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Before the

UNITED STATES POSTAL RATE COMMISSION

In the Matter of: POSTAL RATE AND FEE CHANGE

Docket No. R2000-1

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BEFORE THE
POSTAL RATE COMMISSION

- - - - - - - - - - - - - - - - - - - -X
In the Matter of: :
POSTAL RATE AND FEE CHANGE : Docket No. R2000-1
- - - - - - - - - - - - - - - - - - - -X

Third Floor Hearing Room
Postal Rate Commission
1333 H Street, N.W.
Washington, D.C 20268

Volume XV
Monday, May 1, 2000

The above-entitled matter came on for hearing, pursuant to notice, at 9:32 a.m.

BEFORE:
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HON. W.H. "TREY" LeBLANC, COMMISSIONER
HON. DANA B. "DANNY" COVINGTON, COMMISSIONER
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C O N T E N T S

E X H I B I T S

PROCEEDINGS

[9:32 a.m.]

CHAIRMAN GLEIMAN: Good morning to all these smiling faces out here today. Today we continue our hearings to received testimony of Postal Service witnesses in support of Docket R2001.

Three witnesses are scheduled to appear today. I have the potential to mispronounce all three names, and let's see what my batting average is when I finish this next sentence.

The witnesses are Witness Bozzo, Witness Degen, and Witness Van-Ty-Smith. I got that right, thanks to Mr. Koetting's coaching last Friday night at 8:00.

Does any participant have a matter that they would like to address before we begin today?

MS. DUCHEK: Mr. Chairman, I have a brief one. There seems to have been a little bit of confusion among the parties as to the three witnesses and who was responsible for what.

So I thought it might be helpful ~~it if~~ if I just summarized that Dr. Bozzo does the econometrics for the variabilities; Witness Degen does the operational justification for the reasonableness of the variabilities, as well as the theory or rationale behind -- the why's, if you will, of the cost distribution; and Witness Van-Ty-Smith

is purely the mechanics ~~of~~ the how's ~~of~~ the cost distribution.

CHAIRMAN GLEIMAN: Does anyone find it troublesome that people reading Postal Service testimony get confused about what the witnesses are all about?

[Laughter.]

CHAIRMAN GLEIMAN: Before we get to the substance, which is difficult, in and of itself, well, we thank you, Ms. Duchek.

And if there is no one else who has anything -- ah, yes? I thought I would escape this morning.

MS. NOBLE: Good morning. I'm Ann Noble from Magazine Publishers of America. We have a few additional interrogatories to designate for Mr. Bozzo this morning.

CHAIRMAN GLEIMAN: Well, I'll tell you what, if we can just wait a moment, because we need to get the witness sworn in and get his testimony in the record.

MS. NOBLE: Sure.

CHAIRMAN GLEIMAN: I wouldn't go too far away from the microphone, if I were you.

MS. NOBLE: I won't.

CHAIRMAN GLEIMAN: We'll get to that in just a moment.

Ms. Duchek, do you want to introduce your witness?

MS. DUCHEK: Yes, the Postal Service calls Dr. A.

Thomas Bozzo.

CHAIRMAN GLEIMAN: For those of you who wondered why I stumbled over the word, today, one never knows whether a witness is going to be recalled or appear as a rebuttal witness later in the proceedings.

And if I were to include the word, today, in the oath, then we'd have to swear witnesses in all over again later, and I chose not to do that, if I don't have to.

Whereupon,

A. THOMAS BOZZO,

a witness, having been called for examination, and, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MS. DUCHEK:

Q Dr. Bozzo, I have previously given you two copies of a document entitled Direct Testimony of A. Thomas Bozzo on behalf of the United States Postal Service, designated as USPS-T-15.

Are you familiar with that document?

A Yes, I am.

Q Was it prepared by ~~your~~ you or under your supervision?

A Yes, it was.

Q Does it contain your errata of January 28th, 2000?

A It does.

Q Do you have any additional changes you wish to make today?

A Yes, I do.

Q Would you please indicate what they are?

A I have three, essentially typographical changes to the testimony. The first is on page 44 of the testimony, line 17, after Volume 2; Appendix F should be inserted to clarify the citation.

Second, on page 58, line 2; the reference should be to Appendix C instead of Appendix D.

Finally, on page 121, line 6, the word that appears as capital-T-A-B-L and the numeral, 3, should simply be Table.

Q Do the copies of the document that I gave you contain those changes?

A They do.

Q With those changes, if you were to testify orally today, would this still be your testimony?

A It would.

MS. DUCHEK: Mr. Chairman, I'm going to give the two copies of the Direct Testimony of A. Thomas Bozzo on behalf of the United States Postal Service, USPS-T-15, to the Reporter, and I ask that they be entered into evidence.

CHAIRMAN GLEIMAN: Is there any objection?

[No response.]

CHAIRMAN GLEIMAN: Hearing none, the testimony is received into evidence, and is our practice, it will not be transcribed into the record.

[Direct Testimony of A. Thomas Bozzo, USPS-T-15 was received into evidence.]

CHAIRMAN GLEIMAN: Ms. Duchek, I believe that the witness is sponsoring some Category II Library References. Would you like to move those?

MS. DUCHEK: That is correct, Mr. Chairman. Dr. Bozzo is sponsoring LRI-107, and I ask that that be entered into evidence.

CHAIRMAN GLEIMAN: Library Reference I-107 will be entered into evidence and not transcribed into the record.

[Library Reference LRI-107 was received into evidence.]

CHAIRMAN GLEIMAN: Dr. Bozzo, have you had an opportunity to examine the packet of designated written cross examination that was made available to you earlier today?

THE WITNESS: I have.

CHAIRMAN GLEIMAN: And if those questions were asked of you today, would your answers be the same as those you previously provided in writing?

THE WITNESS: They would.

CHAIRMAN GLEIMAN: That being the case, if counsel could please provide two copies to the Court Reporter, I'll direct that the designated written cross examination of the witness be received into evidence and transcribed into the record.

[Designated Written Cross Examination of A. Thomas Bozzo was received into evidence and transcribed into the record.]

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, DC 20268-0001

Postal Rate and Fee Changes, 2000 Docket No. R2000-1

DESIGNATION OF WRITTEN CROSS-EXAMINATION
OF UNITED STATES POSTAL SERVICE
WITNESS A. THOMAS BOZZO
(USPS-T-15)

Party	Interrogatories
Association of American Publishers	AAP/USPS-T15-1, 4-8 AAP/USPS-T16-7 redirected to T15 AAP/USPS-T17-7 redirected to T15
Magazine Publishers of America	AAP/USPS-T16-7 redirected to T15 MPA/USPS-T15-1-2, 4-13
Office of the Consumer Advocate	AAP/USPS-T15-1-9 AAP/USPS-T16-7 redirected to T15 AAP/USPS-T17-7, 16 redirected to T15 ABA&NAPM/USPS-T21-9-10 redirected to T15 ABA&NAPM/USPS-T24-4 redirected to T15 ABA&NAPM/USPS-T28-39 redirected to T15 ADVO/USPS-T27-6 redirected to T15 DFC/USPS-T15-1 MPA/USPS-T15-1-13 OCA/USPS-T15-1-39, 41-64 OCA/USPS-T27-3a redirected to T15
United Parcel Service	AAP/USPS-T15-3, 5 MPA/USPS-T15-1-9, 12 OCA/USPS-T15-1-20, 50 UPS/USPS-T15-9, 13, 18-20, 23

Respectfully submitted,

Margaret P. Crenshaw

Margaret P. Crenshaw
Secretary

INTERROGATORY RESPONSES OF
UNITED STATES POSTAL SERVICE
WITNESS A. THOMAS BOZZO (T-15)
DESIGNATED AS WRITTEN CROSS-EXAMINATION

Interrogatory:	Designating Parties:
AAP/USPS-T15-1	AAP, OCA
AAP/USPS-T15-2	OCA
AAP/USPS-T15-3	OCA, UPS
AAP/USPS-T15-4	AAP, OCA
AAP/USPS-T15-5	AAP, OCA, UPS
AAP/USPS-T15-6	AAP, OCA
AAP/USPS-T15-7	AAP, OCA
AAP/USPS-T15-8	AAP, OCA
AAP/USPS-T15-9	OCA
AAP/USPS-T16-7 redirected to T15	AAP, MPA, OCA
AAP/USPS-T17-7 redirected to T15	AAP, OCA
AAP/USPS-T17-16 redirected to T15	OCA
ABA&NAPM/USPS-T21-9 redirected to T15	OCA
ABA&NAPM/USPS-T21-10 redirected to T15	OCA
ABA&NAPM/USPS-T24-4 redirected to T15	OCA
ABA&NAPM/USPS-T28-39 redirected to T15	OCA
ADVO/USPS-T27-6 redirected to T15	OCA
DFC/USPS-T15-1	OCA
MPA/USPS-T15-1	MPA, OCA, UPS
MPA/USPS-T15-2	MPA, OCA, UPS
MPA/USPS-T15-3	OCA, UPS
MPA/USPS-T15-4	MPA, OCA, UPS
MPA/USPS-T15-5	MPA, OCA, UPS
MPA/USPS-T15-6	MPA, OCA, UPS
MPA/USPS-T15-7	MPA, OCA, UPS
MPA/USPS-T15-8	MPA, OCA, UPS
MPA/USPS-T15-9	MPA, OCA, UPS
MPA/USPS-T15-10	MPA, OCA
MPA/USPS-T15-11	MPA, OCA
MPA/USPS-T15-12	MPA, OCA, UPS
MPA/USPS-T15-13	MPA, OCA
OCA/USPS-T15-1	OCA, UPS
OCA/USPS-T15-2	OCA, UPS

OCA/USPS-T15-3	OCA, UPS
OCA/USPS-T15-4	OCA, UPS
OCA/USPS-T15-5	OCA, UPS
OCA/USPS-T15-6	OCA, UPS
OCA/USPS-T15-7	OCA, UPS
OCA/USPS-T15-8	OCA, UPS
OCA/USPS-T15-9	OCA, UPS
OCA/USPS-T15-10	OCA, UPS
OCA/USPS-T15-11	OCA, UPS
OCA/USPS-T15-12	OCA, UPS
OCA/USPS-T15-13	OCA, UPS
OCA/USPS-T15-14	OCA, UPS
OCA/USPS-T15-15	OCA, UPS
OCA/USPS-T15-16	OCA, UPS
OCA/USPS-T15-17	OCA, UPS
OCA/USPS-T15-18	OCA, UPS
OCA/USPS-T15-19	OCA, UPS
OCA/USPS-T15-20	OCA, UPS
OCA/USPS-T15-21	OCA
OCA/USPS-T15-22	OCA
OCA/USPS-T15-23	OCA
OCA/USPS-T15-24	OCA
OCA/USPS-T15-25	OCA
OCA/USPS-T15-26	OCA
OCA/USPS-T15-27	OCA
OCA/USPS-T15-28	OCA
OCA/USPS-T15-29	OCA
OCA/USPS-T15-30	OCA
OCA/USPS-T15-31	OCA
OCA/USPS-T15-32	OCA
OCA/USPS-T15-33	OCA
OCA/USPS-T15-34	OCA
OCA/USPS-T15-35	OCA
OCA/USPS-T15-36	OCA
OCA/USPS-T15-37	OCA
OCA/USPS-T15-38	OCA
OCA/USPS-T15-39	OCA
OCA/USPS-T15-41	OCA
OCA/USPS-T15-42	OCA

OCA/USPS-T15-43	OCA
OCA/USPS-T15-44	OCA
OCA/USPS-T15-45	OCA
OCA/USPS-T15-46	OCA
OCA/USPS-T15-47	OCA
OCA/USPS-T15-48	OCA
OCA/USPS-T15-49	OCA
OCA/USPS-T15-50	OCA, UPS
OCA/USPS-T15-51	OCA
OCA/USPS-T15-52	OCA
OCA/USPS-T15-53	OCA
OCA/USPS-T15-54	OCA
OCA/USPS-T15-55	OCA
OCA/USPS-T15-56	OCA
OCA/USPS-T15-57	OCA
OCA/USPS-T15-58	OCA
OCA/USPS-T15-59	OCA
OCA/USPS-T15-60	OCA
OCA/USPS-T15-61	OCA
OCA/USPS-T15-62	OCA
OCA/USPS-T15-63	OCA
OCA/USPS-T15-64	OCA
OCA/USPS-T27-3a redirected to T15	OCA
UPS/USPS-T15-9	UPS
UPS/USPS-T15-13	UPS
UPS/USPS-T15-18	UPS
UPS/USPS-T15-19	UPS
UPS/USPS-T15-20	UPS
UPS/USPS-T15-23	UPS

Response of United States Postal Service Witness Bozzo
To Interrogatories of Association of American Publishers

AAP/USPS-T15-1 On page 32 (line 18) and page 33 (line 1) of your testimony, you state "[w]hether the Postal Service's actual plans and procedures are cost minimizing is beyond the scope of this testimony." With respect to this statement, please confirm that neither you nor any other USPS witness in this case has analyzed or addressed in any way whether the Postal Service's actual plans and procedures are cost minimizing. Please provide a full explanation for your answer.

AAP/USPS–T15–1 Response.

The presence of the cited passage in my testimony indicates that I address the issue of cost minimization in some way, therefore I cannot confirm the statement. The primary purpose of the full passage that includes the quoted statement—see USPS-T-15 from page 32, line 1, to page 34, line 2—was to indicate that my analytical methods for estimating volume-variability factors are applicable whether or not the Postal Service's plans and procedures are cost minimizing. However, I confirm that I did not analyze whether or not those operating plans and procedures are cost minimizing. Whether any other Postal Service witness in this case has addressed cost minimization in any way is beyond the scope of my testimony, although I am not aware of any who have.

Response of United States Postal Service Witness Bozzo
To Interrogatories of Association of American Publishers

AAP/USPS-T15-2 On page 107 of your testimony at Table 3, you present a summary of sample selection rules for various MODS cost pools. Please provide the same information shown on Table 3 for the following MODS cost pools:

a. MECPARC "Mechanized Parcels"

b. LD43 "LDC 43 – Unit Distribution Manual"

c. LD44 "LDC 44 – Post Office Box Distribution"

d. LD48 "LDC48– Customer Service/Spec. Service"

e. LD49 "LDC 49 – Computerized Forwarding System"

f. MODS 99 1 Supp-F1

g. MODS 99 1 Supp F4

AAP/USPS–T15–2 Response.

The table referenced in the interrogatory provides a summary of the *effect* of the sample selection rules on the regression samples for the mail processing operations I analyzed econometrically. I did not conduct an econometric analysis for any of the MODS operations listed in the interrogatory. Therefore, no comparable information exists. Please also see USPS-T-15 at pages 133-135 for additional discussion.

Response of United States Postal Service Witness Bozzo
To Interrogatories of Association of American Publishers

AAP/USPS-T15-3 On page 109 (lines 14-16) of your testimony, you state that for manual parcel operations, "a non-negligible fraction of the observations" or 3.8%, report fewer than forty work-hours per quarter. With respect to this statement, please provide all underlying data used to derive the figure of 3.8%.

AAP/USPS–T15–3 Response.

The referenced percentage (as well as a corresponding percentage for the manual Priority operation group) was intended to be calculated from the data in Table 3, at page 107 of USPS-T-15. The TSP output files from which I obtained the observation counts in Table 3 are provided in USPS-LR-I-107. However, it appears the percentages were transcribed incorrectly. The correct percentages are 3.6% and 1.3%. The derivation is provided in the table below.

Column	(1)	(2)	(3)	(4)
Item	Non-missing observations	Observations passing threshold check	Difference	Percent difference
Column source	USPS-T-15, Table 3, "Non-missing" column	USPS-T-15, Table 3, "Threshold" column	Col. 1-Col. 2	Col. 3/Col. 1
Manual parcels	5835	5625	210	3.6%
Manual Priority	5717	5644	73	1.3%

Response of United States Postal Service Witness Bozzo
To Interrogatories of Association of American Publishers

AAP/USPS-T15-4 On page 109 of your testimony (lines 16-19), you state "[e]xamining the data, I found evidence that hours, volumes, or both are likely to be erroneous for most of the manual parcel and manual Priority Mail observations removed from the sample by the threshold check." With respect to this statement, please identify and provide all manual parcel data examined by you and a description of the procedure used to conclude that "hours, volumes or both" were likely to be erroneous.

AAP/USPS–T15–4 Response.

The data I analyzed are provided in the reg9398.xls data file in USPS LR-I-107.

The summary analysis upon which the quoted statement is based is provided in USPS-T-15, at page 100 (Table 4).

Response of United States Postal Service Witness Bozzo
To Interrogatories of Association of American Publishers

AAP/USPS-T15-5. On page 126 or your testimony at Table 9, you compare volume variability for manual parcels in BY 1996 (R97-1) and BY 1998. The variability measured for manual parcels in BY 1998 is 32.2% greater than the estimate prepared by Dr. Bradley in R97-1. Please explain why the volume variability for manual parcels has increased so dramatically since R97-1.

AAP/USPS–T15–5 Response.

Please see USPS-T-15 at page 127, lines 5-8, where I state, "[T]here are large upward revisions to the manual parcel and Priority variabilities, due largely to the application of tighter sample selection rules." The specific sample selection rule to which I refer in the statement is the productivity check. Please see USPS-T-15 at pages 101-102 and 110-112 for a discussion of the productivity checks applied in my study and Dr. Bradley's study.

Response of United States Postal Service Witness Bozzo
To Interrogatories of Association of American Publishers

AAP/USPS-T15-6 On page 135 (lines 13-15) of your testimony, you state that "[i]nsofar as the Postal Service does not have additional evidence that might persuade the Commission to adopt Dr. Bradley's models and results, it was decided to use the previously accepted variability method for the BMCs." With respect to this statement:

a. Please provide any calculations performed by you or any other Postal Service witnesses that illustrate the effect of Dr. Bradley's models and results on BMC costs in this case.

b. Please state if, and when, the Postal Service intends to update Dr. Bradley's BMC models.

AAP/USPS–T15–6 Response.

a. The data required to compare the effect of Dr. Bradley's estimated BMC volume-variability factors may be found in witness Degen's testimony in Docket No. R97-1, USPS-T-12 at page 15, and witness Van-Ty-Smith's testimony in Docket No. R2000-1, USPS-T-17 at page 25. In the attached table, I compute the BY 1998 volume-variable costs that would be obtained by applying Dr. Bradley's Docket No. R97-1 volume-variability factors to the BY 1998 BMC cost pools, and the percentage difference between that figure and the BY 1998 BMC volume-variable costs using the method proposed by the Postal Service.

b. Please see the responses to OCA/USPS-T15-19 and 20.

Attachment 1
Response to AAP/USPS-T15-6
Page 1 of 1

Comparison of BMC Volume-Variable Cost under Alternative Volume-Variability Methods

(1)	(2)	(3)	(4)	(5)	(6)
SAS cost pool code	Pool Total Cost, BY 98	Pool Volume-Variable Cost, BY98	Docket No. R97-1 Volume-Variability Factor	BY 98 Volume-Variable Cost, using Docket No. R97-1 Variabilities	% Difference due to Variabilities
Docket No. R2000-1, USPS-T-17, page 25			Docket No. R97-1, USPS-T-12, page 15	Col. 2 x Col. 4	(Col. 5 – Col. 3) /Col. 2
PLA	207,947	196,718	53.3%	110,836	-41.3%
OTHR	251,839	248,565	60.5%	152,363	-38.2%
PSM	92,698	92,698	91.2%	84,541	-8.8%
SSM	34,213	34,213	99.1%	33,905	-0.9%
SPB	64,180	64,180	73.6%	47,236	-26.4%
NMO	33,824	33,824	67.2%	22,730	-32.8%
Total	684,702	670,198		451,610	-31.9%

Response of United States Postal Service Witness Bozzo
To Interrogatories of Association of American Publishers

AAP/USPS-T15-7 On page 136 (lines 5-9) of your testimony, you state "I cannot rule out the possibility that the PIRS data issues are serious, but note that the PIRS workload data would have to be so noisy as to be useless in order for the IOCS-based method not to significantly overstate the BMC volume-variable costs relative to Dr. Bradley's methods." With respect to this statement, please provide any mathematical examples that demonstrate or illustrate the magnitude of the difference in volume variability for BMC costs that is produced using the IOCS-based method as compared to Dr. Bradley's methods.

AAP/USPS–T15–7 Response.

Please see the response to AAP/USPS-T15-6(a).

Response of United States Postal Service Witness Bozzo
To Interrogatories of Association of American Publishers

AAP/USPS-T15-8 On page 137 (lines 14-15) of your testimony, you state that "[a]dditionally, descriptions of platform activities have long recognized that vehicle arrivals and departures are also drivers of platform workload." With respect to this statement, please confirm that the Postal Service has not incorporated vehicle arrivals and departures as cost drivers for platform activities in any of the cost studies filed in this case. If you cannot confirm, please provide an explanation and identify the costs studies that incorporate vehicle arrivals and departures as cost drivers.

AAP/USPS–T15–8 Response.

The Postal Service's other cost studies are beyond the scope of my testimony, therefore I cannot confirm or deny the statement. However, I am not aware of any studies that incorporate this information.

Response of United States Postal Service Witness Bozzo
To Interrogatories of Association of American Publishers

AAP/USPS-T15-9 On page 138 (lines 13-17) of your testimony, you state "I explored the applicability of data on the number of truck arrivals and departures from the TIMES system for use as a platform cost driver." Please provide a full description and summary of your use of the TIMES system to analyze platform costs. In addition, please explain when the TIMES system was first developed and used by the Postal Service.

AAP/USPS–T15–9 Response.

Please see my response to MPA/USPS-T15-1. It is my understanding that the TIMES system was in operation as of FY 1996. I do not know when the development of the system was started.

