if sce=1 or gce=1 then ce=1;
139     cequan=scequan+gcequan;
140
141     if sil=1 or gil=1 then il=1;
142     ilquan=silquan+gilquan;
143
144     if sih=1 or gih=1 then ih=1;
145     ihquan=sihquan+gihquan;
146
147     if (il=1 or ih=1) then ins=1; else ins=0;
148     insquan=ilquan+ihquan;
149
150     if wrquan=. then wrquan=0;
151     if acquan=. then acquan=0;
152     if moquan=. then moquan=0;
153     if mequan=. then mequan=0;
154     if rrquan=. then rrquan=0; if rr=. then rr=0;
155     if rgquan=. then rgquan=0; if rg=. then rg=0;
156     if rdquan=. then rdquan=0; if rd=. then rd=0;
157     if cequan=. then cequan=0; if ce=. then ce=0;
158     if insquan=. then insquan=0;
159
160  dum=1;
161  run;
```

```
NOTE: The data set WORK.ALLDATA has 7175 observations and 152 variables.
NOTE: The DATA statement used 14.0 seconds.


162
163
164  *-- Full model with all variables--*;
165
166  proc reg data=alldata;
167  title 'Full Model -- All Variables';
168  model duration=check credit
169    ST WRquan AC EXquan MOquan CAquan MEquan PD CS MS CF MP PCquan
170    BRquan EC IQquan OT PPquan RRquan RGquan SIRquan RDquan
171    CEquan INSquan SCMquan GVP GPDquan WA RM peak;
172
173  run;

NOTE: 7175 observations read.
NOTE: 7175 observations used in computations.
```

RESPONSE OF U.S. POSTAL SERVICE WITNESS BREHM TO INTERROGATORIES OF UNITED PARCEL SERVICE

UPS/USPS-T21-3. *Please confirm that you did not estimate the regression equation specified* on page 14 of your testimony using GLS and instead, you corrected your standard errors for heteroskedasticity and did not re-estimate the parameters. If not confirmed, please explain.

RESPONSE:

Confirmed.

RESPONSE OF U.S. POSTAL SERVICE WITNESS BREHM TO INTERROGATORIES OF UNITED PARCEL SERVICE

UPS/USPS-T21-4. Please confirm that t-statistics and standard errors were used to decided [sic] which regressors were to be included in the estimation and that these t-statistics and standard errors are affected by the heteroskedasticity present in your model. If not confirmed, please explain.

RESPONSE:

Confirmed.

RESPONSE OF U.S. POSTAL SERVICE WITNESS BREHM TO INTERROGATORIES OF UNITED PARCEL SERVICE

UPS/USPS-T21-5. Please confirm that the White correction was performed after refining the regression to eliminate regressors with insignificant parameter estimates. If confirmed, please discuss why the White correction to t-statistics and standard errors was not performed prior to decisions regarding which regressors were to be included in the model. If not confirmed, please explain.

RESPONSE:

Confirmed. Theoretically, it appears that it would be more accurate to examine heteroscedasticity-corrected t-statistics before deciding which variables to include in the refined model. Practically speaking, I would not expect this to have a significant effect on the number of variables that would have been excluded from the refined regression model or the final regression results.

The heteroscedasticity-corrected t-statistics in Model #3 show that only one variable – return receipt transactions – changed from statistically significant to statistically insignificant after the White correction. Furthermore, if one additional low volume transaction-type was excluded from the model, I would not expect an appreciable change in the results for the variables of interest. For example, when the refined model (Model #2) was analyzed after the six statistically insignificant variables were dropped, very small changes in the results occurred. The coefficient on weigh and rate activities decreased by 0.1 from 14.655 to 14.548 and the coefficient on Express Mail decreased by 0.5 from 84.752 to 84.280. In addition, the direction of the small changes is uncertain – in contrast to the above decreases, 5 of the estimates experienced small increases when the statistically insignificant variables were dropped.

RESPONSE OF U.S. POSTAL SERVICE WITNESS BREHM TO INTERROGATORIES OF UNITED PARCEL SERVICE

UPS/USPS-T21-6. Please refer to page 4 of your testimony. Please confirm that November 1983 survey data were used to determine the proportion of customers that fall into the 100 percent demand side variability category and the zero percent demand side variability category If confirmed, please discuss the validity of survey data that is almost 15 years old. Include in your answer a discussion of the possibility that consumer behavior has changed over time and what your expectations are as to how behavior may have changed. If not confirmed, please explain.

RESPONSE:

Confirmed. It is reasonable to assume that customer behavior has changed over time. With regards to stamp sales, the increase in vending machines and the availability of stamps at grocery stores certainly have had an influence on consumers' purchasing behavior. However, I have not studied demand side behavior; therefore, I can not comment from a statistical perspective on how the demand side variability would change. I can envision scenarios where changes in customer behavior could increase or decrease the demand side variability. The 1983 survey, however, was the best information available to me at the time I developed my variability estimates.

DECLARATION

I, Christopher S. Brehm, declare under penalty of perjury that the foregoing answers are true and correct, to the best of my knowledge, information, and belief.

Christopher S. Brehm

CHRISTOPHER S. BREHM

Dated: Oct 1, 1997

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.

David H. Rubin

475 L'Enfant Plaza West, S.W.
Washington, D.C. 20260–1137
October 1, 1997