BEFORE THE
POSTAL RATE COMMISSION

POSTAL RATE AND FEE CHANGES, 2000	:	DOCKET NO. R2000-1

ANSWERS OF UNITED PARCEL SERVICE
WITNESS KEVIN NEELS TO INTERROGATORIES
OF THE UNITED STATES POSTAL SERVICE
(USPS/UPS-T1-38 through 44)
(July 3, 2000)

Pursuant to the Commission's Rules of Practice, United Parcel Service hereby files and serves the answers of UPS witness Kevin Neels to the following interrogatories of the United States Postal Service: USPS/UPS-T1-38 through 44.

Respectfully submitted,

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USPS/UPS-T1-38. Please refer to your testimony at page 48, line 4, to page 52, line 13, where you address Mr. Degen's argument that the existence of setup and takedown costs explains, in part, less than 100 percent volume-variability factors. On page 48, lines 5-8, you state that "Over at least some range of volumes, Mr. Degen is almost certainly correct. For small increases in volume, these costs will remain fixed and with growth, they will be amortized over ever larger volumes, giving the result that such operations will exhibit economies of scale." With Figure 8, on page 51, you depict "a situation in which costs increase in a stepwise fashion in direct proportion to volume."

a. Please confirm that, for the purposes of discussing Figure 8, it is possible to define "volume" as piece handlings (TPH or TPF)—i.e., the need to perform more piece handlings could result in "replication of a mail processing operation" and thus the "cost-volume" pattern you depict in Figure 8. If you do not confirm, please explain.

b. Please explain whether you believe the "range of volumes" within which setup and takedown costs "will remain fixed" is larger or smaller than the range of TPH or TPF volumes in Dr. Bozzo's dataset. Please provide and describe fully any quantitative evidence you use to support your statement.

c. Please explain whether you believe Dr. Bozzo's models incorporate any constraint or other feature that would prevent the results from indicating 100 percent (or greater) variability of MODS pool costs with respect to piece handlings if your depiction in Figure 8 were correct. If you believe that there are such constraint(s) or other feature(s), please describe each one, provide detailed citations to the portion(s) of LR-1-107 that show its implementation, and demonstrate mathematically how it would prevent

Dr. Bozzo's results from indicating 100 percent (or greater) variability of MODS pool costs with respect to piece handlings if your depiction in Figure 8 were correct.

d. Please explain whether you believe the "range of volumes" within which setup and takedown costs "will remain fixed" is larger or smaller than the range of volumes likely to result from projected volume changes between FY 1998 (the base year) and FY 2001 (the test year). Please provide and describe fully any quantitative evidence you use to support your statement.

Response to USPS/UPS-T1-38.

(a) Confirmed.

(b) The range of volumes within which setup and takedown costs will remain fixed is smaller than the range of TPH or TPF volumes in Dr. Bozzo's dataset. The evidence, which is discussed on page 52, lines 6-13, of my testimony, shows clearly that over the range of volumes in Dr. Bozzo's dataset, mail processing facilities incurred replication of setup and takedown costs.

In particular, Table 1 and Appendix B of my testimony present the number of machines per site for each PCN listed in the data provided by Dr. Bozzo in Library Reference USPS-LR-I-244. These data show that over the range of volumes between 1993 and 1998, facilities added a significant number of certain types of machines, some of which require setup and takedown costs.

A notable example in the list of equipment is the flat sorting machine. According to the testimony of Mr. Degen, flat sorting machines require setup costs. USPS T-16,

pages 42-43. The average number of flat sorting machines per facilities starts at 5.6 in 1993, and grows over the period covered by Dr. Bozzo's data to 11.3 machines per facility. UPS-T-1, Table 1, page 8. These data indicate that the flat sorting machines setup costs incurred by facilities in 1993 have not remained constant, but rather have more than doubled, over the time period and range of volumes in Dr. Bozzo's dataset.

(c) In general, I believe that a translog model, such as the one used by Dr. Bozzo, can yield 100 percent (or greater) variability. Whether Dr. Bozzo's model gives correct answers depends critically on the validity of the judgments on which his specification and estimation rely.