Response of United States Postal Service Witness Bozzo
To Interrogatories of Association of American Publishers
(Redirected from Witness Degen, USPS-T-16)

AAP/USPS-T16-7. On page 69 of your testimony, you describe the estimated volume variabilities developed by Postal Service witness Bozzo (USPS-T-15) for allied operations that were not incorporated by the Postal Service in R2000-1. Please provide any estimates or analyses that shows the effect on mail processing costs that would result if Dr. Bozzo's analyses of the variabilities of allied operations had been incorporated into the current filing.

AAP/USPS-T16-7 Response.

In the attached table, I have provided a comparison of the Postal Service's BY98 volume-variable costs for the MODS Platform, Opening, and Pouching cost pools with the results that would obtain from the use of the estimated volume-variability factors I provided in response to MPA/USPS-T15-1. The table follows the approach of the response to AAP/USPS-T15-6. I am aware of no other analyses showing the effect of my estimated allied labor variabilities on mail processing volume-variable costs.

Attachment 1
Response to AAP/USPS-T16-7
Page 1 of 1

Comparison of Volume-Variable Cost for MODS Platform, Opening, and Pouching Cost Pools under Alternative Volume-Variability Methods

(1)	(2)	(3)	(4)	(5)	(6)
SAS cost pool code	Pool Total Cost, BY 98	Pool Volume-Variable Cost, BY98	Variability from MPA/USPS-T15-1 results	BY 98 Volume-Variable Cost, using MPA/USPS-T15-1 Variabilities	% Difference due to Variabilities
Docket No. R2000-1, USPS-T-17, page 24			USPS LR-I-178, vv-allied-v2.out	Col. 2 x Col. 4	(Col. 5 – Col. 3) /Col. 2
1PLATFRM	1,052,585	943,115	54.30%	571,554	-35.30%
1OPPREF	711,487	683,028	64.20%	456,775	-31.80%
1OPBULK	305,417	305,417	56.90%	173,782	-43.10%
1POUCHNG	446,331	446,331	69.00%	307,968	-31.00%
Total	2,515,820	2,377,891		1,510,079	-34.49%

Response of United States Postal Service Witness Bozzo
To Interrogatories of Association of American Publishers
(Redirected from Witness Van-Ty-Smith, USPS-T-17)

AAP/USPS–T17–7. On page 12 (lines 1-2) of your testimony, you state that "[c]osts associated with 'overhead' activities are considered volume variable to the same degree as the non-overhead activities." With respect to this statement:

a. Please provide the justification for considering costs associated with "overhead" activities to be volume variable to the same degree as the non-overhead activities.

b. Please state the amount that costs associated with "overhead" activities were treated as costs attributable to the BPM subclass during BY 1998 and show where these costs are or would be included in (i) Exhibit USPS 11-A, appended to the testimony of Postal Service witness Meehan (USPS–T–11) and (ii) Exhibit USPS 14-A, appended to the testimony of Postal Service witness Kashani (USPS–T–14).

AAP/USPS–T17–7 Response.

a. Please see Docket No. R97-1, USPS LR–H–1, section 3.1.1 ("Activities Related to Mail Processing").

b. The volume-variable "overhead" costs for BPM would be included in the Cost Segment 3.1 results (and, of course, any totals including Cost Segment 3.1) provided in witness Meehan's Exhibit USPS-11A and witness Kashani's Exhibits USPS-14B through USPS-14K. It is my understanding that witness Kashani's Exhibit USPS-14A presents a variety of factors from the rollforward model that are substantially if not completely unrelated to the treatment of volume-variable costs for "overhead" activities.

Response of United States Postal Service Witness Bozzo
To Interrogatories of Association of American Publishers
(Redirected from Witness Van-Ty-Smith, USPS-T-17)

In the table provided in Attachment 1 to this response, I derive an estimate of the portion of the BPM volume-variable cost presented in witness Van-Ty-Smith's Table 3 (USPS–T–17 at pages 27-40) under the assumption that the "overhead" activities are volume-variable to the same extent as the non-overhead activities in the same cost pool. Please note that the Table 3 results are inputs to worksheet 3.1.1a in witness Meehan's Workpaper B; see the spreadsheet file CS03.xls in USPS LR-I-80

Attachment 1
Response to AAP/USPS-T17-7(b)
Page 1 of 2

Column		(1)	(2)	(3)
Column Source		USPS-T-17, Table 3	Analysis of LR-I-12 tallies; LR-I-106	Col. 1 x Col. 2
Cost Pool		BPM Volume-Variable Cost	Overhead Fraction	Est. BPM Volume-Variable "Overhead"
MODS 11	BCS/	11	26.2%	3
MODS 11	OCR/	5	26.8%	1
MODS 12	FSM/	3,766	25.5%	960
MODS 12	LSM/	1	18.7%	0
MODS 13	MECPARC	204	30.7%	63
MODS 13	SPBS OTH	3,602	34.5%	1,243
MODS 13	SPBSPRIO	100	31.8%	32
MODS 13	1SACKS_M	513	37.4%	192
MODS 14	MANF	1,652	25.0%	414
MODS 14	MANL	611	22.9%	140
MODS 14	MANP	1,830	32.2%	589
MODS 14	PRIORIT	179	30.2%	54
MODS 15	Y LD15	0	19.3%	0
MODS 17	1BULK P	37	43.7%	16
MODS 17	R 1CANCMP	127	26.1%	33
MODS 17	1OPBULK	2,496	37.3%	932
MODS 17	1OPPREF	4,144	36.2%	1,502
MODS 17	1PLATFRM	6,105	35.2%	2,146
MODS 17	1POUCHNG	1,747	34.9%	610
MODS 17	1SACKS_H	1,451	36.7%	532
MODS 17	1SCAN	130	30.7%	40
MODS 18	BUSREPLY	23	12.7%	3
MODS 18	EXPRESS	9	23.2%	2
MODS 18	MAILGRAM	0	32.4%	0
MODS 18	REGISTRY	5	18.1%	1
MODS 18	REWRAP	4	29.6%	1
MODS 18	1EEQMT	220	82.4%	182
MODS 19	INTL	163	23.3%	38
MODS 41	LD41	11	23.5%	2
MODS 42	LD42	0	24.9%	0
MODS 43	LD43	7,141	28.0%	1,997
MODS 44	LD44	580	18.1%	105
MODS 48	LD48 EXP	0	11.4%	0
MODS 48	LD48_SSV	720	11.5%	83

Attachment 1
Response to AAP/USPS-T17-7(b)
Page 2 of 2

Column		(1)	(2)	(3)
Column Source		USPS-T-17, Table 3	Analysis of LR-I-12 tallies; LR-I-106	Col. 1 x Col. 2
Cost Pool		BPM Volume-Variable Cost	Overhead Fraction	Est. BPM Volume-Variable "Overhead"
MODS 49	LD49	1,624	17.8%	289
MODS 79	LD79	176	14.0%	25
MODS 99	1SUPP_F1	491	13.0%	64
MODS 99	1SUPP_F4	1,452	14.1%	205
	Subtotal MODS	41,331		12,499
Non-MODS	ALLIED	5,965	23.7%	1,412
Non-MODS	AUTO/MEC	37	17.0%	6
Non-MODS	EXPRESS	0	9.1%	0
Non-MODS	MANF	3,293	12.7%	419
Non-MODS	MANL	74	13.9%	10
Non-MODS	MANP	8,749	21.5%	1,878
Non-MODS	MISC	1,197	11.3%	135
Non-MODS	REGISTRY	6	11.1%	1
	Subtotal Non-MODS	19,321		3,861
BMC	NMO	3,090	39.9%	1,233
BMC	OTHR	23,623	37.7%	8,911
BMC	PLA	19,998	31.6%	6,313
BMC	PSM	16,526	19.8%	3,271
BMC	SPB	2,412	31.8%	767
BMC	SSM	2,217	22.3%	493
	Subtotal BMC	67,866		20,989
Total		128,518		37,348

Response of United States Postal Service Witness Bozzo
To Interrogatories of Association of American Publishers
(Redirected from Witness Van-Ty-Smith, USPS-T-17)

AAP/USPS–T17–16. In footnote 20 on page 18 of you [sic] testimony, you state that "[i]n Docket No. R97-1, the Postal Service's proposed volume variability factor for the LD48 [sic] cost pool was 0. Thus, there were no volume-variable subclass costs associated with the LD48 ADM pool." With respect to this statement, please explain why the Postal Service proposed this volume variability factor for the LD48 [sic] cost pool in Docket No. R97-1 and identify all Postal Service testimony in R97-1 that explains the volume variability factor for the LD48 [sic] cost pool.

AAP/USPS–T17–16 Response.

I am unable to locate any Docket No. R97-1 testimony specifically justifying the zero variability for the LD48 ADM cost pool proposed in Docket No. R97-1. The justification for the variabilities applied to the other LDC 48 cost pools was provided in Dr. Bradley's Docket No. R97-1 direct testimony, USPS-T-14, at pages 89-90.

Response of United States Postal Service Witness Bozzo
to Interrogatories of American Bankers Association and National Association of Presort Mailers
(Redirected from Witness Smith, USPS-T-21)

ABA&NAPM/USPS–T21–9 From LR-I-83, page III-1, "Mail Processing Equipment Variabilities", please explain the variability number 1.005 for RBCS: workroom, and also RBCS: remote encoding site.

a. Does this number mean more than 100% volume variability?

b. How can a cost segment be more than 100% volume variable?

ABA&NAPM/USPS–T21–9 Response.

a. Yes, the cited point estimate of the RBCS volume-variability factor (originally presented by Dr. Bradley in Docket No. R97–1) corresponds to 100.5 percent. It is my understanding that the 0.5 percentage point difference from 100 percent is not statistically significant.

b. A cost segment (or, generically, cost pool) will be more than 100 percent volume-variable when the marginal cost exceeds the average cost. In this case, the volume-variable cost, which is marginal cost times volume, will exceed the total ("accrued") cost, which is average cost times volume. See also USPS LR–I–1, Appendix H. Note that whereas volume-variable cost can exceed total ("accrued") cost, incremental cost cannot.

Response of United States Postal Service Witness Bozzo
to Interrogatories of American Bankers Association and National Association of Presort Mailers
(Redirected from Witness Smith, USPS-T-21)

ABA&NAPM/USPS–T21–10.

a. From Page III-8 of LR-83 [sic], why are "non-MODS" cost pool costs essentially 100% volume variable for manual letters while "MODS" cost pool costs for the (same) manual letters are 73.5% volume variable?

c. From Page III-9 of LR-83 [sic], why are Standard A mail BMC "aggregate mail processing " labor costs nearly 100% volume variable (97.9%) while they are now claimed to be much less than 100% volume variable for First Class Mail?

ABA&NAPM/USPS–T21–10 Response.

There does not appear to be a part (b) to the interrogatory.

a. The volume-variability factor for the MODS manual letters cost pool is an econometric estimate. Comparable data with which a volume-variability factor for the non-MODS manual letters cost pool might be estimated do not exist, so volume-variable costs for non-MODS cost pools are computed using the Commission's method from Docket No. R97–1. Please see USPS–T–15 at pages 132-135 for further discussion.

c. The cited 97.9 percent variability is for all BMC mail processing operations, not for Standard A. The cited page of LR–I–83 also does not report variabilities for First-Class Mail, but rather for non-BMC operations and total mail processing (i.e., combined BMC and non-BMC operations). BMC volume-variable costs are computed using the Commission's method from Docket No. R97–1. Some MODS 1&2

Response of United States Postal Service Witness Bozzo
to Interrogatories of American Bankers Association and National Association of Presort Mailers
(Redirected from Witness Smith, USPS-T-21)

(non-BMC) cost pools employ econometric volume-variability factors, presented at pages 119-120 of USPS–T–15. Please also see USPS–T–15 at pages 132-133 and 135-136 for further discussion.

Response of United States Postal Service Witness Bozzo to Interrogatory of American Bankers Association and National Association of Presort Mailers (Redirected from Witness Miller, USPS-T-24)

ABA&NAPM/USPS-T24-4. By cost pool, how, if at all, do your volume variability factors in R2000-1 vary quantitatively from those used by USPS in R97-1? For each difference, list the difference, the cost pool, and explain why the volume variability factor has changed.

ABA&NAPM/USPS-T24-4.

For the requested quantitative differences, please compare witness Van-Ty-Smith's Table 1 (USPS-T-17 at page 24) with the analogous material from Docket No. R97-1, which was presented as witness Degen's Table 4 (Docket No. R97-1, USPS-T-12, at page 15). For the cost pools with econometric results presented in the tables at pages 119-120 of USPS-T-15, the volume variability factors used in Docket No. R2000-1 have changed from their Docket No. R97-1 values to match the results of the econometric analysis presented in USPS-T-15. For the remaining costs pools, the volume-variability factors applied in Docket No. R2000-1 result from an IOCS-based method similar to the Commission's method; see USPS-T-15 at pages 132-139 and USPS-T-17 at pages 11-12.

Response of United States Postal Service Witness Bozzo
To Interrogatory of American Bankers Association and National Association of Presort Mailers
(Redirected from Witness Daniel, USPS-T-28)

ABA&NAPM/USPS–T28–39. Please refer to your response to ABA&NAPM/USPS–T28–7. Do you have greater confidence in sample data that do not exhibit heteroskedasticity, and would you agree that your data plot in section 2, page 1 of 2 in LR–I–91, titled "Presort Letters Test Year Unit Costs by Detailed (1/2 ounce) Weight Increments" exhibits hetroskedasticity [sic]?

ABA&NAPM/USPS–T28–39 Response.

Heteroskedasticity refers to a random sample with observations that have nonidentical variances (a sample that is not heteroskedastic is termed homoskedastic). I do not believe there is any general reason to prefer a homoskedastic sample to a heteroskedastic sample. Whether one should have greater confidence in the heteroskedastic or homoskedastic sample depends on the variance of the homoskedastic sample. If the variance of the homoskedastic sample were as large as or larger than the largest variance in the heteroskedastic sample, then one would tend to prefer the heteroskedastic sample. If the variance of the homoskedastic sample were as small as or smaller than the smallest variance in the heteroskedastic sample, then one would tend to have "greater confidence" in the homoskedastic sample. Otherwise, the situation is ambiguous as some observations would have smaller variance in the heteroskedastic sample and the others would have smaller variance in the homoskedastic sample.

It is my understanding that the cited data in LR-I-92 are heteroskedastic.

Response of United States Postal Service Witness Bozzo
to Interrogatory of Advo, Inc.
(Redirected from Witness Crum, USPS-T-27)

ADVO/USPS-T27-6. Assume a cost pool has a variability less than one but has a constant unit marginal cost (at least for some operations within the cost pool), please confirm:

a. For those operations where there is constant unit marginal cost, avoidable unit cost equals constant unit marginal cost.

b. Applying a variability factor of less than one to the constant unit marginal cost reduces the estimate below its true value.

c. As long as there are any units to process, fixed costs in the cost pool are not avoidable with the elimination of some of the units.

If you cannot confirm, please explain why not.

ADVO/USPS–T27–6 Response.

a. Confirmed that the cost avoided by reducing output by one unit (i.e., on the margin) would be the hypothesized constant marginal cost.

b. I cannot provide a positive or negative confirmation without knowing the object to which "the estimate" refers and the technical meaning of "applying."

c. Partly confirmed. If some of the hypothesized "fixed" (non-volume-variable) costs were specific to a given product, then if eliminating "some of the units" were to eliminate all units of that product, a portion of the "fixed" costs might be avoided. If the hypothesized "fixed" costs are not product-specific, whether they are avoidable even with elimination of all units of output depends on whether they are incremental to the cost pool's output taken as a whole.

Response of United States Postal Service Witness Bozzo
to Interrogatory of Douglas F. Carlson

DFC/USPS-T15-1. Please refer to witness Meehan's response to DFC/USPS-T30-6 and -7. In responding to the following questions, please provide answers that a person who understands mail processing but who may not be familiar with jargon and other terms related to cost measurement and cost systems should be able to understand. Also, for these questions, if the mail-processing cost of mailing a return receipt back to the customer is identical to the mail-processing cost of a post card, you do not need to discuss the cost issues related to the mail-processing cost of post cards.

a. To the extent that your knowledge or testimony covers this issue, please explain why costs for certified mail, return receipt, and return receipt for merchandise have increased substantially since Docket No. R97-1. In answering this question, please break the total cost for each service into each processing step or other factor (e.g., window-clerk time, carrier delivery time, etc.) that contributes to the total cost of this service and explain the amount by which, and why, that cost has increased since Docket No. R97-1.

b. To the extent that your knowledge or testimony covers this issue, for every processing step or other factor (e.g., window-clerk time, carrier delivery time, etc.) that contributes to the cost of certified mail, return receipt, and return receipt for merchandise, please explain exactly how the cost of that step or factor is measured and calculated.

c. Please explain any assumptions implicit in methodologies that you use or advocate for measuring costs associated with certified mail, return receipt, and return receipt for merchandise or attributing costs to those services.

d. Please discuss any assumptions, changes in methodology, or other factors that may cause you to have any doubt about the accuracy of the costs for certified mail, return receipt, and return receipt for merchandise that are the basis for the Postal Service's proposed fees in this docket.

e. Has the Postal Service adjusted certified-mail costs to account for the electronic signature-capture process? Please explain and provide details.

Response of United States Postal Service Witness Bozzo
to Interrogatory of Douglas F. Carlson

DFC/USPS–T15–1 Response.

a. My testimony addresses changes to the volume-variability methods for mail processing operations ("cost pools"). Window service and carrier costs are beyond the scope of my testimony. The volume-variability factor for a mail processing operation indicates the fraction of the total costs of the operation that are distributed to the subclasses of mail and/or special services as volume-variable costs. Other things equal, a reduction in the volume-variability factor for an operation leads to a reduction in the volume-variable costs of the subclass(es) of mail and/or special services handled in that operation.

In the Base Year 1998 mail processing cost analysis it proposes in this docket, the Postal Service has adopted two major changes in the mail processing volume-variability methods for mail processing operations compared to the Docket No. R97-1 methods. First, for a collection of mail processing operations listed in my testimony, USPS-T-15 at pages 119-120, the Postal Service employs volume-variability factors based upon econometric models that update and extend Dr. Bradley's mail processing volume-variability analysis from Docket No. R97-1 (see Docket No. R97-1, USPS-T-14). Second, for the remaining mail processing operations, the Postal Service adopts the volume-variability method, based on In-Office Cost System (IOCS) data, employed by the Commission in Docket No. R97-1.

Response of United States Postal Service Witness Bozzo
to Interrogatory of Douglas F. Carlson

In the table below, I estimate the effect of the volume-variability changes on the Certified Mail cost input to witness Meehan's B-series workpapers for clerk and mail handler mail processing labor (Cost Segment 3); note that witness Meehan's workpapers do not separately identify return receipt costs. Specifically, I compare the Postal Service's BY 1998 costs with those that would have obtained if the Postal Service had used the volume-variability factors it proposed in Docket No. R97-1, holding other factors equal. No costs are distributed to Certified Mail in the mail processing operations covered by my econometric analysis, so the update to the volume-variability factors in those operations has no effect on Certified Mail costs. However, I estimate that approximately $9.52 million, or 29.9% of the BY 1998 Certified cost input of $31.865 million to witness Meehan's WS 3.1.1a, can be attributed to the adoption of the Commission's volume-variability method for the other mail processing operations instead of Dr. Bradley's Docket No. R97-1 method.

Response of United States Postal Service Witness Bozzo
to Interrogatory of Douglas F. Carlson

Estimated effect of BY1998 volume-variability changes on Certified Mail costs ($000)

	BY 1998 Method	BY 1998 costs using R97-1 variabilities, other factors equal	Difference
Cost pools w/ econometric variabilities	0	0	0
Cost pools w/o econometric variabilities	31,865	22,345	9,520
Total	31,865	22,345	9,520

The effects, if any, of other potential causes for the referenced cost changes are beyond the scope of my testimony.

b. Please see USPS-T-15 at pages 116-124 for a summary of the econometric methods I employ in my analysis and the main results. See witness Van-Ty-Smith's testimony, USPS-T-17, at pages 11-12 and USPS LR-I-106 for the computational methods used to determine the IOCS-based volume-variability factors.

c. My analysis is an element of the "volume-variability/distribution key" method for computing volume-variable costs for the subclasses of mail and special services. See USPS LR-I-1, Appendix H, and USPS-T-15 at pages 53-56 for a discussion. The IOCS-based volume-variability factors employed for the cost pools other than those covered by the econometric models described in my testimony embody assumptions,

adopted by the Commission for all mail processing cost pools in Docket No. R97-1, that classify activities recorded in IOCS as either 100% volume-variable or non-volume-variable.

d. I discuss shortcomings of the IOCS-based method for determining mail processing volume-variability factors at pages 5-13 of my testimony, USPS-T-15.

e. Carrier costs and adjustments to projected test year costs to account for new technology are beyond the scope of my testimony.

Response of United States Postal Service Witness Bozzo
to Interrogatories of Magazine Publishers of America

MPA/USPS–T–15–1. Please refer to Section VIIIB.3., where you describe your investigation and corroboration of Dr. Bradley's R97–1 results for the MODS allied operations. On page 138, you indicate that you investigated several different models that enhanced Dr. Bradley's work with data on additional cost drivers, specifically data on crossdocked containers, destinating volumes, and truck arrivals and departures.

a. Please describe the precise models that you investigated and the variability estimates you obtained for each. Please include descriptions of any and all alternate model specifications that you investigated.

b. Please provide the data and programs for performing the analyses described above in MPA/USPS–T–15–1 (a).

c. Please describe any tests of significance or specification that you performed on these models.

d. Please describe the statistical analyses underlying your conclusion on lines 14–17 of page 138 that Dr. Bradley's "proxy" cost drivers provide "the bulk of the explanatory power."

MPA/USPS–T–15–1 Response.

a. The labor demand models for allied operations that I investigated have the general form

$$hrs_{it} = f(TPH_{AUTOL,it}, TPH_{FSM,it}, TPH_{MANL,it}, TPH_{MANF,it};$$
$$DLETTERS_{it}, DFLATS_{it}, DPARCELS_{it};$$
$$CAP_{it}, DELS_{it}, WAGE_{it}, TREND_{it};$$
$$QTR2_{it}, QTR3_{it}, QTR4_{it})$$

where hrs_{it} is the number of MODS hours recorded for the allied operation in plant i and quarter t; $TPH_{AUTOL,it}$, $TPH_{FSM,it}$, $TPH_{MANL,it}$, and $TPH_{MANF,it}$ are the MODS piece handlings recorded for plant i and quarter t in the

automated/mechanized letters (OCR + LSM + BCS), FSM, manual letters, and manual flats cost pools, respectively; $DLETTERS_{it}$, $DFLATS_{it}$, and $DPARCELS_{it}$ represent ODIS destinating volumes of letters, flats, and parcels in plant *i* and quarter *t*; and the remaining variables are defined as they were in my direct testimony.

As I did with the estimation of labor demand functions for the sorting operations described in my testimony, I employed a flexible translog functional form when estimating the allied labor demand equations. Thus, each current period variable enters with (log) linear and (log) quadratic terms, as well as interaction terms with all other current period regressors. In addition, four lagged quarters of the volume-related drivers (TPHs and destinating volumes) enter with (log) linear and (log) quadratic terms, but are not interacted with the other variables. (For example, besides $\ln(TPH_{AUTOL,it})$ and its square, the model also includes $[\ln(TPH_{AUTOL,it})(-1)]$, $[\ln(TPH_{AUTOL,it})(-2)]$, $[\ln(TPH_{AUTOL,it})(-3)]$, and $[\ln(TPH_{AUTOL,it})(-4)]$ and their squares.) The trend enters in levels rather than logs, with linear and quadratic terms, and is interacted with all current period regressors. Finally, the seasonal (quarterly) dummy variables enter linearly in levels and are not interacted at all. Please see the computer programs vv-allied.tsp and vv-allied-v2.tsp, which will be provided in LR-I-178, for the exact specification of the model.

This model estimates many more parameters relative to that used to estimate mail processing labor demand in the direct distribution cost pools (136 versus 38, exclusive of the facility intercepts, autocorrelation coefficient, and standard error of the regression). For this reason, I was not surprised that some of the higher-order lagged terms were found to be highly collinear with other included variables. I therefore also experimented with specifications with fewer lags. See the vv-allied.out and vv-allied-v2.out files, which will be provided in LR–I–178, for the results.

b. I will provide two spreadsheets containing allied labor data sets in LR-I-178. The spreadsheet all9398.xls contains MODS workhours for the Platform, Opening Pref, Opening Bulk, and Pouching operation groups; destinating letter, flat, and parcel volumes from ODIS; facility square footage; and dummy variables indicating whether the facility is an ADC or AADC. The spreadsheets include a header row with variable labels. The data are organized such that when the header row is deleted, the data in all9398.xls align with the data provided in the reg9398.xls spreadsheet, provided in LR-I-107.

The spreadsheet platform.xls contains information on crossdocked containers and dock square footage from Christensen Associates data (from a different study than that described in LR-I-115), matched MODS data on "direct" piece handlings and platform workhours, PERMIT data on bulk entered mail

volumes, and truck arrivals and departures from TIMES or the analogous form 5398 data. These data are organized as four weekly observations (from October 19, 1996 to November 15, 1996) for each of seventy-six surveyed facilities, for a total of 304 observations. Data on other variables matched to this data set are not available.

Two TSP programs, vv-allied.tsp and vv-allied-v2.tsp, that estimate the general model described in part (a) will also be provided in LR-I-178, along with their output files. The programs provide OLS and feasible generalized least-squares (FGLS) estimates of the translog specification of the general model described in part (a), as well as the relevant elasticities evaluated at the sample arithmetic mean. The vv-allied.tsp program estimates the model with four lags of the piece handling and destinating volume variables; the vv-allied-v2.tsp program estimates the model with a single quarter lag of the piece handling and destinating volume variables. With appropriate modifications, specifications involving additional variables or alternative assumptions should be easily incorporated. Additionally, a simplified version of the model described in part (a) could be estimated using the data in the platform.xls spreadsheet.

c. The main statistical tests performed on these models include a Lagrange multiplier test of the pooled model against an error-components model (see my direct testimony, USPS-T-15, at 123 for a description); a Hausman test of

the random effects against the fixed effects formulation of the error-components model (ibid.); a version of the Durbin-Watson test for serial correlation, suitably modified for panel data (see Docket No. R97-1, USPS-T-14, at 48 for a description); and a t-test on the estimated volume-variability factor. See the vv-allied.out and vv-allied-v2.out files, which will be provided in LR–I–178, for the results.

d. I calculated the volume-variability factors for the allied labor models described in part (a) as the sum of the elasticities with respect to the piece handling variables and the elasticities with respect to the destinating volume variables. My statement was based on the observation that the piece handling elasticities constituted large fractions of the allied labor variabilities.

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MPA/USPS–T–15–2. Please refer to Section VII.C., where you discuss your alternate estimation methods.

a. Is it the case that the pooled and "between" estimation methods are identical except that the pooled model uses the full dataset and the "between" model uses only the mean of each variable for each facility? If this is not the case, please describe all other differences between the pooled and "between" estimation methods.

b. Please describe the general circumstances—according to standard econometric theory and practice—in which it is considered preferable to use averaged cross-section data rather than panel data when both are available. Similarly, please describe the general circumstances in which it is considered preferable to use panel data rather than averaged cross-section data. In each case, please briefly explain the rationale for these preferences or provide appropriate citations to such explanations contained in standard econometric references.

c. Please confirm that the effect of using the mean of each variable for each facility is to remove information from the dataset about the nature of volume-variability within facilities. If this is not the case, please explain why it is not.

d. Please explain the difference (if any) between measuring volume-variability between facilities and measuring it within facilities in terms of the economic meaning of the demand function that is being measured in each case.

MPA/USPS–T–15–2 Response.

a. Mostly, yes. Note that as I implemented the procedures for Section VII.C of my testimony, both the pooled ordinary least squares (OLS) and between estimators use the same underlying set of observations, so the pooled OLS estimator does not use a "fuller" data set than the between estimator in one

sense. I believe a better characterization would be that the pooled OLS estimator uses the data *in panel form*, whereas the between estimator uses only the facility means of the data. Another difference is that there is no need to compute regression results adjusted for autocorrelation of the disturbances, since the between estimator is a type of cross-section estimator.

b. I do not believe that there are any circumstances of general applicability in which using only the individual means of the data would be preferred over using the data in panel form, given the availability of both. Two texts frequently cited in Docket No. R97-1, Hsiao's *Analysis of Panel Data* and Greene's *Econometric Analysis*, actually lack index entries for the between estimator. Greene and Hsiao only mention the between estimator in the context of demonstrating the algebraic fact that the pooled OLS estimator and generalized least squares (GLS) estimators such as the random effects model can be expressed as a weighted average of the within and between estimators.

The use of panel data, and more specifically estimation techniques such as the fixed-effects ("within") and random-effects estimators, has several well-known advantages. As summarized by Hsiao, these are:

> (1) identification of economic models and discrimination of competing economic hypotheses, (2) eliminating or reducing estimation bias, and (3) reducing problems of data multicollinearity. (*Analysis of Panel Data*, p. 213.)

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The classic specification question in panel data analysis is not whether to use the panel data versus facility averages (or aggregated time series data), but rather whether to apply the fixed-effects, random-effects, or pooled OLS estimators to the data in panel form. See Hsiao, *Analysis of Panel Data*, pp. 41-49.

The underlying theoretical problem with the between estimator is that it is a biased and inconsistent estimator of the slope coefficients β_k of a general "error components" regression model with the form:

$$y_{it} = \alpha_i + \sum_{k=1}^{K} \beta_k x_{k,it} + \varepsilon_{it}, \qquad (1)$$

unless the individual intercepts (or "fixed effects") α_i are uncorrelated with the other regressors (a special case of which is identical or "pooled" intercepts). Most sources that state the result clearly, such as Davidson and MacKinnon (*Estimation and Inference in Econometrics*, Oxford University Press, 1993, p. 323), do not prove the result explicitly, presumably since it follows directly from general omitted variables results, such as the proof in Schmidt's *Econometrics* at 39-40. In the cases in which it is unbiased and consistent, the between estimator is an inefficient estimator of the coefficients in (1), since (depending on the precise specification of the intercept and error terms) the best linear unbiased estimator would be GLS applied to the data in panel form (which may reduce to pooled OLS; see Hsiao, *Analysis of Panel Data*, p.

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34). In contrast, the within estimator produces consistent estimates of the coefficients of equation (1) regardless of the presence of correlation between the fixed effects and the other regressors (Id.), and is asymptotically efficient (as the number of time periods becomes large; see Hsiao, *Analysis of Panel Data*, p. 37).

Note that with appropriate definitions of the *x* variables, equation (1) can represent a very wide class of regression models, including the estimating equations on pages 117 and 118 of my testimony, USPS-T-15. Note also that in section VII.B.2 of my testimony, I report the results of statistical tests that reject the hypotheses that the intercepts are identical and that they are uncorrelated with the other regressors, indicating that the between model is indeed biased and inconsistent when applied to the mail processing data.

c. Partly confirmed. I believe a more precise statement would be that the effect of using the facility means is to lose all information about within-facility variations of any sort in the data. As I state in my testimony at pages 67-71, exploiting the within-facility variations in the data is extremely important for the accurate estimation of volume-variability factors, particularly given the importance of distinguishing the effects of mail volume from those of correlated non-volume factors (e.g., network effects) and unobserved fixed factors.

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d. I assume that "measuring volume-variability between facilities" means, technically, estimating the labor demand relationship using the between model (I read "within facilities" the same way). As Hsiao's enumeration of the advantages of panel data suggests—see the response to part (b) of this interrogatory, above—some types of economic relationships may be difficult or impossible to identify and estimate using cross-section or aggregate time series analysis.

For the most part, though, I see the between and within estimators simply as alternative strategies for estimating the labor demand functions underlying the Postal Service's operating data. Given labor demand functions with the form of equation (1), the within estimator is consistent (unbiased) whenever the between estimator is also consistent (unbiased), and remains consistent (unbiased) in cases where the between estimator is inconsistent (biased). My specification testing (see USPS-T-15, section VII.B) indicates that the between estimates are, indeed, biased. Therefore, the question boils down to whether there is an economic interpretation to the potential bias or inconsistency due to misspecification of the between estimator (omitted variables bias). Since neither the direction nor the magnitude of the potential bias is easily knowable in advance, I believe there will be no stable economic interpretation of inconsistent results obtained from the between model. See also Mr. Degen's testimony for discussion of operational factors that give rise

to non-volume cost causing factors that may be correlated with, but not caused by, mail volumes (USPS-T-16 at 14; 18-23).

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MPA/USPS–T–15–3. Did you perform any alternate data scrubs that are not reported in USPS–T–15? If so, please describe each such data scrub and provide the results of any investigations you performed about the impact of the scrub on the data characteristics and the resulting volume-variability estimates.

MPA/USPS–T–15–3 Response.

No. I did not implement any other types of sample selection rules than those described in USPS-T-15.

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MPA/USPS–T–15–4. Please refer to Section VIII.B.1, page 134, where you state:

While witness Degen's testimony does not directly address these operations, many of the factors he identifies as consistent with lower volume-variability factors for Function 1 operations are also present in the analogous Function 4 and non-MODS operations.

Please identify the analogous pairings of Function 1 and Function 4 operations, and of Function 1 and non-MODS operations, for which there are similar factors that are consistent with lower volume-variability factors.

MPA/USPS–T–15–4 Response.

The following table matches Function 4 and non-MODS distribution and allied labor cost pools with analogous Function 1 cost pools. Note that the following table does not suggest exactly the same pairings as Dr. Bradley proposed in Docket No. R97-1 (see Docket No. R97-1, USPS-T-14). Witness Degen also discussed the rationale for some of Dr. Bradley's volume-variability assumptions for other operations without econometric variabilities in Docket No. R97-1 (Tr. 12/6385-6).

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Function 4 or non-MODS cost pool	Predominant activities	Analogous Function 1 cost pool(s)
LD41	Automated letter distribution (mostly CSBCS)	BCS
LD42	Mechanized flat distribution	FSM
LD43	Manual letter, flat, and parcel distribution; allied labor at stations and branches	Manual letters, manual flats, manual parcels; platform, opening, pouching
LD44	Manual distribution of letters and flats (to PO Boxes)	Manual letters, manual flats
Auto/Mec (non-MODS)	Automated letter distribution (mostly CSBCS)	BCS
Manual letters (non-MODS)	Manual letter distribution	Manual letters (Function 1)
Manual flats (non-MODS)	Manual flat distribution	Manual flats (Function 1)
Manual parcels (non-MODS)	Manual parcel distribution	Manual parcels (Function 1)
Allied labor (non-MODS)	Allied labor at non-MODS facilities	Platform, opening, pouching

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MPA/USPS–T–15–5. Please refer to Section II.B., page 19, where you state that the Commission's conclusion in R97–1 about biases introduced by Dr. Bradley's data scrubs is "simply unsupported by the record in that case." Please provide citations for the precise model comparisons that substantiate your statement.

MPA/USPS–T–15–5 Response.

The primary basis for the quoted statement is Dr. Neels's table comparing regression results from Dr. Bradley's preferred sample (i.e., "scrubbed" data) and results from the models re-estimated with "all usable" observations. This is the material found at the page (15618) I cite in volume 28 of the Docket No. R97-1 transcript. Dr. Neels's table reports results for 23 MODS and BMC operation groups. If the application of Dr. Bradley's "scrubs" imparted a large downward bias on his results, one would expect most or all of the variabilities from Dr. Neels's "all usable" exercise to be higher. However, according to Dr. Neels' results, the variabilities based on "all usable" observations are higher in eleven cases and lower in twelve. Since Dr. Neels's results fail to identify even a predominant direction, let alone a single direction, of the differences between the two sets of results, they are inconsistent with the presence of a large bias in either direction due to Dr. Bradley's "scrubs."

The composite variability (using BY96 cost pool weights; see also the response to MPA/USPS-T-15-8) for the cost pools in Dr. Neels's table is 5.4 percentage points lower using Dr. Bradley's preferred results (79.1 percent versus 84.5 percent). The 5.4 percentage point difference is slightly less than the average of

"a bit over 6 percentage points" reported by Mr. Higgins for the six letter and flat distribution cost pools at one of the pages I cite in volume 33 of the Docket No. R97-1 transcript (18019). The six cost pools discussed by Mr. Higgins account for a bit over two thirds of the overall difference. See spreadsheet MPA5.xls, which will be provided in LR-I-178. It is likely that at least a portion of the 5.4 percentage point net difference results from the admission of some highly erroneous data into the regressions in Dr. Neels's "all usable" results, but even if the entire difference could be attributed to bias, the composite variability would still be well below 100 percent.

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MPA/USPS–T–15–6. Please describe the method used to construct your facility capital index. Please describe and provide any additional data used to construct this index that have not already been described and provided in USPS–LR–I–107.

MPA/USPS–T–15–6 Response.

The general methodology for the construction of my facility capital index is described in the report, "USPS Quarterly Total Factor Productivity Methodology," which was provided by Mr. Degen as part of LR-H-272 in Docket No. R97-1. The dollar value of facility capital is deflated by a national capital price index. The national capital price index is a multilateral Tørnqvist index, computed by the "multilat" command in the LR-I-107 program load.qindex.epl. I am providing documentation of the methodology of the "multilat" command as Attachment 1 to this response. The spreadsheet Capital index.xls, which will be provided in LR-I-178, contains the requested data.

MULTILAT

Form Of Command

GROUP $pair_1$ $pair_2$ ... $pair_n$
MULTILAT (method, type, order) pname $
MULTILAT (method, type, order) qname $
MULTILAT (method, type, order) pname baseobservation $
MULTILAT (method, type, order) qname baseobservation $
MULTILAT (method, type, order) pname qname $
MULTILAT (method, type, order) pname qname baseobservation $
MULTILAT (method, type, order) pname baseobservation basevaluep $
MULTILAT (method, type, order) qname baseobservation basevalueq $
MULTILAT (method, type, order) pname qname baseobservation basevaluep $
MULTILAT (method, type, order) pname qname baseobservation basevaluep basevalueq $

where $pair_1$, ... are pairs of timeseries names that denote prices followed by quantities, quantities followed by values, or prices followed by values for each of the concepts to be aggregated.

Method is one off the method options listed below.

Type is one or both of the type options listed below.

Order is one of the order options listed below.

Baseobservation is the observation number in which the resulting indexes will be based. If a SAMPLE YEAR or SAMPLE PANEL YEAR statement is in effect, the YEAR synonym for the base period must be used. Baseobservation must be a number or a scalar.

Basevaluep is the value for the price index in the base observation. Basevaluep may be a number, a scalar name, a timeseries name, an asterisk (*), or the pound sign(#) . If a scalar name is used, the base observation value of the price index will equal the scalar. If a timeseries name is used, the base observation value of the price index will equal the base observation value of the timeseries. If an asterisk is used, the base observation value of the price index will equal the sum of the base observation values from the timeseries of values. (If the timeseries of values are not specified in the GROUP command, they are implicitly calculated by multiplying the price timeseries by the quantity timeseries.) If a pound sign is used, the price index will be scaled so that its mean is 1.

Basevalueq is the value for the price index in the base observation. Basevalueq may be a number, a scalar name, a timeseries name, an asterisk (*), or the pound sign(#) . If a scalar name is used, the base observation value of the price index will equal the scalar. If a timeseries name is used, the base observation value of the price index will equal the base observation value of the timeseries. If an asterisk is used, the base observation value of the price index will equal the sum of the base observation values from the timeseries of values. (If the timeseries of values are not

specified in the GROUP command, they are implicitly calculated by multiplying the price timeseries by the quantity timeseries.) If a pound sign is used, the price index will be scaled so that its mean is 1.

Description Of Command

Currently EPL has a wide array of price and quantity indexes that are based on "bilateral comparisons." These indexes are accessed through the command INDEX. These indexes are useful when one is using time series data on an individual firm. These indexes are less useful, however, when one is looking at a cross section of firms or a panel of firms. There is a class of multilateral price and quantity indexes that are specifically designed for those circumstances.

The first is the Multilateral Tornqvist index, developed by Caves, Christensen, and Diewert. This index is an extension of the Tornqvist index, which is currently an option in EPL. The other two indexes are the Gini-EKS system and the Fisher Own Share system, which are extensions of the Fisher Ideal Index, also a current option in EPL. The Gini-EKS and Fisher Own Share systems have recently been advocated by Diewert because the satisfy a large number of axiomatic properties and are exact for a flexible functional form (i.e. are superlative).

Options

Method options denote which index will be computed:

T	Tornqvist
G	Gini-EKS
F	Fisher Own Share

Type options denote the type of index to be computed:

P	Price Index
Q	Quantity Index

Order options describe the data used in the GROUP command:

PQ	The GROUP command contains price followed by quantity for each component.
QV	The GROUP command contains quantity followed by value for each component.
PV	The GROUP command contains price followed by value for each component.

The Multilateral Tornqvist Quantity Index

Suppose that there are N cross-sectional observations and K commodities that we wish to aggregate. (For purposes of constructing a Multilateral Tornqvist index for a panel consisting of N firms in T periods, one can think of the panel as a cross-section of NT observations.) We will use the following definitions:

p_{ik} = the price of commodity k for observation i (1)

q_{ik} = the quantity of commodity k for observation i (2)

s_{ik} = the value share of commodity k for observation i

$$= \frac{p_{ik} \cdot q_{ik}}{\sum_j p_{ij} \cdot q_{ij}} \quad (3)$$

$\overline{s_k}$ = the average share of commodity k

$$= \frac{1}{N} \cdot \sum_i s_{ik} \quad (4)$$

$$\overline{\ln(q_k)} = \frac{1}{N} \cdot \sum_i \ln(q_{ik}) \quad (5)$$

The Multilateral Tornqvist quantity index for observation i is then given by the formula:

$$Q_i = \exp\left(\sum_k .5 \cdot \left(s_{ik} + \overline{s_k}\right) \cdot \left(\ln(q_{ik}) - \overline{\ln(q_k)}\right)\right) \quad (6)$$

The Multilateral Tornqvist price index is obtained by substituting prices for quantities in equations (5) and (6).

The Gini-EKS Quantity Index

Using definitions (1) and (2), the Fisher Ideal Quantity Index between observations i and j is defined to be:

$$F(i,j) = \sqrt{\frac{\left(\sum_k p_{ik} \cdot q_{ik}\right) \cdot \left(\sum_k p_{jk} \cdot q_{ik}\right)}{\left(\sum_k p_{ik} \cdot q_{jk}\right) \cdot \left(\sum_k p_{jk} \cdot q_{jk}\right)}} \quad (7)$$

Then the Gini-EKS Quantity Index for observation i is given by the formula:

$$Q_i = \left[\prod_{j=1}^{N} F(i,j)\right]^{1/N} \quad (8)$$

The Gini-EKS Price Index is computationally parallel to the Gini-EKS Quantity Index. It is obtained by applying equation (8) to the set of Fisher Ideal Price Indexes.

The Fisher Own-Share Quantity Index

Using definitions (1) and (2), as well as the Fisher Ideal Quantity Index (7), the Fisher Own-Share Quantity Index for observation i is given by the formula:

$$Q_i = N \cdot \left[\sum_{j=1}^{N} F(j,i)\right]^{-1} \quad (9)$$

Note that the bilateral Fisher Ideal comparisons in equation (9) is the reverse of the comparisons in (8). Not also that the Fisher Ideal index has the property: F(j,i) = 1/F(i,j).