(d) The range of volumes within which setup and takedown costs will remain fixed will likely be smaller than the projected range of volumes between the base year and the test year. I base this judgment upon the change in machine counts observed in Dr. Bozzo's dataset, and the relationship between the length of the time period covered by his dataset, and the length of the interval between the base year and the test year.

USPS/UPS-T1-39. Please refer to your testimony, UPS-T-1, from page 52, line 16, to page 53, line 11, where you discuss what you characterize as the "implicit assumption that incremental volume growth occurs in the shoulders of the peak." You state, "There is no evidence to suggest that in fact, incremental volume growth would occur only in the shoulders of the peak."

a. Please provide a detailed citation to the portion of Mr. Degen's testimony that states the assumption that "incremental volume growth would only occur in the shoulders of the peak." If you claim that your statement is not made explicitly but is a clear implication of Mr. Degen's testimony, please reconcile your interpretation with the qualifications he includes in his testimony such as those that you quote at lines 1-2 of page 53.

b. Does your statement at lines 7-8 that, "if all volumes grow proportionately...one would expect staffing levels to grow proportionately in response" implicitly assume constant returns to "scale" (or size, density, etc., as appropriate)? That is, would it be more accurate to say "if all volumes grow proportionately ... one would expect staffing levels to grow proportionately in response if there are constant returns to scale"? Please explain any negative answer.

c. Do you contend that some types of volume growth (e.g., growth in deferrable "non-pref" volumes) cannot be handled in off-peak periods? If so, please explain fully the basis for your contention.

Response to USPS/UPS-T1-39.

(a) Mr. Degen explains that gateway operations require peak load staffing early in the day and late in the day to ensure that mail can flow quickly to outgoing sorting operations. In his operational analysis of the anticipated effects of increased volume on volume variability for the gateway operation cancellations, Mr. Degen says, "Increases in total collection volume that exhibit the current time distribution will not increase cancellation hours proportionately because the *full staffing early and late in the operation will not need to change*–some of the waiting time will simply be converted to processing time" (USPS-T-16, page 37, lines 20-24, emphasis added).

If Mr. Degen believes both that staffing is dictated by peak load volumes and that "full staffing early and late in the operation will not need to change" in response to increases in volume (USPS-T-16, page 37, lines 22-23), it must be the case that Mr. Degen assumes implicitly that incremental volume growth would occur not during the critical early and late periods, but rather in the shoulders of the peak.

(b) Mr. Degen uses his operational analysis that "full staffing early and late in the operation will not need to change" and that "some of the waiting time will simply be converted to processing time" to support Dr. Bozzo's estimated variabilities. Specifically, Mr. Degen says, "The estimated variability [for cancellation] may seem low, but it is wholly consistent with my operational analysis" (USPS-T-16, page 54, lines 10-11).

On page 53 of my testimony, I re-focus attention from the shoulders of the peak to the critical early and late periods – where volume growth should result in increased staffing needs. During these peak periods, Mr. Degen's rationale supporting Dr.

Bozzo's finding of increasing returns to scale is not defensible, as there is no idle waiting time that can be used to process incremental volume.

Thus, it would be accurate to say that if volume growth during the critical early and late periods were not to result in a proportionate growth in staffing, there would have to be a source of increasing returns to scale other than that identified by Mr. Degen.

(c) Yes, it is my contention that some types of volume growth cannot be handled in off-peak periods. Deferrable mail can, by definition, be deferred. However, not all mail is deferrable.

USPS/UPS-T1-40. Please refer to your testimony, UPS-T-1, at page 53, lines 19-20. You state, "The need to make full use of downstream processing capacity implies that gateway staffing levels are in fact volume driven."

a. Does "volume driven" necessarily imply 100 percent volume-variability (i.e., is it necessary that there also be constant returns to "scale" for "volume driven" to imply "100 percent volume variability)? Please explain fully any affirmative answer.

b. Do you contend that Mr. Degen describes gateway operations as non-volume-variable, or just less than 100 percent volume-variable? If you contend that Mr. Degen describes gateway operations as non-volume-variable, please reconcile your contention with Mr. Degen's testimony, at page 38, lines 11-13 of USPS-T-16, that "The overall volume-variability of the cancellation operation will tend to be less than 100 percent because of its role as a gateway with varying vehicle arrival times and volumes of collection mail that cannot be forecast with certainty."

c. Please confirm that your shapes-level analysis of Dr. Bozzo's data relates, among other things, hours in upstream gateway operations such as OCR, to volumes in downstream sorting operations that process letter mail. If you do not confirm, please explain fully.

Response to USPS/UPS-T1-40.

(a) No, but the operational analysis cited from my testimony (UPS-T-1, page 53, lines 19-20) is consistent with 100 percent volume variability.

(b) Just less than 100 percent volume-variable.

(c) Confirmed.

USPS/UPS-T1-41. Please refer to your testimony at page 72, lines 19-21. You state, "if an analysis is conducted at the plant level, it should account explicitly for the effects of changes in the network that alter the number, configuration or operation characteristics of plants."

a. Please confirm that the "pool total costs" for MODS cost pools reported in Table 1 of witness Van-Ty-Smith's testimony, USPS-T-17, reflect the costs for all facilities that have the corresponding mail processing operations in place. If you do not confirm, please explain fully.

b. Please confirm that any net expansion or contraction of a MODS operation between (say) FY 1998 and FY 1999 will be reflected in the difference between FY 1998 and FY 1999 "pool total costs" as computed by witness Van-Ty-Smith. If you do not confirm, please explain.

c. Please confirm that, holding the volume-variability factors constant, the "pool volume-variable costs" as computed by witness Van-Ty-Smith (or witness Sellick in UPS-T-2) will change between (say) FY 1998 and FY 1999 by the same proportion as the "pool total costs" change. That is, for a constant cost elasticity or volume-variability factor ε_i:

$$\Delta VC_i / VC_i^{98} = (\varepsilon_i C_i^{99} - \varepsilon_i C_i^{98}) / \varepsilon_i C_i^{98} = (C_i^{99} - C_i^{98}) / C_i^{98} = \Delta C_i / C_i^{98}$$

If you do not confirm, please explain.

d. Please confirm that the Postal Service's rollforward model accounts for, among other things, the effects on the Postal Service's future costs of planned deployments of capital equipment between the base year and test year. If you do not confirm, please

explain your understanding of how the rollforward model treats planned deployments of capital equipment.

Response to USPS/UPS-T1-41.

(a) Confirmed.

(b) Confirmed. These pooled total costs are used along with estimates of volume variability to construct estimates of volume variable pooled total costs.

(c) Confirmed.

(d) I confirm that the Postal Service's rollforward model reflects future costs of planned deployments of capital equipment between the base year and the test year. However, to the extent that these deployments are a response to growth in volume, their costs should be reflected in the calculation of volume variability. The Postal Service's approach to measuring volume variability does not reflect these costs.

USPS/UPS-T1-42. Please refer to your testimony at page 72, lines 9-10. Please confirm that, as a matter of economic theory, the "correct result" could be variabilities greater than, less than, or equal to 100 percent, depending on the degree of economies of "scale" (or size, density, etc., as appropriate) actually exhibited by mail processing operations.

Response to USPS/UPS-T1-42.

Confirmed.

USPS/UPS-T1-43. Please refer to your discussion of your "shapes level" variability analysis at pages 57-59 of UPS-T-1, and the econometric results you present in Appendix F.

a. Please provide, using the method you describe at page 40 of UPS-T-1, a table of the marginal cost implied by your "letters" models for a BCS piece handling (TPH or TPF, as appropriate), an OCR piece handling, an LSM piece handling, and a manual letter piece handling. Please also provide the table in Excel spreadsheet format.

b. Please provide, using the method you describe at page 40 of UPS-T-1, a table of the marginal cost implied by your "flats" model for an FSM piece handling (TPH or TPF, as appropriate) and a manual flat piece handling. Please also provide the table in Excel spreadsheet format.

c. Please provide, using the method you describe at page 40 of UPS-T-1, a table of the marginal cost implied by your "parcels" model for a SPBS piece handling (TPH or TPF, as appropriate) and a manual parcel piece handling. Please also provide the table in Excel spreadsheet format.

d. Please confirm that your "parcels" group excludes the manual Priority Mail cost pool. If you do not confirm, please explain.