The ~~Fisher Own~~-Share Price Index is computationally parallel to the Fisher Own-Share Quantity Index. It is obtained by applying equation (9) to the set of Fisher Ideal Price Indexes.

Examples

1. GROUP P1 Q1 P2 Q2 P3 Q3 $
   MULTILAT(T,P,PQ) pind qind $

   The Multilateral Tornqvist price index will be computed and based such that observation 1 is equal to 1. The dual quantity index will be computed such that pind*qind is equal to the total value of the series being aggregated.

2. GROUP Q1 V1 Q2 V2 Q3 V3 $
   MULTILAT(F,P,Q,QV) pind qind $

   The Fisher Own-Share price index and quantity index will both be computed and based such that observation 1 is equal to 1.

3. GROUP P1 V1 P2 V2 P3 V3 $
   MULTILAT(G,P,PV) pind qind 3 * * $

   The Gini-EKS price index will be computed and based such that observation 3 is equal to the total value of the series being aggregated. The dual quantity index will be computed such that pind*qind is equal to the total value of the series being aggregated. Thus the second asterisk has no effect.

4. GROUP P1 Q1 P2 Q2 P3 Q4 $
   MULTILAT (T,P,Q,PQ) pind qind 1 * * $

   The Multilateral Tornqvist price index will be computed and based such that observation 1 is equal to the total value of the series being aggregated. The quantity index will also be computed and base such that observation 1 is equal to the total value of the series being aggregated.

5. GROUP P1 Q1 P2 Q2 P3 Q3 $
   MULTILAT(T,P,PQ) pind 1 # $

   The Multilateral Tornqvist price index will be computed and rescaled such that the mean of the index is equal to 1.

Notes

1. If only the P option is used, MULTILAT computes the price index. This price index is based to basevalup at observation baseobservation. The dual quantity index is also computed. This dual index takes values such that the price index times the dual quantity index equals the total value of the series being aggregated. The dual quantity index will not be rebased to basevaluq at the base observation. Basevalue q is ignored unless the Q option is specified.

   If only the Q option is used, the opposite to the preceding discussion will be computed. If both the P and Q options are used, INDEX computes price and the quantity indexes and dual indexes are not computed.

2. MULTILAT operates only on the observations in the current SAMPLE statement.

3. MULTILAT acts on the most recent GROUP command in effect. To compute several alternative indexes from the same component pairs it is not necessary to repeat the GROUP command.

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MPA/USPS–T–15–7. Please explain why you have chosen to use quarterly data rather than accounting period data.

MPA/USPS–T–15–7 Response.

Several factors motivated the decision to use quarterly data rather than accounting period (AP) data for my preferred model. These include:

- Using quarterly data mitigates several types of potential data errors. Data errors (particularly those due to sporadic errors such as data entry failures) that would be large relative to high frequency data (daily, weekly) would be much smaller relative to larger aggregates of the data. Quarterly data subject to "accounting adjustments" (data entries in one period that reverse an error in a previous period) will to be more accurate to the extent errors and the adjustments that reverse them occur in the same quarter but not the same accounting period.
- Using quarterly data facilitates combining the MODS data with data from other sources. My development of data from sources other than MODS follows procedures developed for the estimation of quarterly Total Factor Productivity (TFP) for Postal Service field units. See also the response to MPA/USPS-T-15-6.
- Using quarterly data permits longer-term labor adjustment processes to be specified with fewer variables than with AP data. Specifying lag terms of piece handlings up to one year, with first and second-order terms, requires eight regressors with quarterly data compared to twenty-six with AP data.

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Conserving degrees of freedom is not vital for the panel data estimators I recommend using, but it would be relatively more difficult to reliably estimate cross-section estimators such as the between estimator, the more regressors that need to be included in the model. Additionally, using fewer regressors may mitigate computational difficulties resulting from near-multicollinearity of the data.

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MPA/USPS–T–15–8. Please refer to Table 9 on page 126. The composite variability factor for BY 1998 appears to be a weighted average using the Pool Total Costs derived by witness Van-Ty-Smith and reported in Table 1 of USPS–T–17. Please confirm that this is the case. If it is not, please provide the appropriate formula for constructing the composite.

MPA/USPS–T–15–8 Response.

Confirmed. Strictly speaking, the "composite variability" is the (pool total) cost weighted average elasticity, or equivalently the ratio of volume-variable costs to pool total costs for the cost pools in question.

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MPA/USPS-T-15-9. Please refer to your testimony at page 136, lines 11-14 and footnote 70, where you state that the analysis in Witness Degen's testimony "suggests that the operational basis for reduced volume-variability factors (relative to the IOCS-based method) is at least as strong for allied operations as for sorting operations" and "also indicates that allied operations should be expected to have lower volume-variability factors than sorting operations." Please refer further to your testimony at page 126, Table 9, where you provide your econometrically derived volume-variable factors for 10 MODS cost pools. Finally, please refer to Witness Van-Ty-Smith's testimony (USPS-T-17) at page 24, Table 1, which provides the volume-variable factors used by the Postal Service for the cost segment 3 cost pools.

a. Out of the set of MODS cost pools for which you provide econometrically derived volume-variable factors in Table 9, please state the subset of cost pools that are for sorting operations. Please further provide a composite econometrically derived volume-variable factor for these sorting operation cost pools. (To calculate this composite, please use the same methodology that you used to calculate the composite volume-variability factor given in Table 9 of your testimony.)

b. Please state the set of mail processing cost pools that are for allied operations for which you have not provided econometrically derived volume-variable factors in your testimony.

c. For the allied operation cost pools listed in (b), please confirm that the volume-variable factors provided in Table 1 of USPS-T-17 are derived using the "IOCS-based method" to which you refer on page 136 of your testimony. If not confirmed, please explain.

d. For the allied operation cost pools listed in (b), please confirm that the volume-variable factors provided in Table 1 of USPS-T-17 are larger than the econometric composite volume-variable factor for the sorting operation cost pools derived in (a).

e. Please confirm that the use of allied operation volume-variable factors that are larger than sorting operation volume-variable factors is inconsistent with the operational analysis of Witness Degen, which "indicates that allied operations should be expected to have lower volume-variability factors than sorting operations." If not confirmed, please explain.

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MPA/USPS-T-15-9 Response.

a. All of the MODS cost pools presented in Table 9 (USPS-T-15, page 126) represent sorting operations except the Cancellation & Mail Prep cost pool. The composite variability for the remaining nine cost pools is 77.2 percent. A spreadsheet providing the calculation of the composite variability will be provided in LR-I-256.

b. The set of MODS allied labor cost pools without econometrically estimated volume-variability factors includes Mechanized Sack Sorting (1SackS_M) and the cost pools under the "Allied Operations" heading in witness Van-Ty-Smith's Table 1 (USPS-T-17, page 24), except Cancellation and Mail Prep.

c. Confirmed.

d. Confirmed.

e. Confirmed.

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MPA/USPS-T-15-10. Please refer to your answer to MPA/USPS-T-15-4, where you were requested to 'identify the analogous pairings of Function 1 and Function 4 operations, and of Function 1 and non-MODS operations, for which there are similar factors that are consistent with lower volume-variability factors."

a. Are there any analogous pairings between Function 1 and BMC operations, 'for which there are similar factors that are consistent with lower volume-variability factors "? Please identify any such analogous pairings.

b. Please refer further to your testimony at page 135 where you state: "I believe Dr. Bradley's models represent a much more accurate method for estimating the volume-variable costs in BMC operations than the IOCS-based method." You describe at page 135 of your testimony the data limitations that led you to exclude BMC operations from your econometric analyses of volume-variable factors. As a result, there are no econometric estimates for BMC cost pools for R2000-1 that are comparable to Dr. Bradley's for R97-1. In the absence of such econometric estimates, it would be possible to use the analogous pairings between Function 1 and BMC operations listed in (a) to obtain Function 1 volume-variable factors that could be applied to analogous BMC operations. In your opinion, would the use of such analogous econometric volume-variable factors also be a 'more accurate method for estimating volume-variable costs in BMC operations than the IOCS-based method"?

MPA/USPS–T–15–10 Response.

a. Based on my understanding of the testimony of Mr. Degen (USPS-T-16) and Ms. Kingsley (USPS-T-10), I identified analogous pairings of BMC and MODS Function 1 cost pools that are reported in the table provided as Attachment 1 to this response. Please note that the analogies refer to the general types of activities performed in the cost pools, and to general factors affecting the corresponding degrees of volume-variability. They should not be construed as claims that the paired MODS and BMC operations are identical.

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b. The MODS Function 1 operations analogous to BMC operations are primarily allied labor operations. Thus, it would be necessary to first identify appropriate econometric volume-variability factors to implement the pairings implied by the penultimate sentence of this part of the interrogatory. I believe the use of econometric results for analogous operations is potentially superior to the IOCS-based method in that it makes use of the qualitative operational information used to derive the analogies as well as the quantitative evidence for the analogous operations. Whether the operational analogy method is actually superior to the IOCS-based method for a given cost pool depends on whether the analogy neglects any salient characteristics of the BMC operation that would make its true degree of volume-variability closer to the IOCS-based result than the analogous econometric result(s). However, as I state in my testimony at page 135, lines 17-18, "I believe Dr. Bradley's efforts [to estimate variabilities for BMC operations], though flawed in some respects, provide the best available estimates of elasticities for BMC operations." Clearly, the available econometric results for MODS Function 1 operations, including the allied labor results provided in my response to MPA/USPS-T-15-1, are both more consistent with Mr. Degen's operational analysis and closer to Dr. Bradley's BMC variability estimates than the results of the IOCS-based method.

Attachment 1
Response to MPA/USPS-T-15-10(a)
Page 1 of 1

BMC cost pool (SAS Code)	Predominant Activities	Analogous MODS Function 1 cost pool(s) (SAS Code)
Platform (PLA)	Platform activities	Platform (1PLATFRM)
Allied Labor & Other Mail Processing (OTHR)	Allied labor for BMC sorting operations; other manual mail processing	Opening, pouching, manual sack sorting (1OPBULK, 1POUCHNG, 1SACKS_H)
Parcel Sorting Machine (PSM)	Mechanized parcel sorting	Mechanized Parcels (MECPARC)
Sack Sorting Machine (SSM)	Mechanized sack sorting	Mechanical Sack Sorting (1SACKS_M)
SPBS & IPP (SPB)	Mechanized sorting of small parcels and IPPs	SPBS (SPBS OTH)

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MPA/USPS-T-15-11. Please refer to your answer to MPA/USPS-T-15-4, where you were requested to 'identify the analogous pairings of Function 1 and Function 4 operations, and of Function 1 and non-MODS operations, for which there are similar factors that are consistent with lower volume-variability factors." Please refer also to Witness Van-Ty-Smith's testimony USPS-T-17, at Table 1, which provides the volume-variable factors used by the Postal Service for the cost segment 3 cost pools.

a. For each entry in the "Analogous Function 1 cost pool(s)" column of your answer to MPA/USPS-T-15-4, please provide the volume-variability factor of the associated Function 1 cost pool(s). In cases where you have supplied multiple analogous Function 1 cost pools, please provide a composite volume-variability factor that weights the individual analogous Function 1 cost pools in an appropriate way, and please also explain the weighting procedure used.

b. For each of the Function 4 and Non-MODS cost pools listed in your answer to MPA/USPS-T-15-4, please state whether you believe that the volume-variable factor provided in Table 1 of USPS-T-17 is a better or a worse estimate of the true volume-variable factor when compared to the volume-variable factors from the analogous Function 1 cost pools provided in (a). In each case, please explain how your belief is justified by the best currently available knowledge of these Function 4 and Non-MODS cost pools.

MPA/USPS–T–15–11 Response.

a. Please see the table provided as Attachment 1 to this response. The non-MODS allied labor variability is the composite MODS allied labor variability, using econometric results from MPA/USPS-T-15-1, from the material provided in response to AAP/USPS-T16-7. A spreadsheet providing the calculations for the LDC 43 and LDC 44 cost pools will be provided in LR-I-256. The remaining variabilities are the factors for the specified MODS cost pools.

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b. I believe the use of econometric results for analogous operations is potentially superior to the IOCS-based method in that it makes use of the qualitative operational information used to derive the analogies as well as the quantitative evidence for the analogous operations. Whether the operational analogy method is actually superior to the IOCS-based method for a given cost pool depends on whether the analogy neglects any salient characteristics of the Function 4 or non-MODS operation that would make its true degree of volume-variability closer to the IOCS-based result than the analogous econometric result(s). In contrast with the BMC situation described in my response to MPA/USPS-T-15-10(b), there is no quantitative evidence on the volume-variability factors for Function 4 or non-MODS operations to facilitate a comparison. However, I note that the analogous econometric results are consistent with the available qualitative evidence provided in Mr. Degen's operational analysis.

Attachment 1
Response to MPA/USPS-T-15-11(a)
Page 1 of 1

Function 4 or non-MODS cost pool	Analogous Function 1 cost pool(s)	Volume-variability factor from analogous cost pool(s)
LD41	BCS	0.895
LD42	FSM	0.817
LD43	Manual letters, manual flats, manual parcels; platform, opening, pouching	0.677
LD44	Manual letters, manual flats	0.677
Auto/Mec (non-MODS)	BCS	0.895
Manual letters (non-MODS)	Manual letters (Function 1)	0.735
Manual flats (non-MODS)	Manual flats (Function 1)	0.772
Manual parcels (non-MODS)	Manual parcels (Function 1)	0.522
Allied labor (non-MODS)	Platform, opening, pouching	0.600

Response of United States Postal Service Witness Bozzo
To Interrogatories of Magazine Publishers of America, Inc.

MPA/USPS-T15-12. Please refer to your Testimony at page 35, where you state: "the fixed effects capture those unobserved cost-causing factors that are constant (or fixed) over the sample period for the sites." Please further refer to your Testimony at pages 122-124 where you discuss the specification tests you conducted in relation to the fixed effects, random effects, pooled, and between models. Please further refer to Witness Degen's testimony (USPS-T-16) at page 22, where he states: "Plants in large urban areas tend to be less efficient than smaller plants..." Please further refer to Witness Degen's testimony (USPS-T-16) at pages 22-23, where he states: "the scarcity of large building sites and high land prices in large urban areas require plants to be in less efficient multi-story facilities." Please further refer to Witness Degen's testimony (USPS-T-16) at page 23, where he states: "the skill mix and discretionary effort of the workforce may vary with the relative wage level being paid by a plant. Postal Service wages are less competitive, relative to private sector wages, in high-cost areas." Please further refer to Witness Bradley's rebuttal testimony (R97-1 USPS-RT-5) at page 33, where he states: "Data exist for three characteristics of facilities, their age, the number of mail processing square feet contained in the facility and the number of floors that perform mail processing." Finally, please refer to USPS-LR-I-107 where you provide the mail processing facility data file REG9398.XLS.

a. Please confirm that the pooled and between model specifications do not include any variables that control for the urban or non-urban location of mail processing facilities.

b. Please provide an update of the REG9398.XLS data file that includes an urban dummy variable for the location of each facility. Please construct this dummy variable to indicate facilities located in or adjacent to major metropolitan areas. as measured by the population size of the relevant metropolitan area and reported in the latest issue of the *Geographical Reference Report* (Economic Research Institute, Redmond WA), or in a substantially similar source. Please use a population cutoff for determining the urban dummy value that appropriately captures the meaning of the term "large urban areas" as used by Witness Degen. Please further explain your choice of population cutoff.

c. Please provide an update of the REG9398.XLS data file that includes a field with the population density of the place (city, town, village, or county) where the street address of each facility is located, as indicated in the latest issue of the *Geographical Dictionary* (Merriam-Webster, Springfield MA), or in a substantially similar source. If an individual "facility" encompasses multiple street addresses in different places, please use the address corresponding to the location where the greatest amount of mail processing occurs.

Response of United States Postal Service Witness Bozzo
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d. Please confirm that the pooled and between model specifications do not include any variables that control for the number of floors of mail processing facilities.

e. Please provide an update of the REG9398.XLS data file that includes a field giving the number of floors that perform mail processing in each facility. If an individual "facility" encompasses multiple buildings, please use the number of floors that perform mail processing corresponding to the building where the greatest amount of mail processing occurs.

f. Please confirm that the pooled and between model specifications do not include any variables that control for the age of mail processing facilities.

g. Please provide an update of the REG9398.XLS data file that includes a field giving the year of construction of each facility. If an individual "facility" encompasses multiple buildings that were constructed in different years, please use the construction year corresponding to the building where the greatest amount of mail processing occurs.

h. Please confirm that the pooled and between model specifications do not include any variables that control for the level of private sector wages in the area where the facility is located.

i. Please provide an update of the REG9398.XLS data file that includes a field giving the average annual pay for the area where each facility is located, as indicated by the Bureau of Labor Statistics. If the facility is located in or adjacent to a metropolitan area, the average annual pay for the metropolitan area may be used for that facility. If the facility is not located in a metropolitan area, the average annual pay for the state where the facility is located may be used for that facility.

j. Please confirm that the pooled and between model specifications do not include any variables that control for the cost of living in the area where the facility is located.

k. Please provide an update of the REG9398.XLS data file that includes a field giving the cost of living for the area where each facility is located. Please use the cost of living index compiled by the American Chamber of Commerce Research Association (ACCRA) for the metropolitan area that is

closest to each facility. If available, a substantially similar cost of living index defined for metropolitan areas may be substituted for the ACCRA index.

MPA/USPS–T–15–12 Response.

a. I assume for this and other relevant parts of the interrogatory, the referenced "specification" is that used to develop the results presented in Appendixes E and F of USPS-T-15. Confirmed that the pooled and between specifications include no variables to control for characteristics of the location of the facility.

b. In LR-I-285, the data file MPA-12.xls provides a dummy variable for "large urban areas" that I believe is consistent with Mr. Degen's description. The criterion is a service territory population exceeding 1.5 million or a service territory population density exceeding 5,000 per square mile. The population estimates by 3-digit ZIP Code were obtained from 1996 Claritas data and mapped to facilities using the ZIP Code to facility mapping procedure employed for certain other variables in REG9398.XLS. See the response to part (c) for a description of the population density calculation.

c. In my opinion, the procedure specified in the interrogatory is not likely to produce population density data that accurately represent the facility characteristics described by Mr. Degen. In particular, it seems likely to overstate the applicable population density for facilities serving low-density territories, though conceivably it may also understate the density for facilities located in the outskirts of very high-density cities. In LR-I-285, the data file

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MPA-12.xls provides estimated area in square miles for each facility's service territory. The area by 3-digit ZIP Code were obtained from 1996 Claritas data and mapped to facilities using the ZIP Code to facility mapping procedure employed for certain other variables in REG9398.XLS. The population density of the service territory is computed as the ratio of the population variable described in the response to part (b) to the area variable described above.

d. Confirmed.

e. In LR-I-285, the data file MPA-12.xls provides a variable indicating the number of floors at the facility (or, as appropriate, the main mail processing facility). Note that I was unable to obtain the requested information for some facilities.

f. Confirmed.

g. In LR-I-285, the data file MPA-12.xls provides a variable indicating the year in which the facility (or, as appropriate, main the mail processing facility) was first occupied. Note that I was unable to obtain the requested information for some facilities.

h. Confirmed.

i. In LR-I-285, the data file MPA-12.xls provides 1996-1998 per capita income estimates for each facility's service territory. The data by 3-digit ZIP Code

were obtained from Claritas data and mapped to facilities using the ZIP Code to facility mapping procedure described in LR-I-107. It is my understanding that the Claritas income data are derived from decennial U.S. Census data, updated annually using a variety of local area sources.

j. Confirmed.

k. It appears that the ACCRA data specified in the interrogatory have some limitations that seriously limit their usefulness. There appear to be material omissions in the form of irregular reporting or non-reporting for a variety of areas, which may reflect the degree of attention (if any) the production of these data receive by the local Chambers of Commerce to which the responsibility for compiling the data apparently falls. The local origins of the data also raise the possibility that there may also be material inconsistencies in the methods used in various areas. Consequently, in LR-I-285, I provide annual CPI-W index numbers for an applicable area (either the metropolitan area or region). While the CPI-W is not a cost of living index per se, it provides offsetting advantages in the form of consistent methodology and the availability of regionally applicable values to supplement those for specific metropolitan areas. The attachment to this response provides the BLS series IDs from which the provided data are drawn.

BLS Series Ids used to develop response to MPA/USPS-T15-12(k)

CWUS0000SA0
CWUS0100SA0
CWUSA100SA0
CWUSA101SA0
CWUSA102SA0
CWUSA103SA0
CWUS0200SA0
CWUS0300SA0
CWUS0400SA0
CWUSA000SA0
CWUSA209SA0
CWUSA210SA0
CWUSA211SA0
CWUSA212SA0
CWUSA213SA0
CWUSA104SA0
CWUSA200SA0
CWUSA207SA0
CWUSA208SA0
CWUSA318SA0
CWUSA319SA0
CWUSA320SA0
CWUSA321SA0
CWUSA400SA0
CWUSA214SA0
CWUSA300SA0
CWUSA311SA0
CWUSA316SA0
CWUSA426SA0
CWUSA427SA0
CWUSA433SA0
CWUSD000SA0
CWUSA421SA0
CWUSA422SA0
CWUSA423SA0
CWUSA424SA0
CWUSA425SA0
CWUSX200SA0
CWUSX300SA0
CWUSX400SA0
CWUSD200SA0
CWUSD300SA0
CWUSX000SA0
CWUSX100SA0

Response of United States Postal Service Witness Bozzo
To Interrogatories of Magazine Publishers of America, Inc.