Response to USPS/UPS-T1-43.

(a) The shapes level variabilities can only be used to estimate shapes-level marginal costs. They cannot be used to infer MODS-level marginal costs. Thus, I provide the only possible calculation of marginal costs using the letters variability – the

marginal costs of letters. Column (1) of the attached "Table Prepared in Response to USPS/UPS-T1-43" presents estimated marginal costs for letter processing, using 1998 data and the method described on page 40 of my testimony.

(b) See my response to USPS/UPS-T1-43(a) above. Column (2) of the attached "Table Prepared in Response to USPS/UPS-T1-43" presents estimated marginal costs for flats processing, using 1998 data and the method described on page 40 of my testimony.

(c) See my response to USPS/UPS-T1-43(a) above. The attached "Table Prepared in Response to USPS/UPS-T1-43" presents estimated marginal costs for parcels processing, using 1998 data and the method described on page 40 of my testimony.

(d) Confirmed.

Table Prepared in Response to USPS/UPS-T1-43

Site Id	LETTERS (1)	FLATS (2)	PARCELS (3)
1	0.198	1.617	4.418
2	0.357		3.921
3	0.204	1.172	4.495
4	0.199	1.483	2.750
5	0.170	1.355	3.944
6	0.239	1.479	1.509
7	0.203	1.434	4.458
8	0.181	1.571	3.332
9		1.179	
10	0.179	1.251	4.170
11		1.793	4.912
12	0.187	1.155	1.837
13	0.185	1.354	2.618
14	0.123	1.109	4.490
15	0.190	1.436	
16	0.151	1.670	3.982
17			
18			
19	0.440	1.726	
20	0.199	1.439	4.173
21	0.207	1.174	3.166
22	0.315	1.685	3.077
23	0.292	1.952	3.480
24	0.224	1.521	3.176
25	0.153	1.450	4.287
26	0.155	1.308	2.847
27			
28	0.278	1.498	1.758
29	0.164	1.132	1.524
30		1.299	1.854
31	0.162		
32	0.173	1.475	
33			
34	0.612	1.411	
35	0.137		
36	0.283	1.138	5.055
37			
38	0.252	1.761	
39	0.186	1.264	2.230
40	0.129		
41			
42			
43	0.137		2.865
44			
45	0.646	2.350	
46	0.122	0.964	

Table Prepared in Response to USPS/UPS-T1-43

Site Id	LETTERS (1)	FLATS (2)	PARCELS (3)
47	0.151		
48			3.404
49	0.156	1.772	1.651
50	0.228	1.255	2.287
51			
52	0.192	1.111	
53	0.191		2.318
54			
55	0.214	1.472	4.540
56			
57			
58	0.195	1.742	3.093
59	0.251	1.359	3.094
60		1.304	
61	0.172	1.614	2.708
62	0.152	1.283	3.483
63	0.172	1.263	
64			3.310
65	0.191	1.315	2.779
66	0.223	1.912	3.862
67	0.199	1.346	
68	0.241	1.225	1.327
69		1.443	
70	0.138	1.577	3.853
71	0.182	1.333	
72	0.219	1.689	3.380
73	0.397	1.802	3.305
74	0.178	1.619	5.685
75	0.161	1.454	1.662
76		1.866	3.940
77	0.159	1.507	3.845
78	0.249	1.676	5.715
79	0.239	1.517	3.579
80		1.070	5.590
81	0.169	1.432	3.102
82	0.212		3.361
83	0.187	1.629	7.444
84		1.085	2.351
85	0.166	1.282	
86			1.318
87			
88	0.117		
89		1.351	
90	0.150	1.240	6.833
91	0.167		
92	0.175	1.363	4.321