MPA/USPS-T15-13. Please refer to your Testimony at page 137, where you state: "The use of volumes from sorting operations as allied labor cost drivers has an operational foundation since one purpose of the allied labor operations is to prepare mail for sorting in the facility, and to prepare mail that has been sorted for shipment to other facilities," Please refer further to your Testimony at page 138. where you state: "In general, the results from models enhanced with these additional data indicated that Dr. Bradley's 'proxy' cost drivers-the volumes from piece sorting operations-still provided the bulk of the explanatory power." Finally, please refer to your analyses of allied operations provided in response to MPA/USPS-T-15-1.

a. Please confirm that the TPH data for the OCR, LSM, BCS, FSM, Manual Letters, and Manual Flats cost pools provide the bulk of the explanatory power for the regressions you performed for the Opening Unit-Preferred, Opening Unit-BBM, Platform, and Pouching Operations cost pools.

b. Please confirm that volumes at the piece-sorting operations listed in (a) are either the true drivers of a portion of allied costs or good proxies for the true drivers of a portion of allied costs,

c. Please confirm that the econometric evidence developed in this case cannot determine whether volumes at the piece-sorting operations listed in (a) are the true cost drivers of a potiion of allied costs or simply good proxies for the true cost drivers of a portion of allied costs.

MPA/USPS–T–15–13 Response.

a. Confirmed.

b. Confirmed.

c. Confirmed.

Response of United States Postal Service Witness Bozzo
to Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-1. USPS-LR-I-107 presents the programs and substantiation for your econometric work. You have provided a variety of files and comments in printed as well as electronic form. All of the analysis programs appear to be in TSP form.

(a) Please indicate why you chose TSP as the programming language in place of SAS or, alternatively, RATS, SYSTAT, STATA, or SPSS.

(b) Substantial analysis is available in the published literature on the computational and theoretical accuracy of SAS programs. Do you have such independent verification for TSP? If so, please provide it.

OCA/USPS-T-15-1 Response.

a. TSP is a well-known, sophisticated econometics research package. See, e.g., Julian Silk, "TSP 4.4: A Review," *Journal of Applied Econometrics*, Vol. 12, pages 445-453 (1997). TSP has a long history, originating with its initial development in the late 1960s by the noted economist Robert Hall. See Ernst R. Berndt, *The Practice of Econometrics: Classic and Contemporary* (Addison Wesley, 1991) at page 246. Several commercial econometrics packages are descended from Hall's work (see Berndt, op. cit., at page 15). See the response to part (b) of this interrogatory for discussion of TSP's accuracy.

TSP has been recognized for its comprehensive panel data estimation procedure, which I use in the programs provided in LR-I-107. See Jeffrey K. MacKie-Mason, "Econometric Software: A User's View," *Journal of Economic Perspectives*, Fall 1992, at page 183. The TSP PANEL command automatically estimates all of the contending estimators (fixed- and random-effects, pooled OLS, and between) from Docket No. R97-1 along with specification test statistics needed to discriminate

among the estimators, considerably simplifying the overall programming effort relative to that required by packages with less comprehensive panel data facilities.

It is my understanding that SAS has some noteworthy limitations for panel data analysis. According to SAS technical support information, as of SAS Release 6.12, PROC TSCSREG (the SAS panel estimation procedure) cannot compute residuals without an additional DATA step and related programming, which significantly reduces its utility for estimating the fixed-effects model with an autocorrelation adjustment. In versions prior to Release 6.12, PROC TSCSREG could not be run on unbalanced panel data and did not produce R-squared or other goodness-of-fit statistics.

Finally, TSP is fast, relatively inexpensive (less than $800 for the current shipping PC version 4.5), and is available for a range of computer operating systems.

b. I do not believe the accuracy of any statistical software package should be taken for granted. Studies exist that document computational inaccuracies in certain SAS routines. See, e.g., B. D. McCullough, "Assessing the Reliability of Statistical Software: Part II," *The American Statistician*, May 1999, at pages 149-159. Extensive computational accuracy benchmarks for TSP are available from the program's authors, using sources such as the National Institute of Standards and Technology's Statistical Reference Datasets archive. (The benchmarks are available on the internet at

http://www.tspintl.com/products/tsp/benchmarks/index.htm.) TSP fared well in a recent published comparison with EViews, LIMDEP and SHAZAM. See B. D. McCullough, "Econometric Software Reliability: EViews, LIMDEP, SHAZAM, and TSP," *Journal of Applied Econometrics*, Vol. 14, at pages 191-202 (1999). Note that I use the double precision storage option in my TSP programs (implemented via the "options double" statement in the first line).

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-2. Please provide SAS versions in printed as well as electronic form of the TSP programs used in your work.

OCA/USPS-T-15-2 Response.

It is my understanding that the TSP code I used for my econometric analysis could be translated into SAS code by those who prefer to use SAS rather than TSP. In particular, I understand that PROC TSCSREG in SAS/ETS or PROC MIXED in SAS/STAT could be used to compute the fixed effects estimator for my labor demand models, which I implemented with the TSP PANEL command. It is also my understanding that significant additional programming would be required to implement all of the relevant features of the TSP PANEL command in SAS code; see the response to OCA/USPS-T-15-1(a). I am not a SAS programmer and the programming details of the translation are beyond the scope of my testimony.

For further information on SAS PROC TSCSREG, see *SAS/ETS Software: Changes and Enhancements for Release 6.12* (SAS Institute, Inc., March 1997). For further information on SAS PROC MIXED, see *SAS/STAT Software: Changes and Enhancements through Release 6.12* (SAS Institute, Inc., March 1997). For further information on the TSP PANEL command, see *Time Series Processor Version 4.4 Reference Manual* by Bronwyn H. Hall and Clint Cummins (TSP International, 1998).

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-3. You have provided an Excel database of the data input to your programs in Library Reference USPS-L-I-107 [sic]. You subsequently scrub the data in various TSP programs. Please provide an Excel database and documentation of the scrubbed data set as developed in your TSP programs.

OCA/USPS-T-15-3 Response.

Please see my testimony, USPS-T-15 at pages 108-115, and LR-I-107 at pages 4 to 5 and 41 to 42, for descriptions and documentation of the sample selection procedures I applied. There is no separate "scrubbed" database. In LR-I-186, I will provide a spreadsheet, sampsel.xls, reporting the dummy variables (f*nn*_not4, where *nn* denotes the operation group number) indicating the regression sample for each operation group reported in USPS-T-15. The dummy variables have a value of one for included observations and zero for excluded observations.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-4. Please refer to page 20 of your testimony, lines 14-15, in which you state, "Having concluded that some selection criteria were warranted...."

(a) Please explain the basis for this statement.

(b) Did you have a statistical test to substantiate the statement? If so, please provide the relevant information.

OCA/USPS-T-15-4 Response.

a. Please see my testimony, USPS-T-15, at page 20, lines 3-13.

b. The quoted statement was not based upon the results of a statistical test.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-5. Please refer to page 20 of your testimony, lines 1-3, in which you state that, "The absence of evidence that Dr. Bradley's scrubs biased his estimated elasticities was not, however, sufficient to commend their continued use in my study."

(a) If you are verifying that Dr. Bradley was correct in his approach, do you have a statistical measure of how much better your approach is?

(b) If you are verifying that Dr. Bradley was wrong in his approach, please explain further.

OCA/USPS-T-15-5 Response.

a. I believe the quoted statement as written indicates that I am not "verifying that Dr. Bradley was correct in his approach." Please see also USPS-T-15 at page 21, lines 15-16.

b. Please see USPS-T-15 at pages 94 to 102 (Section VI.D).

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-6. You indicate in your testimony at page 21, lines 16-17, that, "First, I have fewer observations because of the use of quarterly data over a shorter time period...."

(a) Please explain why you used quarterly data instead of following the procedures Dr. Bradley used in Docket No. R97-1.

(b) Please explain why you chose to use a shorter calendar period of time than Dr. Bradley used in Docket No. R97-1 for your analysis.

OCA/USPS-T-15-6 Response.

a. Please see my response to MPA/USPS-T-15-7.

b. Please note that the time period covered by my data set, PQ2 of FY 1993 to PQ4 of FY1998, overlaps but is not a subset of the time period covered by Dr. Bradley's data set in Docket No. R97-1, PQ1 of FY 1988 to PQ4 of FY 1996. The shorter time interval I chose to use is the net result of adding two recent years (FY 1997 and FY 1998) whose data were unavailable to Dr. Bradley, and not using data prior to PQ2 of FY 1993.

My main motivation for employing data over a shorter time period was the desire to balance the potentially competing aims of efficient estimation and accurate estimation of the labor demand functions. Other things equal, increasing the number of observations by admitting earlier data would reduce the sampling error of the estimates. See also the discussion at USPS-T-15 at page 80, lines 3-9. However, extending the sample period back in time does not hold other things equal. It raises the possibility of introducing non-sampling errors in the estimates to the extent the earlier data are unrepresentative of current operations.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

Particularly insofar as the estimated standard errors of my elasticity estimates are relatively small, I believe that I have struck a reasonable balance between these competing aims.

I also considered two other factors. The composition of Dr. Bradley's data set changed with the addition of MOD2 (PC-MODS) sites in FY 1991; the earlier observations were entirely of MOD1 facilities, which tend to be larger. Using the later data avoids potential problems related to the composition shift. Additionally, the Postal Service's reorganization at the beginning of FY 1993 included a realignment of Finance numbers. Using the post-reorganization data eliminates a need for separate data mapping procedures for the earlier period.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-7. You state in your testimony at page 21, line 22, "Therefore, I believe the updated sample selection criteria are not 'excessive.' " Do you have a statistical test to substantiate this statement? If so, please provide it.

OCA/USPS-T-15-7 Response.

No, my statement is based on the fact that I developed my sample selection rules to admit some otherwise usable observations that Dr. Bradley's sample selection procedures would have excluded (see USPS-T-15 at page 21, lines 20-21), and on a comparison of Dr. Neels' report of observations "discarded" by Dr. Bradley's sample selection rules (Docket No. R97-1, Tr. 28/15611) to the closest comparable figures on observations remaining after my sample selection rules (see USPS-T-15, page 107, Table 3, "Minimum Obs" column).

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-8. Please refer to your discussion of the Manual Ratio at pages 23-25 of your testimony. Is it your conclusion that a computed manual ratio would measure the same degree of automation in small, medium, and large MODS sites, and that a computed manual ratio number would be comparable from site to site? Please explain your answer.

OCA/USPS-T-15-8 Response.

As the manual ratio variables measure the proportion (rather than the level) of manual handlings for the appropriate shape of mail, they can provide comparable information on the degree of automation in "small, medium, and large MODS sites." That is, I expect two sites with the same measured manual ratio would tend to employ a similar relative mix of processing technologies, but not necessarily the same scale of operations.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

~~OCA/USPS-T-15-9.~~ You indicate in your testimony at page 33, lines 2-4, that "The present analysis can be interpreted either in terms of the classical minimum cost function, ~~or a generalized~~ 'non-minimum cost function' with a generally similar structure." A review of standard economic theory indicates that economists derive a variety of marginal relationships in analyzing production, cost, and input factor demand functions. You have empirical data input from a variety of mail processing facilities for a variety of functions. Some Postal mail processing facilities and functions may be operated on a cost minimization basis, and other Postal processing facilities and functions could conceivably be operated inefficiently. As you use data as input to your econometric analyses from all facilities, are your conclusions independent of whether the facilities are cost minimizers?

OCA/USPS-T-15-9 Response.

Yes. See also USPS-T-15 at page 33, lines 5-19.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-10. In your testimony at page 40, lines 10-12, you assert that "...capital and labor variabilities will be identical, in equilibrium, under the assumption that the cost pool-level production (or cost) functions are *homothetic.*"

(a) Do you have any proof or indication based on actual Postal operations that the functions are in fact homothetic? If so, please explain.

(b) You quote Dr. Bradley's mail processing testimony in Docket No. R97-1 extensively; was homotheticity one of his assumptions?

(c) Please provide a derivation of your assertion in your testimony at page 40, lines 12-14, that "Homotheticity implies that changing the level of output of the operation will not alter relative factor demands such as the capital /labor ratio, in equilibrium (and other things equal)."

(d) What would be the impact of relaxing your assumption on homotheticity?

(e) Does one normally assume homotheticity in developing an econometric cost study? If not, under what circumstances is the homotheticity assumption either assumed or not assumed?

OCA/USPS-T-15-10 Response.

a. No, as the quoted statement indicates, the purpose of that section of my testimony is to describe the economic assumptions underlying the Postal Service's methodology.

b. Please note that I do not quote Dr. Bradley's testimony in this context. As far as I am aware, Dr. Bradley made no reference to non-labor costs or related assumptions in his Docket No. R97-1 mail processing testimony.

c. The statement follows from the fact that a homothetic production function has a constant marginal rate of technical substitution along any ray from the origin of

input space. See, e.g., Robert G. Chambers, *Applied Production Analysis* (Cambridge University Press, 1988), page 38.

d. The labor and capital variabilities would not necessarily be equal.

e. Given estimated capital demand functions, I believe the homotheticity assumption could be testable. I do not have an estimate of how common the homotheticity assumption is, though I note that some common functional forms such as the CES are intrinsically homothetic, and that Chambers describes homothetic production functions as "[p]erhaps the most important special class of production functions" (Chambers, op. cit., page 37). See also USPS-T-15 at page 40, lines 14-16 and footnote 12.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-11. You indicate in your testimony at pages 46-47 that the "manual ratio" variable is a measure of the degree of automation and is an indicator of the site's organization of mailflows in letter and flat sorting operations.

(a) Is the manual ratio dependent on the location of the mail processing facility within the network of mail processing facilities?

(b) Is the "manual ratio" dependent on the characteristics of the territory which the mail processing facility serves?

(c) Is the "manual ratio" dependent on the characteristics of the sorting patterns within the mail processing plant? If your answer is "yes", please explain in detail how the "manual ratio" is dependent on the characteristics of the sorting patterns.

(d) Is the "manual ratio" dependent on the amount of equipment in the mail sorting plant?

OCA/USPS-T-15-11 Response.

a. Conceivably, yes. To the extent network characteristics affect local mailflows and automation usage, they may affect the manual ratio variable.

b. See the response to part (a) of this interrogatory.

c. By construction, the manual ratio is indicative of the relative amount of automation usage in the "sorting patterns" at a site. I cannot specify additional detail without a more precise definition of "characteristics of the sorting patterns."

d. See USPS-T-15 at page 56, line 18, to page 57, line 5.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-12. You appear to base your analysis on TPF (total pieces fed). Please provide FHP (first handled pieces) and TPH (total pieces handled) for all cases in which you provide TPF, including the relevant Excel spreadsheets.

OCA/USPS-T-15-12 Response.

I use TPF as the output measure in automated and mechanized sorting operations (BCS, OCR, FSM, LSM, and SPBS). In the other operations I use TPH as the output measure (in those operations, TPH and TPF are conceptually identical). See USPS-T-15 at page 51, line 16, to page 52, line 4. Please note that I provide TPH data for all of the operation groups I studied in the reg9398.xls file in LR-I-107. See also USPS-T-15, page 89, at lines 4-5. I will provide the requested FHP data in the Excel spreadsheet file fhp9398.xls in LR-I-186. See also USPS-T-15, page 50, line 22, to page 51, line 6, for a discussion of FHP.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-13. You state in your testimony at pages 54-55 that, "The assumption implicit in the Postal Service's method that major changes in operations will not take the form of drastic intra-year changes is not very restrictive, given that most national deployments of new equipment and substantial changes to operations require years to complete." How many years are required for the national deployments and/or other activities to which you refer?

OCA/USPS-T-15-13 Response.

The quoted statement does not refer to a specific program or imply a specific length of time to complete a national equipment deployment. However, it is my understanding that major equipment deployments usually take more than one year. See, e.g., USPS-T-10 at page 11, lines 19-29.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-14. You state in your testimony at page 55, lines 3-6, that, "Likewise, it is hard to envision rapid and drastic changes in the average work content of the mail subclasses in the absence of correspondingly drastic changes to worksharing discounts and other economic incentives facing mailers." In order to have a basis for the above envisioning, please indicate the length of time after which one might find such changes.

OCA/USPS-T-15-14 Response.

The quoted statement does not imply a specific length of time. Note, however, that among the factors potentially affecting mailer behavior, mail classifications and postage rates will often be fixed for the period between omnibus rate cases. Mail classifications and postage rates may or may not change significantly over longer periods of time, depending on the contents of the Postal Service's requests, the Commission's recommended decisions, and/or the actions of the Governors of the Postal Service.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-15. Your testimony at page 56, line 9, indicates that the manual ratio should be treated as non-volume-variable. Could the manual ratio depend upon,

(a) the position of the mail processing facility in the network of mail processing facilities;

(b) the internal layout of the mail processing facility;

(c) the size of the mail processing facility as measured in TPF; and/or

(d) the total TPF in a given operation?

OCA/USPS-T-15-15 Response.

a. See the response to OCA/USPS-T-15-11(a)

b. It depends on the definition of "facility." While building layout issues such as space availability may affect the mix of processing in the plant versus annexes (if any), the manual ratio is developed from REGPO-level data and will thus represent the processing patterns at that level.

c. Other things equal, no. See USPS-T-15 at page 145, lines 5-10.

d. See USPS-T-15 at page 144, lines 1-4.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-16. You state in your testimony at page 65, lines 13-15, that your choice of a translog functions [sic] is chosen, at least in part, because, "This allows me to place as few mathematical restrictions as possible on the functional form of the underlying cost and production functions."

(a) What are the underlying restrictions that you have avoided?

(b) What are the underlying restrictions to which your study is subject?

(c) Your discussion of the translog function specifically mentions a cost function, but at the bottom of the page in footnote 25 you indicate that you are not pre-supposing a translog cost function. It would appear that your technical point is contradictory to your testimony. Please explain.

OCA/USPS-T-15-16 Response.

a. See USPS-T-15 at page 65, lines 10-13, where I state, "I chose... the translog functional form for the mail processing labor demand models. The translog [functional form] has general applicability because it provides a second order approximation to a function of arbitrary form." The restrictions I have "avoided" are those associated with the use of a functional form for the labor demand models that does not have the translog's approximation properties.

b. The choice of the translog functional form has the restrictions that the labor demand functions cannot be restricted to be globally concave or separable without losing the translog's approximation qualities. See also Robert G. Chambers, *Applied Production Analysis*, page 181.

c. In footnote 25, I state that "by specifying translog labor demand functions, I do not presuppose a translog cost function." My testimony does not state that I presuppose a translog cost function. There is no contradiction.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-17. In your discussion of translog cost and production functions you have not discussed a derived demand function--the labor demand function. However, the estimation of such a function appears to be the key focus of your testimony. The demand for labor by a firm is generally expressed in terms of the value of the marginal product of labor with quantities being expressed in terms of a wage rate and units of labor.

(a) What mathematical restrictions have you put on the function that you are trying to estimate?

(b) Does this labor demand function derive from another function, possibly cost and production functions? Please show this derivation, with particular attention to mathematical restrictions and/or assumptions that subsequently may lead to conclusions similar to your conclusions about homotheticity.

OCA/USPS-T-15-17 Response.

Your statement that I "have not discussed a derived demand function—the labor demand function" is incorrect. See, e.g., USPS-T-15 at pages 42-44 (Section IV.A., "Volume-variability factors can be obtained from labor demand functions defined at the mail processing operation (cost pool) level"). I also believe it would be more appropriate to say that the usual expression of a firm's labor demand relates "units of labor" (i.e., "real" labor input) to the level of output, the wage, and other variables that appear in the cost function (which results from the marginal analysis equating the value of the marginal product of labor with the wage rate).

a. I assume that by "mathematical restrictions... on the function [I am] trying to estimate" you mean restrictions on the parameters of the estimating equations reported in USPS-T-15 at pages 117 and 118. I have not imposed any restrictions on the parameters of the estimating equations.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

b. Yes, I refer to this relationship in USPS-T-15 at, e.g., page 42, lines 11-15. The mathematical relationship between the cost function and labor demand function is known as Shepard's Lemma, which provides that if the cost function is locally differentiable, the labor demand function is equal to the partial derivative of the cost function with respect to the wage. For a formal proof, see (e.g.) Hal R. Varian, *Microeconomic Analysis,* Second Edition (W. W. Norton, 1984), page 54. Homotheticity is not a necessary condition of Shepard's Lemma.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-18. You state in your testimony at page 66, lines 1-3, that, "Another important feature of the translog labor demand function is that it does not restrict the output elasticities (volume-variability factors) to be the same for every site or every observation...." Please state all additional important features of your translog labor demand function that have not been previously highlighted or stated.

OCA/USPS-T-15-18 Response.

Regarding my use of the term "another" in the quoted statement, there is not a "missing" important feature that has not been previously mentioned. The "other" advantage of the use of the translog function to which the quoted statement refers is the second-order approximation property discussed in USPS-T-15 at page 65, lines 10-20.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-19. In reference to non-MODS operations, in your testimony at page 134, lines 17-19, you state, "I expect that the Postal Service will be able to provide quantitative evidence to bolster the quantitative analysis for some of these operations in the future." Given your knowledge of the Postal Service's work in this area, when will this evidence be available?

OCA/USPS-T-15-19 Response.

The Postal Service already collects data that may eventually prove usable for estimation of volume-variability factors for some of the operations referenced in the quoted statement (see USPS-T-15 at page 134, lines 19-20). I am unable to estimate when the required analysis and related background work would commence or be completed.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-20. On page 135, line 7, of your prepared testimony, you indicate that time and resource constraints prevented the Postal Service from updating witness Bradley's BMC models presented in Docket No. R97-1.

(a) How much time, as measured in person years, did you estimate that such an effort would require?

(b) For purposes of comparison, how much time was spent in the development of the current analysis that you are presenting in this case, as measured in person years?

OCA/USPS-T-15-20 Response.

a. As a rough estimate, an update of Dr. Bradley's models that did not require the development of new data systems might require one to two person-years' work. If it were determined that a source of workload data other than PIRS were required, an indeterminate but very large additional amount of labor would be needed.

b. The analysis presented in USPS-T-15 involved approximately five person-years' work.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-21. The Excel workbook file "reg9398.xls" does not have any headings identifying the variables.

(a) Please provide the headings.

(b) There appear to be 19 variables. Is this correct, and is this the number of variables that the program reads?

(c) There are a large number of columns in the program. Please identify what is being read in each column.

(d) It appears that data may be expressed in thousands or millions. Please define the actual total number of units for each data item.

OCA/USPS-T-15-21 Response.

a. An Excel spreadsheet file containing the requested headings has been provided in LR-I-185.

b. See the response to POIR No. 1, item 8(a) and (b). I do not know by what accounting you conclude there are nineteen variables in the "reg9398.xls" file.

c. I assume you mean there are a large number of columns of data in the spreadsheet read by the TSP programs. See the response to part (a) and LR-I-107 at page 3.

d. I assume that by "total number of units for each data item" you mean the units of measure for each variable in the reg9398.xls data file. The units are as follows:

- IDNUM: N/A (this is a number identifying each site)
- QTR: see LR-I-107 at page 3.
- TPF, TPH: thousands of piece handlings.
- QICAP: N/A (this is an index number)
- All other variables: units.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-22. Please refer to USPS-LR-I-107, page 4. Please clarify the procedures for the computations when you state that the fourth quarter piece-handling and hours variables are reweighted to make them comparable with the corresponding values in other quarters. Please describe the reweighting approach in detail.

OCA/USPS-T-15-22 Response.

The relevant data are multiplied by a factor of 0.75 (3/4). See LR-I-107 at page 38, code following the comment heading "Rescales quarter 4 observations..."

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-23. Please refer to USPS-LR-107, pages 37 through 53. These pages present your TSP program "varitr-tpf-by.tsp."

(a) Please identify and document any computational steps that are not identified in the commentary. To the degree appropriate, page numbers and position on the page in the Library Reference should be adequate.

(b) Which section of the program sets parameter values and creates lists of variable names?

(c) Which section of the program reads the data from the Microsoft Excel version 4 workbook file "reg9398.xls"?

(d) Which section of the program provides the referenced data transformations? Please denote each transformation in terms of formula(s) and variables used and the resulting computed variable(s).

(e) Which section of the program reweights the fourth Postal quarter?

(f) Which section of the program calculates the LDC wages and the manual ratios?

(g) Which section of the program computes the operation-specific productivity filter bounds set?

(h) Please identify the portion of the program that computes the lagged TPF terms.

OCA/USPS-T-15-23 Response.

a. The commentary at pages 2-7 of LR-I-107 describes the program's computational steps.

b. See LR-I-107 at page 37, code following the comment line "Lists used to read data from Excel file"; LR-I-107 at pages 48-49, code following the comment lines "The

labor demand model specification (used only to indicate correspondence of parameters and variables)."

c. See LR-I-107 at page 38, code following the comment line "read in data from excel file."

d. The question does not refer to any specific data transformations. See, however, LR-I-107 at pages 38-39, 42-44, and 51.

e. See the response to OCA/USPS-T-15-22.

f. For the LDC wage, see LR-I-107 at pages 38-39, code following the comment line "set up wage variables." For the manual ratios, see LR-I-107 at page 40, formulas for "man" and "manf" variables.

g. See LR-I-107 at page 40, "set highprod..." and "set lowprod..." statements.

h. See LR-I-107 at pages 41-42, code following heading "Lagged piece handlings and associated flags."

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-24. Please refer to USPS-LR-I-107, pages 37 through 53. These pages present your TSP program "varitr-tpf-by.tsp." For each logical "loop" in your TSP program "varitr-tpf-by98.tsp," please identify the start and end of the loop and the variable(s) or procedures being effectuated. To the degree appropriate, page numbers and position on the page in the Library Reference will suffice.

OCA/USPS-T-15-24 Response.

The program contains four loops, each beginning with a "dot" statement and ending with "enddot." The first loop rescales the quarter 4 observations; see the response to OCA/USPS-T-15-22. The second loop begins under the comment line "identifies missing/bad cases of each LDC wage" (see LR-I-107 at page 39) and identifies observations with missing or invalid NWRS data. The third loop is the main loop, beginning under the comment line "Main loop estimates the model..." (see LR-I-107 at page 40) and ending near the end of the program at page 53. The fourth loop, within the main loop, beginning under the comment "Transforms data for FGLS – AR (1) disturbances" (see LR-I-107 at page 51), transforms each regressor to implement the FGLS estimation.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-25. Please refer to USPS-LR-I-107, pages 37 through 53. These pages present your TSP program "varltr-tpf-by.tsp." Please identify in your TSP program "varltr-tpf-by98.tsp" the section of the program that selects and computes the regressions. To the degree appropriate, page numbers and position on the page in the Library Reference will suffice.

OCA/USPS-T-15-25 Response.

The regressions are computed with the "panel" statements. See LR-I-107, page 49 (estimates the models without the autocorrelation adjustment) and page 51 (estimates the models with the autocorrelation adjustment.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-26. Please refer to USPS-LR-I-107, pages 37 through 53. These pages present your TSP program "varitr-tpf-by.tsp." Please identify in your TSP program "varitr-tpf-by98.tsp" the section that identifies all usable observations. To the degree appropriate, page numbers and position on the page in the Library Reference will suffice.

OCA/USPS-T-15-26 Response.

See LR-I-107 at page 40, code following the comment line "selects 'all usable' observations..." and at page 41, code following the comment line "flags observations with missing/invalid wage data."

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-27. Please refer to USPS-LR-I-107, pages 37 through 53. These pages present your TSP program "varltr-tpf-by.tsp." Please identify in your TSP program "varltr-tpf-by98.tsp" all filters. To the degree appropriate, page numbers and position on the page in the Library Reference will suffice.

OCA/USPS-T-15-27 Response

See LR-I-107, pages 41-42, code following the comment lines "threshold check,"

"productivity check," and "minimum observations check."

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-28. Please refer to USPS-LR-107, pages 37 through 53. These pages present your TSP program "varitr-tpf-by.tsp." Please identify in your TSP program "varitr-tpf-by98.tsp" the portion of the program involving calculation of the lagged TPF terms and the lagging of the variables. To the degree appropriate, page numbers and position on the page in the Library Reference will suffice.

OCA/USPS-T-15-28 Response.

See the response to OCA/USPS-T-15-23(h).

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-29. Please refer to USPS-LR-I-107, pages 37 through 53. These pages present your TSP program "varitr-tpf-by.tsp." Please identify in your TSP program "varitr-tpf-by98.tsp" the portion of the program that makes a final check for the eight observations, which need to be consecutive. To the degree appropriate, page numbers and position on the page in the Library Reference will suffice.

OCA/USPS-T-15-29 Response.

See the response to OCA/USPS-T-15-27. Note that the statement of the interrogatory is incorrect: the eight observations need *not* be consecutive. See USPS-T-15 at page 113, lines 5-6.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-30. Please refer to USPS-LR-I-107, pages 37 through 53. These pages present your TSP program "varltr-tpf-by.tsp." Please identify in your TSP program "varltr-tpf-by98.tsp" the portion of the program that transforms variables into their natural logarithms for the application of the transcendental logarithmic functional form. To the degree appropriate, page numbers and position on the page in the Library Reference will suffice.

OCA/USPS-T-15-30 Response.

See LR-I-107 at pages 42-43, code following the comment line "log levels and their squares."

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-31. Please refer to USPS-LR-107, pages 37 through 53. These pages present your TSP program "varitr-tpf-by.tsp." Please identify in your TSP program "varitr-tpf-by98.tsp" the portion of the program that effectuates the calculations of the 19 elasticities reported. To the degree appropriate, page numbers and position on the page in the Library Reference will suffice.

OCA/USPS-T-15-31 Response.

See LR-I-107 at pages 49-50, code following comment line "Elasticities w/r.t. piece handlings..." for the elasticities based on the regressions without the autocorrelation adjustment; LR-I-107 at pages 51-52, code following the comment line "Elasticities w/r.t TPH..." for the elasticities based on the regressions with the autocorrelation adjustment.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-32. Please refer to USPS-LR-I-107, pages 37 through 53. These pages present your TSP program "varltr-tpf-by.tsp." Please identify in your TSP program "varltr-tpf-by98.tsp" the portion of the program that defines each elasticity function, including the elasticity. To the degree appropriate, page numbers and position on the page in the Library Reference will suffice.

OCA/USPS-T-15-32 Response.

See LR-I-107, pages 45-47, code following the comment line "Formulas for various elasticity calculations."

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-33, Please refer to USPS-LR-I-107, pages 37 through 53. These pages present your TSP program "varitr-tpf-by.tsp." Please identify the portion of the program that estimates the variability model using the TSP panel command, assuming the disturbances have a scalar covariance matrix. To the degree appropriate, page numbers and position on the page in the Library Reference will suffice.

OCA/USPS-T-15-33 Response.

See the response to OCA/USPS-T-15-25.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-34. Please refer to USPS-LR-I-107, pages 37 through 53. These pages present your TSP program "varltr-tpf-by.tsp." Please delineate the part of the program where the fixed-effects residuals and slope parameters are extracted for further processing. To the degree appropriate, page numbers and position on the page in the Library Reference will suffice.

OCA/USPS-T-15-34 Response.

See LR-I-107 at page 49, code following the comment line "Extracts fixed-effects residuals for autocorrelation coefficient"; LR-I-107 at page 51, "unmake" and "mat" statements.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-35. Please refer to USPS-LR-I-107, pages 37 through 53. These pages present your TSP program "varitr-tpf-by.tsp." Please identify the part of the program for the calculation of the Baltagi-Li estimate. To the degree appropriate, page numbers and position on the page in the Library Reference will suffice.

OCA/USPS-T-15-35 Response.

See LR-I-107 at pages 50-51, code following the comment lines "Computes the disturbance autocorrelation coefficient (rhoest);" and "the Durbin-Watson statistic (dwstat)."

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-36. Please refer to USPS-LR-107, pages 37 through 53. These pages present your TSP program "varitr-tpf-by.tsp." Please identify the part of the program for the calculation of the Bhargava-Franzini-Narendranathan estimates of the panel Durbin-Watson statistic, produced from the residuals. To the degree appropriate, page numbers and position on the page in the Library Reference will suffice.

OCA/USPS-T-15-36 Response.

See the response to OCA/USPS-T-15-35.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-37. Please refer to USPS-LR-I-107, pages 37 through 53. These pages present your TSP program "varitr-tpf-by.tsp." Please identify the portion of the program where the data are transformed so that a feasible Generalized Least Squares (FGLS) version of the model may be estimated. To the degree appropriate, page numbers and position on the page in the Library Reference will suffice.

OCA/USPS-T-15-37 Response.

See the response to OCA/USPS-T-15-24.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-38. Please refer to USPS-LR-I-107, pages 37 through 53. These pages present your TSP program "varltr-tpf-by.tsp." Please identify the portion of the program where the elasticities and their standard errors from the FGLS model are then calculated and evaluated. To the degree appropriate, page numbers and position on the page in the Library Reference will suffice.

OCA/USPS-T-15-38 Response.

See the response to OCA/USPS-T-15-31.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-39. Please refer to page 7 of USPS-LR-I-107 wherein you indicate that you assumed the existence of first-order autocorrelated disturbances in your calculations.

(a) What would be the characteristics of the economic process that would be necessary for this assumption to be a reasonable assumption?

(b) Please state the necessary and sufficient conditions for the [sic] homotheticity.

(c) Please state how your conclusions would have varied if you had not assumed homotheticity.

OCA/USPS-T-15-39 Response.

Please note that I *demonstrate* the presence of serial correlation of the regression disturbances empirically, rather than assume it as the question asserts. See USPS-T-15 at pages 119-120 ("Autocorrelation coefficient" lines of Table 6 and Table 7).

a. I assume the antecedent of "this assumption" is autocorrelation of the regression disturbances. Autocorrelated disturbances imply that "shocks" to the process being estimated (i.e., the disturbances) have effects that exhibit a degree of persistence over time, though the mean effect is zero. The residuals in models of economic processes involving a time dimension are generally assumed to be autocorrelated, at least until proven otherwise. For example, Greene states that "it is reasonable to model most time series data as having some serial correlation." See William H. Greene, *Econometric Analysis* (Macmillan, 1990) at page 429.

b. A homothetic function is a monotonic transform of a homogeneous function. That is, a function $h(x)$ is homothetic if it can be written as $g(f(x))$, where g is monotonic (i.e., $z_1 \geq z_2 \Rightarrow g(z_1) \geq g(z_2)$) and f is homogeneous (i.e., $f(tx) = t^d f(x)$, where d is

the degree of homogeneity). See Hal R. Varian, *Microeconomic Analysis,* Second Edition, (W.W. Norton, 1984), p. 330.

c. My conclusions about the presence of autocorrelation in the regression disturbances are independent of homotheticity.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-41. Please refer to page 7, footnote 5 of USPS-LR-I-107. Please delineate the section(s) of the program that also produce pooled, between, and random-effects estimates, including commands for printout, statistical tests, and all other relevant econometric information.

OCA/USPS-T-15-41 Response.

The "panel" commands automatically produce the pooled, between, and random-effects estimates as well as the specification test statistics reported in USPS-T-15 at page 124.

See also the responses to OCA/USPS-T-15-1(a) and OCA/USPS-T-15-25.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-42. Please refer to page 15 of USPS-LR-I-107. You state that the Christensen Associates' proprietary Economic Programming Language (EPL) software was used to perform certain computations.

(a) Please provide appropriate documentation for the EPL software and for the computations which you performed using the EPC [sic] software.

(b) Has this software been independently tested and peer reviewed for accuracy and completeness? If so, please provide the documentation.

OCA/USPS-T-15-42 Response.

a. The EPL reference manual will be provided as LR-I-187.

b. EPL has not been independently tested in the sense of the studies cited in the response to OCA/USPS-T-15-1(b). The terms "accuracy" and "completeness" are too vague for me to determine the extent to which other potentially relevant testing of EPL might apply. Note also that EPL was used only in the process of preparing data for the "reg9398.xls" data set. All statistical analysis was performed using TSP.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-43. You appear to have used an index of capital intensity in your regressions. In order to have computed the index it would appear that you would have had the following information by site for each function: original acquisition cost of the equipment, average years of equipment life, and year of equipment acquisition,

(a) Please provide this information by equipment type; in the event that any of the dollars relate to space, please state them separately.

(b) Please indicate why you chose to use an index number instead of a depreciated, undepreciated, or other dollar measure of equipment.

(c) Do you maintain that two sites with equal quantity indices for facility capital employ the same amount of capital?

OCA/USPS-T-15-43 Response.

a. See the response to MPA/USPS-T-15-6.

b. At a basic level, an index number is simply a (scalar) numerical representation of data intended to facilitate comparisons. A dollar value of the plant's capital would be, generically, a type of index number. Furthermore, I make use of (dollar0 valuations of capital in developing the capital index. See the response to MPA/USPS-T-15-6 and LR-I-107 at pages 27-28 and 32. Therefore, I do not see a relevant distinction.

c. Not necessarily. I would expect two sites employing the same amount of capital to have the same value of the capital quantity index. However, I would only maintain that two sites with equal capital quantity indexes employ *equivalent* amounts of capital.

Response of United States Postal Service Witness Bozzo
to Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-44. These questions pertain to the QICAP variable presented in USPS-LR-I-107, page 3, where it is denoted as "Quantity index for facility capital."

(a) Is QICAP a stock of investment capital at a facility site?

(b) Is QICAP a flow of capital used at a facility site?

(c) If the answer to (a) and (b) is negative in both cases, please define exactly the nature of QICAP.

OCA/USPS-T-15-44 Response.

(a) No.

(b) Yes.

(c) Not applicable.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-45. Please also refer to the associated Excel file in the aforementioned Library Reference LR-I-107, where the data for the analysis conducted and presented in your testimony are contained. In the worksheet Excel file, for IDNUM 1 for the time period 193, QICAP has the value 890207; for the time period 293, QICAP has the value 927301. For IDNUM 2 for the time period 193, QICAP has the value 4530367; for the time period, 293 QICAP has the value 4792736.

(a) If one should wish to consider capital usage for IDNUM 1 and IDNUM 2 on a consolidated basis, would the total value of QICAP for 193 be 5420574 for the two facilities combined, where values of QICAP have been added for the two facilities for the same time period?

(b) If the answer to (a) is "no", please state what the value for QICAP would be. If QICAP could have more than one value or, if the value is indeterminate, please explain in detail, providing values to the extent possible.

(c) If one wished to consider a facility with twice the amount of capital in time period 193 as occurred at IDNUM 1, would the value of QICAP be 1780414 for the time period?

(d) If the answer to (c) is negative, please state how QICAP would be computed and provide the value, showing all calculations.

(e) For the time period 293, is it correct that for facility IDNUM 2 there is 5.17 times the amount of capital as is the case at facility IDNUM 1 (the number is obtained by dividing QICAP for IDNUM 2 for 293 by QICAP for IDNUM 1 for 293). If the answer is "no", please explain in detail.

(f) In the case of (e), please indicate whether the capital value represents the stock of capital present or the flow of capital consumed or used; if neither alternative is applicable, please define the meaning of the capital value.

(g) For any IDNUM for a given year, would the total capital used be defined by summing the four quarters for the year? If the answer is "no", please provide a detailed answer presenting the correct computation.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-45 Response.

(a) Adding the values for IDNUM 1 and IDNUM 2 would provide a reasonable estimate of the consolidated capital usage for a given time period. However, the ideal approach would be to apply the multilateral index procedure to the appropriately aggregated data.

(b) Not applicable.

(c) Yes.

(d) Not applicable.

(e) Yes.

(f) See the response to OCA/USPS-T-15-44(b).

(g) Adding the values for the quarters would provide a reasonable estimate of the consolidated capital usage. However, the ideal approach would be to apply the multilateral index procedure to the appropriately aggregated data.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-46. Index numbers are usually stated in terms of a base year of 100; the choice of the base year is usually tailored to the problem at hand.

(a) What is the base year and base year value for QICAP?

(b) What are the units of measurement of QICAP?

(c) Is QICAP a cardinal number? Please explain explicitly--why or why not.

(d) Is QICAP an ordinal number? Please explain explicitly--why or why not.

(e) Are all QICAP values in constant dollars?

OCA/USPS-T-15-46 Response.

(a) The base period is 1993 quarter 1. The quantity index of facility capital is based to equal its current dollar value in that period.

(b) The units of measurement are 1993 quarter 1 dollars.

(c) QICAP is a cardinal number, since a doubling of the index would indicate that twice as much facility capital is available.

(d) QICAP is not an ordinal number since it does not indicate the order of a series.

(e) Yes. See the response to part (b) and also the response to MPA/USPS-T-15-6.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-47. It is our understanding that one of the calculations used to derive QICAP was based on the accounting depreciation technique denoted as "1.5 declining balances".

(a) Please confirm that this is correct. If not, please state the accounting technique(s) used.

(b) Please provide the computations used to produce the numbers using the depreciation approach employed. If you refer to a library reference, please explicitly state the page(s) on which the "1.5 declining balances" or other depreciation approach was presented.

(c) Why was the "1.5 declining balances" technique used in place of straight-line depreciation? If some other depreciation technique was used, please state why that technique was used.

(d) In the case of each asset--e.g., LSM, BCS, or OCR machine--how was the period of years (i.e., life of asset) chosen for the time period over which the asset was depreciated; what was the time period as measured in years? Please provide the asset lives for depreciation purposes for each of the various types of equipment, referencing which schedule applies by equipment type, e.g., OCR, BCS, FSM, etc.

(e) Please provide information for owned buildings and/or other assets similar to that provided in (d).

(f) Would a choice of depreciation technique different from that used have led to a different value of QICAP?

(g) Please state how yearly investments are accrued and/or treated in the QICAP series.

OCA/USPS-T-15-47 Response.

(a) QICAP is based in part on the application of the perpetual inventory model, with asset deterioration occurring at a geometric rate. The rates of geometric deterioration for mail processing equipment and postal support equipment were

estimated using the 1.5 declining balance formula. The geometric rate for buildings was not based on the 1.5 declining balance formula. Rather, it was taken from empirical estimates found in the economic literature. See also the report "USPS Annual Total Factor Productivity Methodology," which was provided by Mr. Degen as part of LR-H-272 in Docket No. R97-1.

(b) The geometric rates of deterioration used were taken from the U.S. Postal Service total factor productivity analysis. The rates, by equipment category, are: mail processing equipment, 8.3% per year; postal support equipment, 11.5% per year; buildings, 2.33% per year.

(c) I believe the economic literature on asset deterioration supports the use of geometric decay over straight line decay. The 1.5 declining balance form of geometric decay is consistent with that literature.

(d) As stated in the answer to part (b), the rates were taken from the Postal Service's total factor productivity analysis. In determining the deterioration rates, the total factor productivity analysis looked at the book lives of various assets that make up each asset class. The lives used to estimate the geometric rate of deterioration are 18 years for mail processing equipment and 13 years for postal support equipment.

(e) As stated in the response to part (a), the rate for buildings was based on the economic literature.

(f) Yes.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

(g) Assets contribute to capital input measured by QICAP once they are put into service. As the asset ages its level of contribution declines, according to the rate of geometric deterioration.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-48. The following questions focus on QICAP and investment.

(a) Among the costs of installing a piece of equipment are the engineering, planning, installation, and supervisory costs of in-house personnel and/or vendor and contractor personnel in effectuating the installation of the equipment. Does the QICAP series incorporate any of these costs?

(b) Does QICAP include any Operating and Maintenance costs? If not, are Operating and Maintenance costs carried under the direct hours in your Excel spreadsheet associated with each activity, e.g., FSM, LSM, OCR, etc? If your answer is negative to both questions, please explain.

(c) Only one QICAP number is available for each quarter for an IDNUM. Does this number refer to the total capital used in all activities analyzed (including machines, buildings, and any other capital) at a site? If the answer is "no", please explain in detail.