Table Prepared in Response to USPS/UPS-T1-43

Site Id	LETTERS (1)	FLATS (2)	PARCELS (3)
93	0.179	1.119	
94	0.263		2.754
95	0.107	1.035	
96		1.554	1.153
97	0.150	1.279	
98	0.171	1.337	7.541
99	0.143	1.196	3.648
100		1.276	
101	0.165		
102	0.146	1.250	1.524
103	0.156	1.230	
104	0.211		1.534
105	0.164	1.223	4.851
106	0.191	1.426	
107	0.151	1.566	3.235
108	0.199	1.351	
109	0.153	1.272	
110	0.160	1.257	
111	0.178	0.848	1.118
112	0.185	1.267	
113	0.156	0.981	1.332
114	0.163	1.211	3.498
115			2.592
116	0.176	1.512	
117			
118		1.363	2.223
119		1.350	2.259
120			3.810
121	0.198		1.384
122	0.169	1.135	1.975
123	0.147	1.006	1.987
124			
125	0.164	1.236	2.740
126			
127	0.122		
128			
129	0.176	1.451	3.217
130	0.144	1.404	
131	0.213	1.395	3.527
132	0.200	1.826	3.253
133			4.248
134	0.193	1.707	3.233
135	0.229	1.594	3.033
136	0.217	1.733	3.205
137	0.141	0.989	2.458
138	0.313	1.714	1.947

Table Prepared in Response to USPS/UPS-T1-43

Site Id	LETTERS (1)	FLATS (2)	PARCELS (3)
139	0.235	1.623	1.587
140	0.128	1.248	1.844
141	0.201	1.494	3.360
142			
143	0.200	1.477	2.001
144			
145	0.212	1.555	2.660
146	0.210	1.571	3.770
147	0.328	1.854	
148	0.186	1.265	2.829
149	0.164	1.301	4.597
150	0.265	1.765	3.256
151	0.216	1.856	
152	0.215	2.080	4.219
153	0.207	1.569	3.193
154	0.204	1.969	3.163
155	0.196		3.574
156	0.173	1.863	2.570
157	0.219	1.154	
158	0.187	1.133	
159	0.206	1.522	5.066
160	0.182	1.950	
161	0.153	0.999	
162	0.272	1.477	1.056
163	0.131	1.098	1.982
164	0.368	1.343	
165	0.141	1.057	
166	0.200	1.568	
167	0.200	1.389	1.884
168	0.302		1.493
169	0.216	1.236	2.064
170	0.172	1.379	
171	0.179	1.248	
172	0.188	1.486	3.052
173		2.101	
174	0.252	1.475	2.021
175	0.176	1.344	4.077
176	0.179	1.270	2.660
177			
178	0.181	1.303	
179	0.155	1.463	
180	0.182	1.719	0.902
181	0.194	1.353	1.888
182			
183	0.167	1.357	
184		1.314	2.345

Table Prepared in Response to USPS/UPS-T1-43

Site Id	LETTERS (1)	FLATS (2)	PARCELS (3)
185	0.213	1.575	
186	0.234	1.290	
187	0.190	1.531	
188	0.137	1.491	
189	0.175	1.363	
190	0.160	1.412	
191	0.290	1.181	
192	0.135	1.237	1.544
193	0.528	1.831	4.876
194	0.128	1.462	1.748
195	0.164	1.347	4.222
196			
197			
198	0.234	1.472	1.634
199	0.208	1.558	2.748
200	0.158	1.273	3.278
201	0.186	1.425	3.342
202	0.241	1.949	4.087
203	0.206	1.476	3.333
204	0.232	1.406	2.628
205	0.155	1.304	1.509
206	0.176	1.473	3.460
207	0.197	1.012	4.284
208	0.184	1.271	3.339
209	0.108	1.090	
210	0.160	1.598	2.434
211	0.173	1.673	
212	0.130	1.226	2.666
213	0.199	1.611	3.678
214	0.184	1.620	2.599
215	0.141	1.272	
216		1.297	3.349
217	0.233	1.692	3.634
218			
219		1.244	3.683
220	0.234	1.013	2.821
221		1.117	
222	0.236	1.235	2.948
223		1.147	
224	0.199	1.175	4.363
225	0.196	0.837	
226	0.193	1.194	1.563
227	0.152	1.179	1.108
228	0.126	1.176	
229		1.058	
230	0.201	1.458	