(d) Does QICAP contain any dollars at a site for activities not explicitly analyzed in your study at the site?

(e) Are there individual QICAP series available for each function, i.e., FSM, OCR, LSM, BCS, etc.?

(f) If the answer to (e) is "yes", please provide the appropriate QICAP values for each of the functions, e.g., FSM, OCS, LSM, BCS, etc.

OCA/USPS-T-15-48 Response.

(a) To the extent that the engineering, planning, installation, and supervisory costs are included in the book value of the asset, QICAP incorporates those costs. The presumption is that these activities add value to the asset put in place.

(b) No, QICAP does not include operating and maintenance costs. The costs of the clerks who operate the machines are included in the mail processing labor cost

pools associated with each operation. The electricity used to operate the machines would be included in Cost Segment 15: Building Occupancy. The labor and parts used to maintain the machines would be included in Cost Segments 11 and 16, which are Custodial and Maintenance Service, and Supplies and Services, respectively.

(c) Yes.

(d) QICAP is designed to be a measure of facility-level capital usage, so it includes some capital assets used in mail processing and/or support activities that I did not otherwise model in the measures.

(e) No.

(f) Not applicable.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-49. It is our understanding that the machinery at the mail facilities is depreciated. Assume that a FSM, BCS, OCR, or other type of machine has been depreciated on the books by a total of 40%.

(a) Does a machine that has been depreciated by 40% have a productivity level that is 60% of its original rating?

(b) Assuming that two BCS machines of the same model, features, and capacity were purchased in two different years for different prices (prices differing based on market conditions) are they considered to have the same productivity, *ceteris paribus*, after x years of service?

(c) If the answer to (b) is "no", how would the productivity of the two machines be compared and measured?

OCA/USPS-T-15-49 Response.

(a) I cannot confirm or deny your assertion with respect to accounting depreciation. From an economic standpoint, the machines have useful value, which is consistent with the geometric perpetual inventory equation.

(b) Yes, the two machines are assumed to have the same level of productivity when they are *X* years old, which would occur in different years according to your scenario. The stock of capital services is calculated in real terms so there are adjustments for changes in purchase prices.

(c) Not applicable.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-50. These questions focus on the amount of capital equipment in each facility.

(a) For each facility and each operation, e.g., FSM, LSM, OCR, etc., are capital equipment data available by facility IDNUM for each piece of equipment, including acquisition date of each piece of equipment, acquisition cost, and basis for depreciation? Please provide the information.

(b) Are data available for the yearly costs for pieces of leased equipment, in terms of activity, site, and time period? If so, please provide the information.

(c) Are data comparable to (a) and (b) available for owned and leased space, by IDNUM, time period, and activity? If so, please provide the information for the space used in the case of owned facilities, and yearly dollar values of the lease for leased space.

(d) For any case with a negative response, please explain.

OCA/USPS-T-15-50 Response.

(a) Yes. The requested data will be provided in USPS LR-I-244.

(b) No. It is my understanding that there is no Postal Service data system that tracks leased equipment by activity, site, and time period. Therefore, the requested data are not available.

(c) No. The FMS data do not identify space or space costs by activity. See also the response to UPS/USPS-T15-8(c).

(d) See the responses to parts (b) and (c).

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-51. In discussing the translog function in your testimony, lines 10-12 at 40, you discuss homotheticity and its implications.

(a) In the course of your work did you consider whether the function was homogenous of degree n, with n assuming values equal to, greater than, and less than one? Please explain.

(b) Did you perform any analysis of returns to scale? Please explain.

(c) Is your consideration of homotheticity in any way related to homogeneity? Please explain.

(d) Do you have any evidence of increasing, constant, or decreasing returns to scale for the activities analyzed? If so, please state them.

(e) What are the physical characteristics represented by a homothetic function: i.e., how would we know, absent a statistical test but looking at the physical production line, whether such a function was homothetic?

(f) Did you perform any statistical test for homotheticity?

OCA/USPS-T-15-51 Response.

Please note that in the cited portion of my testimony, I am not discussing the translog function. Rather, that section discusses the assumptions on "the cost pool-level production (or cost) functions" under which "the capital and labor variabilities will be identical, in equilibrium" (USPS-T-15, page 40, lines 10-11).

(a) Given the relationship between homothetic and homogeneous production (or cost) functions—see the response to OCA/USPS-T-15-39—in considering the implications of an assumption of homotheticity, I implicitly also consider whether the production (or cost) functions are homogeneous. It is well-known that there

is a close relationship between the degree of homogeneity of production (or cost) functions and returns to scale. See, for example, J. M. Henderson and R. E. Quandt, *Microeconomic Theory: A Mathematical Approach* (McGraw-Hill, 1980), at pages 105-106. Since a production (or cost) function may, in principle, exhibit constant, increasing, or decreasing returns to scale on the margin, I did not impose any prior restrictions on the degree of returns to scale.

(b) The results I report at pages 119 and 120 of USPS-T-15 clearly indicate that the output (piece handling) elasticities for the mail processing operations I studied are less than one, or equivalently the volume-variability factors for the operations are less than 100 percent. It is my understanding that other economists studying Postal Service costs have interpreted volume-variability factors less than 100 percent (e.g., for carrier activities) as indicating the presence of economies of "scale" (or locally increasing returns to "scale"). However, there are technical issues of what precisely constitutes economies of "scale," as opposed to other types of economies (e.g., density, scope, size) that exceed the scope of my testimony.

(c) See the response to part (a).

(d) See the response to part (b).

(e) I assume by "physical characteristics" you mean characteristics of the production process represented by a homothetic production (or cost) function. I am not

aware of any generalizations in the economic literature regarding the "physical characteristics" of such processes. However, as described in my testimony, homotheticity implies relationships between the level of output and relative factor demands, see USPS-T-15 at page 40, lines 12-14. Those relationships are observable, at least in principle.

(f) No. See also the response to OCA/USPS-T-15-10(a).

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-52. Please confirm that management labor hours are not included in the labor hour relationships that you have estimated. If you do not confirm, please explain.

OCA/USPS-T-15-52 Response.

The analysis presented in USPS-T-15 pertains directly to a portion of Cost Segment 3.1, which encompasses clerk and mailhandler labor expenses. Thus, the relationships I have estimated exclude labor hours other than those of clerks and mailhandlers. I am not sure what, precisely, you mean by "management labor hours." Please note, however, that labor costs for supervisors and technical personnel are included in Cost Segment 2; labor costs for Postmasters are included in Cost Segment 1. Please see the corresponding sections of LR-I-1 for a description of those cost segments.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-53. You use the manual ratio as a measure of the degree of automation at a facility. Why did you use this variable instead of a measure of the amount of automated equipment at the facility, for example--the value of installed OCR, BCS and other automation machinery?

OCA/USPS-T-15-53 Response.

The interrogatory's assertion that I used the manual ratio *instead of* a measure of the amount of automated equipment is not completely correct. The "amount of automated equipment" is captured in the QICAP variable.

The manual ratio variable indicates the relative utilization of the facility's manual and automated operations. A measure based on the value of installed equipment would not do so.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-54. In OCA/USPS-T-15-16 [sic] you state, "The restrictions I have "avoided" are those associated with the use of a functional form for the labor demand models that does not have the translog's approximation properties." What, specifically, are the restrictions avoided to which you refer?

OCA/USPS-T-15-54 Response.

In my response to OCA/USPS-T-15-16, I also quote the following passage, from USPS-T-15 at page 65, lines 11-13, where I state, "The translog [functional form] has general applicability because it provides a second order approximation to a function of arbitrary form." To specify further, it would be necessary to identify a specific functional form that embodies a priori restrictions not imposed by the translog functional form. There are, in principle, infinite such functional forms, so I clearly cannot exhaustively list the restrictions. However, to provide an illustrative example, consider the Cobb-Douglas (log-linear) functional form. The Cobb-Douglas functional form can be expressed as a special case of the translog in which the coefficients on all second-order and cross terms are restricted to be zero. The Cobb-Douglas restrictions further imply that the output elasticities, or volume-variability factors, are identical for all observations. Thus, in employing the translog function without the a priori restrictions of the Cobb-Douglas form, I avoid the restriction that the volume-variability factors are identical for all observations—a restriction that is, as the results presented in LR-I-107 indicate, rejected empirically.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-55. Please refer to USPS-LR-I-178, focusing on the Excel file "Capital Index.xls."

(a) Is REGPO in column 1 the same as IDNUM? If not, please explain the mappings of REGPO onto the IDNUM's.

(b) Please define and explain all other column headings.

OCA/USPS-T-15-55 Response.

(a) Yes.

(b) The column headings in the referenced spreadsheet file are in plain English apart from the following abbreviations: AHE = Automated Handling Equipment, MHE = Mechanized Handling Equipment, PSE = Postal Support Equipment, P&D = Processing and Distribution. AHE and MHE collectively constitute Mail Processing Equipment, as the term is used in the text accompanying USPS LR-I-244.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-56. Please refer to your testimony, lines 7 through 11 at 31. It is our understanding that the function being estimated is now stated to be a factor input demand function rather than a cost function. Economic textbooks indicate that inputs for a labor demand function include payments to the factors of production as well as the price of the output.

a. Does your labor factor demand equation have output price and price of capital in the equation?

b. If your answer to (a) is negative, please explain.

c. Does your labor factor demand equation have other variables that are not specified by a typical textbook exposition as enunciated in this question?

OCA/USPS–T–15–56 Response.

a. No.

b. The statement of the interrogatory appears to incorrectly identify the analytical basis for my analysis. What is termed the "factor input demand function" in the interrogatory—or labor demand function in the cited passage—is, to make a finer distinction, a *conditional* labor (or, more generally, factor) demand function. The conditional labor demand function can be derived either from the partial equilibrium model of cost minimization (in which case my framework is a generalized version of that described in the Docket No. R97-1 interrogatory USPS/OCA-T600-6 to Dr. Smith, Tr. 28/15909-15910; see also USPS-T-15 at pages 42-44 and the response to OCA/USPS-T-15-59 part d), or from a generalized non-cost minimizing model as mentioned in USPS-T-15 at page 33, footnote 8; see also the response to OCA/USPS-T-15-58(c). In

either case, it is appropriate that the output quantity (rather than output price) appear in the model specification.

With respect to the capital variable, my inclusion of the capital quantity rather than price is appropriate for a treatment of capital as a "quasi-fixed" factor. While I would expect capital costs to be volume-variable to some degree (possibly to the same degree as labor costs, as discussed in USPS-T-15 at pages 39-41), I would nevertheless expect that the nature of the Postal Service's capital planning and deployment processes is such that capital and labor are not simultaneously determined, but rather that the available capital is taken as a "given" when labor work assignments are made.

c. Yes. As I discuss in USPS-T-15 at page 45, lines 17-20, "textbook economic theory cannot specify the full set of relevant cost causing factors for any applied study. To create an adequate econometric model, it is necessary to identify the factors that sufficiently bridge the gap between generic theory and operational reality." The labor demand models I use, and the cost functions implicitly associated with them, employ additional variables for that reason. See USPS-T-15 at page 46, lines 8-10. The implicit cost functions associated with my labor demand functions are consistent with the general framework employed in the Christensen, Caves, and Tretheway paper cited in USPS-T-15 at page 46, footnote 15.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-57. Please refer to your testimony footnote, 7 at 32, wherein you indicate that R. Chambers indicates that the production function's "properties or even its existence was seriously debated".

a. Do you give any credence to the question of the existence of a production function? If so, please explain.

b. If your answer to (a) is negative, why do you raise this issue?

c. If you are concerned about the production function's properties issue mentioned by R. Chambers, please explain in detail the issues in doubt and also how you have resolved the issues.

OCA/USPS–T–15–57 Response.

a. It depends on what is meant by "existence." In one sense, I believe it should be clear that the "production function" does not *literally* exist, but rather it "is simply an analytical representation of [the firm's operating] plans and procedures," as I state in USPS-T-15 at page 32, lines 17-18. Nevertheless, I believe that the body of economic production theory derived from the concept of the production function is analytically useful and powerful.

b. I raised the issue in the context of explaining a conceptual error in Dr. Smith's statement in Docket No. R97-1 that "[operating] plans and procedures do not provide the analytical form or explanatory power found in a correctly specified translog production function as defined by economists" (Docket No. R97-1, Tr. 28/15829). Production functions (in whatever functional form) are simply an analytical representation of firms' operating plans and procedures; see my response to part (a). Therefore, I believe it follows virtually by definition that

production functions can provide no more or less explanatory power than the operating plans and procedures they represent.

c. Not applicable.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-58. Please refer to your testimony, lines 1 through 4 at 33, and the accompanying footnote 8. You indicate that "Whether the Postal Service's actual plans and procedures are cost minimizing is beyond the scope of this testimony." You quote "Estimation of a Cost Function When the Cost is Not Minimum: The Case of Soviet Manufacturing Industries, 1958-1971" by Yasushi Toda, *The Review of Economics and Statistics*, 58 (1976) at 259-68, as the source for information on firms which do not minimize costs.

a. Dr. Toda indicates that the presence of a factor price disparity creates a bias in the index of total factor productivity. Your analysis of capital and the QICAP variable appears to be based to a significant degree on Total Factor Productivity. Accordingly, does not the assertion that Postal Service facilities may or may not be operated in a cost minimizing fashion limit or eliminate the accuracy of your QICAP variable and the associated capital analysis? Please explain.

b. Dr. Toda also found that the shadow rental wage and observed rental wage ratios were significantly different in the case of a cost minimizing and a non-minimizing cost situation. Assuming that according to your testimony cost non-minimization behavior may be a characteristic of some Postal Service facilities, may we conclude that Dr. Toda's conclusions are applicable to the Postal Service? Please explain.

c. In discussing cost minimization, would it be correct to assume that you are indicating that some sites (as identified by IDNUM) may be cost efficient, while other sites may be inefficient? If your answer is yes, please indicate factors that could cause a site to be operated in a non-cost minimizing way. If your answer is no, please indicate the concept you are attempting to convey in discussing cost non-minimization if you allege that it is not an issue.

d. Assuming that cost minimization occurs at a site (or does not occur at a site), then is it correct that over a period of time a site could move from minimization to non-minimization (or the opposite)? Please explain.

OCA/USPS-T-15-58 Response.

a. I do not believe so. The statement of the interrogatory fails to make an important distinction. My facility-level capital variable (QICAP) does not make

use of the Postal Service's Total Factor Productivity (TFP) results (i.e., the TFP index). Rather, it makes use of *methods* developed to measure capital input for the TFP analysis. That is, the relationship between my analysis and the Postal Service's TFP analysis is that they share common methods to develop data on economic input. My interpretation of the cited discussion in Toda's paper is that it mainly concerns the methods by which measures of economic labor and capital input are combined to form an aggregate (labor and capital) input index for TFP measurement. Finally, while I have no reason to believe that the Postal Service TFP index is actually biased, the bottom line is that I do not use it to develop QICAP.

b. I believe the statement of the interrogatory incompletely reports Toda's main empirical result, which is that there were (statistically) significant differences between the observed and shadow "rental-wage ratios" for three Soviet industry sectors out of the eight studied. Toda observes that his results "[i]n large part... fail to verify [his] expectations" that "the use of primary factors may be in disequilibrium" in Soviet industry (Toda, op. cit., at page 263). Nevertheless, Toda's empirical results apply to Soviet industries operating under institutional conditions that, in my opinion, do not provide a good characterization of the Postal Service. Thus, I would not be inclined to generalize Toda's results to the Postal Service. Also, please note that my citation of Toda's paper was with respect to the applicability of "neoclassical" economic cost analysis methods in a non-cost minimizing context, and my

conclusion that cost analysis methods are applicable whether or not the Postal Service is a cost minimizer.

c. My testimony does not indicate whether or not specific operations are operated in a "cost efficient" manner. As I indicate in the response to part (b), above, and in the cited portion of my testimony, the concept I am trying to convey is the applicability of "neoclassical" economic cost analysis methods in a non-cost minimizing context.

d. Yes. In principle, a site could move towards (or away from) the minimum cost frontier by employing the available resources more (or less) efficiently.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-59. Please refer to your testimony, lines 13 through 15 at 42, where you state, "Therefore, estimating labor demand functions, rather than cost or production functions, to obtain the volume-variability factors is a theoretically valid modeling approach."

a. Would this be true under all conditions, *i.e.*, both competitive and non-competitive equilibrium, non cost minimization, and cases of non-equilibrium? Pleasse explain.

b. Do your results presuppose competitive market equilibrium? Please explain.

c. In the case of attainment of a non-competitive market equilibrium, would your results be the same? Please explain.

d. You reference in the accompanying footnote 13 a book by R. Chambers to substantiate the theory of the modeling approach. Recognizing that Professor Chambers' book is comprehensive and voluminous at least from the viewpoint of a cursory review effort limited by time, please specifically reference the pages that you use to substantiate your theoretical economic analysis.

OCA/USPS–T–15–59 Response.

a. I do not believe any theory holds under "all conditions." With respect to the conditions indicated in the statement of the interrogatory, the quoted passage from USPS-T-15 is in the context of a description indicating that the modeling approach is valid under cost minimization, as well as non-cost minimization represented per the Toda article discussed in the response to OCA/USPS-T-15-58. The modeling approach does not presuppose the existence of competitive or non-competitive general equilibrium; see the response to (b), below. I am not sure what exactly is meant by "cases of non-equilibrium."

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

To the extent that the term refers to situations under which the relevant theoretical conditions of the cost minimizing (or generalized non-cost minimizing) model do not hold, my results would still represent an empirical analysis of the Postal Service's demand for labor in mail processing operations, but the mathematical relationship ("Shepard's lemma") between the labor demand and cost functions would not necessarily hold.

b. I assume that by "competitive market equilibrium" you mean Walrasian general equilibrium as described in, e.g., Chapter 5 of Varian's *Microeconomic Analysis*, Second Edition (Norton, 1984). In this context, my approach is a "partial equilibrium" model in that I do not assume that all markets clear. My models do not presuppose the existence of general equilibrium. See also the response to OCA/USPS-T-15-56.

c. The question appears to ask whether my results would be the same under different economic structures—i.e., general equilibrium under perfect versus imperfect competition. Interpreting the question this way, I would not expect my results to necessarily be invariant with respect to the fundamental structure of the economy. However, I would expect my (partial equilibrium) results to embody any relevant characteristics of the structure of the economy as a whole.

d. Please note that I cited Chambers' book in the general context of a treatment of the "neoclassical" approach to the economics of cost and production.

However, a reader not otherwise familiar with the material might focus on Chapters 2 ("Cost functions"), 5 ("Flexible forms and aggregation"), and 7 ("Multioutput technologies").

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-60. Please refer to your testimony, lines 9 through 10 and the accompanying footnote 21 at 59. You indicate that "the cost surface passing through the origin is neither necessary nor sufficient for the 100 percent volume-variability result."

a. Please provide an example plus graphical representation of a cost surface passing through the origin and possessing 100 percent variability, a cost surface passing through the origin and not possessing 100 percent variability, and a cost surface not passing through the origin and possessing 100 percent variability, and any other possible case(s) not mentioned in this section of the interrogatory.

b. Please provide the underlying mathematical proof.

OCA/USPS–T–15–60 Response.

a. Consider a cost surface with the form $C(D) = F + \alpha D^{\varepsilon}$, where C represents (real) cost, D represents the output or "cost driver," F represents a "fixed" component of cost (independent of D), and α and ε are positive parameters. The elasticity of cost with respect to the cost driver D, or volume-variability factor, resulting from this specification is $\varepsilon_{C,D} = \frac{D}{C} \cdot \frac{dC}{dD} = \frac{\varepsilon \alpha D^{\varepsilon}}{F + \alpha D^{\varepsilon}}$. Technically, the term "100 percent [volume-]variability" refers to the situation where this elasticity equals one. See the Preface and Appendix H of USPS LR-I-1.

For the cost surface specified above to "pass through the origin" (i.e., $C(0) = 0$), it must be that $F = 0$, in which case the elasticity formula simplifies

to $\varepsilon_{C,D} = \varepsilon$. Thus, if the cost surface passes through the origin, 100 percent variability requires that $\varepsilon = 1$. When $\varepsilon \neq 1$, costs are 100ε percent volume-variable. This demonstrates that the cost surface passing through the origin is not *sufficient* for the 100 percent volume-variability result—the additional condition $\varepsilon = 1$ is required in addition to $F = 0$.

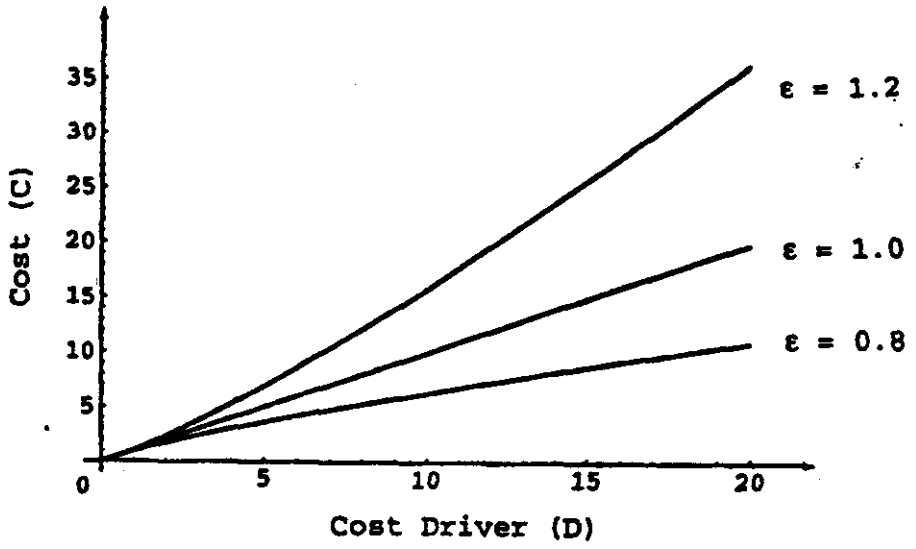
If the cost surface does not pass through the origin (i.e., $C(0) > 0$), 100 percent volume-variability results when the equation $\frac{\varepsilon \alpha D^{\varepsilon}}{F + \alpha D^{\varepsilon}} = 1$ is satisfied, with $F > 0$. Given positive values of F and α, there are three cases to consider. First, there is no solution to the equation $\frac{\varepsilon \alpha D^{\varepsilon}}{F + \alpha D^{\varepsilon}} = 1$ (and the degree of volume-variability is less than 100 percent) when $\varepsilon < 1$, since $\varepsilon < 1 \Rightarrow \varepsilon \alpha D^{\varepsilon} < F + \alpha D^{\varepsilon}$. When $\varepsilon = 1$, the degree of volume-variability approaches 100 percent in the limit as D tends to infinity. When $\varepsilon > 1$, solving the equation for D indicates that the degree of volume-variability will equal 100 percent, on the margin, for $D^{*} = \exp\left(\frac{1}{\varepsilon} \cdot \ln\left(\frac{F}{\alpha(\varepsilon - 1)}\right)\right)$ (note that in this case, the degree of volume-variability, on the margin, will be less than 100 percent at levels of output below D^{*} and greater than 100 percent above D^{*}). This demonstrates that the cost surface passing through the origin is not *necessary* for the 100 percent volume-variability result—it is possible to

establish conditions whereby the degree of volume-variability is 100 percent and the cost surface does not pass through the origin.