Table Prepared in Response to USPS/UPS-T1-43

Site Id	LETTERS (1)	FLATS (2)	PARCELS (3)
231			
232			
233	0.163	0.993	1.093
234	0.140	1.403	3.693
235	0.210	1.056	2.647
236	0.157		1.424
237	0.190	1.571	4.556
238	0.292	1.122	1.389
239		1.159	1.617
240		0.976	2.485
241		1.265	2.263
242	0.174	1.347	3.777
243	0.124	1.070	1.443
244	0.141		1.436
245	0.153	1.187	
246	0.303	0.961	
247	0.155	1.253	
248			
249	0.148	1.079	1.118
250			
251	0.219	1.051	1.402
252	0.157	1.366	
253	0.158		
254	0.164		1.094
255	0.141	1.357	3.663
256	0.176	1.109	
257		1.135	
258	0.103		14.968
259		1.160	3.689
260	0.203	1.283	1.708
261		1.136	
262	0.165	1.113	
263	0.187	1.298	4.936
264	0.122	1.125	
265	0.205	1.358	2.510
266			
267			
268	0.162	1.423	1.790
269	0.233	1.600	3.640
270	0.198	1.838	3.991
271	0.152	1.356	3.372
272	0.206	1.422	3.933
273	0.209	1.489	2.897
274	0.126	1.035	2.396
275	0.166	1.473	2.630
276	0.221	1.852	2.122

Table Prepared in Response to USPS/UPS-T1-43

Site Id	LETTERS (1)	FLATS (2)	PARCELS (3)
277	0.190	1.459	3.075
278	0.184	1.255	
279	0.101	1.015	2.621
280	0.121	1.389	2.622
281	0.154	1.171	2.695
282	0.258	1.692	4.366
283	0.217	1.291	2.697
284		1.216	3.601
285	0.177	1.118	
286	0.176	1.113	1.940
287	0.186	1.360	2.250
288		1.317	3.970
289	0.204	1.100	3.927
290	0.188	1.295	
291		1.066	2.658
292	0.136	1.110	3.006
293	0.145	1.086	1.924
294	0.134	1.057	2.363
295	0.124	1.432	
296	0.164	1.112	2.195
297	0.148		4.755
298	0.131	1.328	
299	0.154	1.213	
300	0.226	0.995	
301	0.122	0.983	1.559
302	0.112	0.903	1.360
303	0.110		
304	0.182	1.279	3.985
305	0.106		
306	0.134		
307	0.134	0.936	2.365
308	0.228	1.544	
309	0.147	0.989	10.215
310	0.258		
311	0.277	0.990	
312			
313	0.138		
314	0.198		
315	0.200	1.011	1.576
316			
317	0.221	0.934	
318	0.309		
319			
320			
321			

USPS/UPS-T1-44. Please refer to your testimony, UPS-T-1, at page 30, lines 17-22, where you discuss the use of cubic foot-miles as the "cost driver" for purchased highway transportation.

a. Is it your opinion that cubic foot-miles is an appropriate choice of cost driver for purchased highway transportation. If not, please explain.

b. Please refer to your statement, "To measure the contribution of a particular subclass to purchased highway transportation costs, all one need know is the number of cubic foot-miles." Does the quoted statement indicate your beliefs regarding the appropriate method to develop volume-variable cost by subclass for purchased highway transportation? If not, please explain.

Response to USPS/UPS-T1-44.

(a) Given the presently available data and analytical capability, it is an appropriate cost driver.

(b) In this portion of my testimony, I used this example to illustrate the characteristics and underlying assumptions of the cost driver/distribution key method of attributing cost. I did not intend to comment on how one should measure volume variability for purchased highway transportation. However, as I stated above in my response to USPS/UPS-T1-44(a), I believe that given the presently available data and analytical capability, cubic foot miles is an appropriate cost driver.

DECLARATION

I, Kevin Neels, hereby declare under penalty of perjury that the foregoing answers are true and correct to the best of my knowledge, information, and belief.

Kevin Neels

Kevin Neels

Dated: 7/3/00

CERTIFICATE OF SERVICE

I hereby certify that I have this date served the foregoing document by first class mail, postage prepaid, in accordance with Section 12 of the Commission's Rules of Practice.

Phillip E. Wilson, Jr.
Attorney for United Parcel Service

Dated: July 3, 2000
Philadelphia, Pa.

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