The graphs attached to this response provide the requested graphical representation.

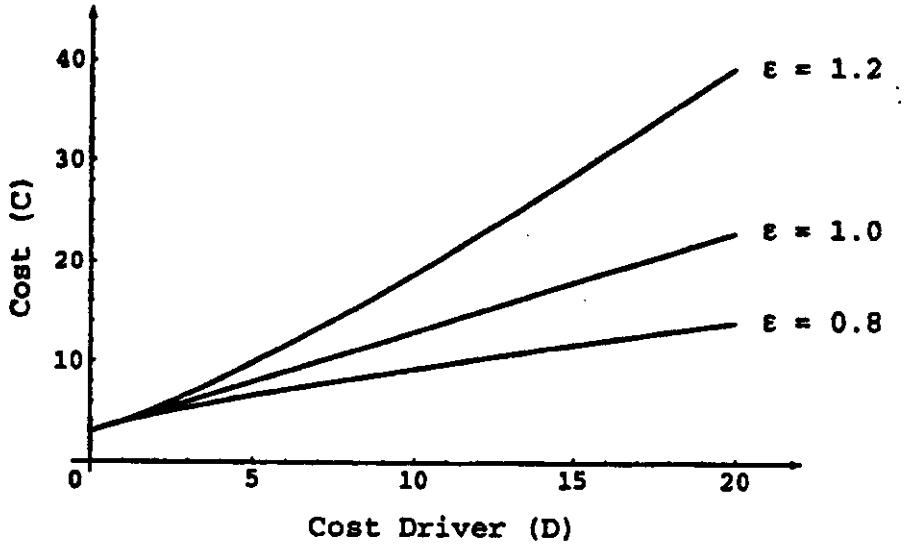
b. Please see the response to part (a) for the requested proof.

Figure 1



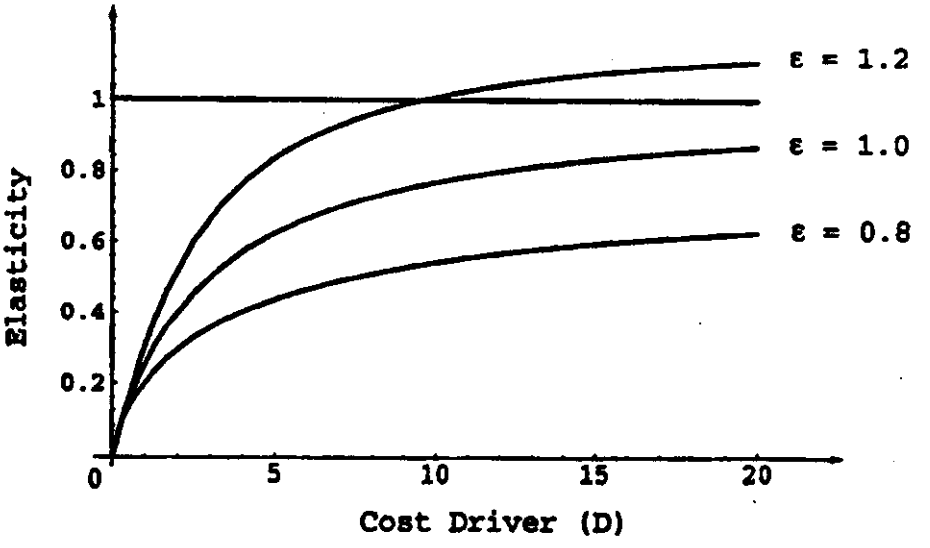
Graphical representation of (constant variability) cost function $C = F + \alpha D^{\varepsilon}$, $F = 0$, $\alpha = 1$, various values of ε.

Figure 2



Graphical representation of (non-constant variability) cost function $C = F + \alpha D^{\varepsilon}$, $F = 3$, $\alpha = 1$, various values of ε.

Figure 3



Graphical representation of elasticity $\varepsilon_{C,D} = \frac{D}{C} \cdot \frac{dC}{dD} = \frac{\varepsilon \alpha D^{\varepsilon}}{F + \alpha D^{\varepsilon}}$ from cost function $C = F + \alpha D^{\varepsilon}$, $F = 3$, $\alpha = 1$, various values of ε.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-61. Please turn to your testimony, lines 8 through 12 at 72. You state, "To forge ahead and estimate a long-run cost function from cross-section data when the data are not observed in long-run equilibrium results, as Friedlaender and Spady point out, in biased estimates of the relevant economic quantities (see A. Friedlaender and R. Spady, *Freight Transport Regulation*, MIT Press 1981, p.17)." Subsequently in the text, the authors state that one should measure a short-run function in cases of long-run disequilibrium with chronic excess capacity.

a. Is your estimated function a short-run or a long-run function?

b. Assuming that your reply is "short-run," is this due to disequilibrium and chronic excess capacity? If so, please explain the chronic excess capacity and also the disequilibrium factors.

c. If you reply that the function you have estimated is long run, please explain what form a short run function would take in terms of variables.

d. The authors state that the long-run function can be derived as the envelope curve of the short-run function. Accordingly, have you derived the unobserved long-run function, as indicated by Friedlaender and Spady? If so, please provide the function.

e. Friedlaender and Spady advocate the specification of a cost function in terms of multiple outputs; did you consider such an approach in your estimation efforts? Please explain your answer in detail.

OCA/USPS–T–15–61 Response.

a. Since capital is treated as a quasi-fixed factor, I am estimating "short-run" functions.

b. No, as I explain in the response to part (a), the functions are "short-run" because capital is treated as a quasi-fixed factor. This need not imply a disequilibrium condition.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

c. Not applicable.

d. No. Note that it is my understanding that the "function" to which Spady and Friedlaender refer is the total cost function. Since I estimate the labor demand equations but not the full factor demand systems (i.e., encompassing factors of production other than labor), my analysis does not permit the underlying total cost function to be recovered.

e. Yes. First, to characterize the set of operations for which I report econometric results, I employ ten equations with ten output (piece handling) variables; additionally, each equation includes other non-volume "cost drivers" in addition to piece handlings. Second, my analysis is an element of the Postal Service's "distribution key" (or "volume-variability/distribution key") methods to estimate volume-variable costs by subclass (i.e., multiple outputs). See also Docket No. R2000-1, USPS-T-15 at pages 47-56, USPS LR-I-1, Appendix H; Docket No. R97-1, USPS-T-11 and Tr. 34/18220-18228.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-62. In your reply to Interrogatory OCA/USPS-T-15-20, you indicate that an updating of Dr. Bradley's models that did not require the updating of new data systems could require up to two person years of work, or more if significant changes were required.

a. Would it be reasonable to assume that Dr. Bradley's work also required possibly five years of person effort for the initial development, similar to your efforts? If you are unable to provide this information, please refer the question to the appropriate USPS source that can reply to the question of how many person years of effort went into Dr. Bradley's work.

b. Please provide an estimate of the amount of time required to complete your study to obtain the coverage of the functions examined in Dr. Bradley's study, but not examined in your study.

OCA/USPS–T–15–62 Response.

a. I believe it would be reasonable to assume that Dr. Bradley's work employed at least five person-years' work, measured comparably to the estimate I provided in response to OCA/USPS-T-15-20(b).

b. I provided an estimate of the time required to update Dr. Bradley's BMC results in my response to OCA/USPS-T-15-20(a). With similar qualifications, I believe a comparable amount of time would be required to update the remote encoding and registry results and to complete the work on allied labor operations reported in the response to MPA/USPS-T-15-1.

Response of United States Postal Service Witness Bozzo
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T-15-63. These questions focus on the choice of variables for your equations on pages 117 and 118 of your testimony.

a. Are any hours of management time included in the hours variable?

b. Are any hours of plant and equipment maintenance time included in the hours variable?

c. Are any hours of other overhead types of labor included in the hours variable?

OCA/USPS–T–15–63 Response.

Please note that the hours variables are designed to include clerk and mailhandler mail processing (Cost Segment 3.1) workhours. Workhours of "management," maintenance personnel, and other "overhead types of labor" are recorded and analyzed in cost segments other than 3.1. It is also my understanding that the workhours (at MODS facilities) of employees in these other labor categories are not available by cost pool. See, e.g., Handbook M-32 (Docket No. R97-1, USPS LR-H-147), Appendix A, at pages 18 (supervisors) and 20 (maintenance personnel).

a. See the response to OCA/USPS-T-15-52. Also please see above.

b. No. Also please see above.

c. No. Also please see above.

Response of United States Postal Service Witness Bozzo
To Interrogatory of the Office of the Consumer Advocate

OCA/USPS–T15–64. Please refer to your response to interrogatory OCA/USPS-T-15-50, filed on March 24, 2000. You provided a variety of files, variously labeled mpe.map, mpe93.txt, pse.map, pse93.txt, among others. The following questions are focused on attempting to determine the meaning of the contents of the files.

a. Please provide column headings for all files provided, including but not limited to the aforementioned files.

b. On the assumption that mpe.map and pse.map present a listing of various types of equipment in terms of a type of functional number and equipment description, please explain why there are two different files and explain the contents of the files. If this assumption is incorrect, please provide information that would permit an understanding of the files. Please also provide any relevant documentation with the Postal Service that would assist in understanding the contents of the files.

c. In the case of the pse93.txt file and the mpe93.txt file, on the assumption that the fourth column refers to the value of capital equipment, please indicate whether the value in the fourth column is in current year or constant year dollars, whether the value of the equipment is a stock of equipment or a flow of equipment dollars, and the year of the relevant dollars.

d. In the event that you have provided dollar values in a stock of equipment form, please verify whether the data are consistent with the other data in your analysis. On the assumption that the data are in a stock of equipment form and that QICAP is in a flow of equipment dollars form and is adjusted for a variety of depreciation, inflation, and other factors on a quarterly basis, please present the dollar values in a form consistent with the data used in your analysis.

e. In the case of capital equipment designations, you do not appear to have referenced the equipment in terms of the functions performed as presented in your analysis, e.g., LSM, OCR, etc. Please provide the tie between the capital equipment entries and the function(s) being performed for each IDNUM.

f. Please confirm that the aggregate of all of the data provided in the response for a facility IDNUM is equal to the total capital at a facility. If not, please explain.

g. Assuming that these data provide an accurate measure of capital at a facility, why did you not use these data in disaggregated form on a quarterly basis in terms of functions in the analysis rather than using one QICAP variable?

Response of United States Postal Service Witness Bozzo
To Interrogatory of the Office of the Consumer Advocate

OCA/USPS–T15–64 Response.

a. Please note that file format descriptions for all of the files in LR-I-244 were provided in the accompanying text, an electronic version of which was provided in the LR-I-244.doc file. See the section therein entitled, "Description of LR-I-244 data files."

b. As the text description accompanying LR-I-244 indicates, mpe.map is a "[m]ap [i.e., list with descriptions] of all Property Code Numbers (PCN) for mail processing equipment (MPE)" and pse.map is a "[m]ap of all Property Code Numbers (PCN) for postal support equipment (PSE)." See also the response to part (a). There are two files because MPE and PSE are separate equipment categories.

c. As the text description accompanying LR-I-244 indicates, the data in the fourth column of the mpe<y>.txt and pse<y>.txt files represent the acquisition cost of the pieces of equipment. It is my understanding that the data are in nominal terms.

d. I assume that the "dollar values" to which the interrogatory refers are the acquisition cost data presented in the fourth column of the mpe<y>.txt and pse<y>.txt files in LR-I-244; see also the response to part (c). The nominal acquisition cost is neither a measure of the (real) stock of equipment (because it does not account for inflation or depreciation, among other things), nor is it, by definition, a measure of the flow of capital services per unit time from the equipment. Thus, the "assumption that the [acquisition

cost] data are in a stock of equipment form" is incorrect. However, I confirm that the provided PPAM data are consistent with QICAP in that the PPAM data are used to impute the flows of capital services from the equipment.

e. Contrary to the assertion of the interrogatory, a number of the PCN descriptions provided in the file mpe.map identify types of sorting equipment employed in certain operations for which I provide econometric results. Please note, however, that most of the MPE PCNs, and all (or nearly all) PSE PCNs, represent "support" equipment that cannot be uniquely associated with mail processing cost pools. Accordingly, I did not develop a mapping of equipment to cost pools. Please see also USPS-T-15 at page 93, line 21, to page 94, line 1, and the response to UPS/USPS-T15-24(b).

f. I cannot confirm without knowing the aggregation procedure referenced in the interrogatory. Note, however, that the set of records associated with a facility IDNUM in the mpe<y>.txt or pse<y>.txt file would represent the stock of equipment belonging to the given equipment category installed at the facility at the beginning of fiscal year <y>.

g. Please see the responses to UPS/USPS-T15-24(b) and UPS/USPS-T15-32(b).

Response of United States Postal Service Witness Bozzo
to Interrogatory of the Office of the Consumer Advocate
(Redirected from Witness Crum, USPS-T-27)

OCA/USPS-T27-3. Please refer to your testimony [USPS-T-27] at page 8, lines 7-13. You state that:

> The second change from my presentation in Docket No. R97-1 is the calculation of mail processing costs. In Docket No. R97-1, the Postal Service proposed explicit econometric-based volume variability factors as part of their mail processing cost presentation. That was not done in this docket for effectively all of the parcel operations and some portion of the flats operations. The impact of this change is to expand the cost difference between flats and parcels beyond its level under the Docket No. R97-1 volume variability proposal.

a. Please explain fully the Postal Service rationale for not proposing "explicit econometric-based volume variability factors as part of their mail processing cost presentation." (If you are not the witness responsible for this decision, then redirect this question to the responsible witness for an answer).

OCA/USPS-T27-3 Response.

a. The question's implication that the Postal Service does not propose econometric volume-variability factors in this docket is incorrect. See my testimony, USPS-T-15, at pages 119-120. For an explanation of the Postal Service's decision to employ the traditional IOCS-based mail processing variability method (i.e., "implicit" variabilities) in mail processing operations not covered by my econometric models, please see USPS-T-15 at pages 132-139.

Response of United States Postal Service Witness Bozzo
To Interrogatories of United Parcel Service

UPS/USPS-T15-9. Refer to the data presented below for MODS group 1 (OCR):

FNOT14	TTREND	HRS	TPH	MAN	DPT	QICAP	WAGE
0	1	9012	75829	0.04	413255	890207	20.94
0	2	9308	78540	0.03	413327	927301	21.65
0	3	9955	73134	0.04	414356	942962	20.77
0	4	9229.5	66954	0.05	415262	970228.5	20.01
0	5	9393	73083	0.06	417593	949056	20.23
0	6	9812	80967	0.06	417645	959974	20.72
0	7	9645	74746	0.05	418551	995016	19.82
0	8	9645.75	72858	0.05	419943	1039347.75	20.39
0	9	10156	86694	0.04	422496	1260435	20.41
0	10	10925	90738	0.06	423605	1249987	19.79
0	11	11672	81509	0.05	424874	1260687	20.20
0	12	12076.5	79896.75	0.04	426909	1238822.25	21.39
0	13	11276	75555	0.04	428174	1171348	23.01
0	14	13491	81919	0.04	429608	1211470	22.79
0	15	11698	73618	0.04	430269	1215913	22.74
0	16	10371	71914.5	0.04	431992	1242970.5	21.95
0	17	11570	73159	0.04	434216	1241618	22.12
0	18	13525	75886	0.05	435436	1262696	18.48
0	19	11130	63744	0.04	436177	1258917	19.62
0	20	10155.75	57360.75	0.04	437311	1299757.5	19.78
0	21	10064	59780	0.05	438670	1119442	20.01
0	22	9042	58343	0.06	439441	1115111	20.12
0	23	10098	55828	0.06	439996	1143298	20.38
0	24	9969	52599.75	0.06	441045	1159366.5	20.62

For each time period for site #1, HRS > 40, TPH > 0, PRODLOW < TPH/HRS < PRODHIGH, DPT > 0, QICAP > 0 and WAGES [sic] > 0, yet you drop all of these observations from your analysis sample. Why?

UPS/USPS–T15–9 Response.

The referenced observations were inadvertently omitted from the regression sample due to a programming error. In the tables attached to this response, I provide versions of Table 3, Table 6, Table 7, and Table 9 from USPS-T-15 as they would appear with corrections to this programming error and to another minor programming error that prevents a small number of observations with a missing or invalid NWRS wage from being flagged for exclusion from the

regression samples (note that TSP eliminates observations in the sample with missing data prior to computing the estimates). The results reported in my testimony are correct given the regression samples actually employed in the LR-I-107 programs, but the samples themselves are slightly different from those that would result from the selection rules as intended. None of the estimated elasticities reported in the attached tables differ from the values in USPS-T-15 by an amount greater than the estimated standard error. The other changes to the results are correspondingly slight. I am providing the TSP programs and output that generate the attached results, with changed or added code clearly marked with comment lines, in USPS LR-I-239.

1 **Table 3. Summary of Effect of Sample Selection Rules on Sample Size**

Cost Pool	Non-missing	Threshold	Productivity	Minimum Obs	Lag Length (Regression N)
BCS	6882	6880	6777	6716	5406
			98.5%	97.6%	78.6%
OCR	6642	6637	6493	6396	5097
			97.8%	96.3%	76.7%
FSM	5441	5441	5423	5361	4373
			99.7%	98.5%	80.4%
LSM	5155	5149	5126	5035	3904
			99.4%	97.7%	75.7%
MANF	6910	6910	6416	6176	4891
			92.9%	89.4%	70.8%
MANL	6910	6910	6820	6800	5512
			98.7%	98.4%	79.8%
MANP	5831	5621	4709	3936	3037
			80.8%	67.5%	52.1%
Priority	5713	5640	4992	4193	3234
			87.4%	73.4%	56.6%
SPBS	2241	2236	2210	1986	1584
			98.6%	88.6%	70.7%
1CancMPP	6744	6716	6597	6524	5251
			97.8%	96.7%	77.9%

Table 6. Principal results for letter and flat sorting operations, USPS Base Year method

Cost Pool	BCS	OCR	FSM	LSM	Manual Flats	Manual Letters
Output Elasticity or Volume-Variability Factor	.897 (.030)	.752 (.038)	.820 (.026)	.956 (.021)	.773 (.027)	.737 (.024)
Deliveries Elasticity	.248 (.045)	.333 (.061)	.221 (.037)	.037 (.045)	.317 (.043)	.461 (.039)
Wage Elasticity	-.825 (.052)	-.597 (.071)	-.611 (.041)	-.139 (.077)	-.241 (.060)	-.688 (.051)
Capital Elasticity	.025 (.019)	-.004 (.027)	.050 (.014)	.010 (.022)	.054 (.020)	.033 (.017)
Manual Ratio Elasticity	.070 (.015)	-.007 (.020)	-.048 (.011)	-.055 (.018)	-.035 (.028)	-.195 (.021)
Auto-correlation coefficient	.642	.701	.623	.558	.674	.693
Adjusted R-squared	.986	.972	.994	.991	.988	.991
N observations	5406	5097	4373	3904	4891	5512
N sites	298	289	236	274	278	300

Elasticities evaluated using arithmetic mean method; standard errors in parentheses.

Table 7. Principal results for other operations with piece handling data, USPS Base Year method

Cost Pool	Manual Parcels	Manual Priority	SPBS	Cancellation & Meter Prep
Output Elasticity or Volume-Variability Factor	.522 (.028)	.540 (.024)	.645 (.045)	.547 (.036)
Deliveries Elasticity	.218 (.088)	.524 (.103)	.051 (.105)	.360 (.054)
Wage Elasticity	-.583 (.150)	-1.219 (.156)	-1.311 (.087)	-.545 (.085)
Capital Elasticity	.100 (.045)	.093 (.052)	.116 (.039)	.065 (.020)
Autocorrelation coefficient	.579	.501	.596	.671
Adjusted R-squared	.933	.940	.987	.983
N observations	3037	3234	1584	5251
N sites	182	200	95	291

Elasticities evaluated using arithmetic mean method; standard errors in parentheses.

Table 9. Comparison of Postal Service BY1996 and BY1998 volume-variability factors

Cost Pool	BY 1996 Variability (Docket No. R97–1, USPS–T–14)	BY 1998 Variability	Percent difference – BY98 vs. BY96
BCS	.945	.897	-5.1%
OCR	.786	.752	-4.3%
Manual Flats	.866	.773	-10.7%
Manual Letters	.797	.737	-7.5%
FSM	.918	.820	-10.7%
LSM	.905	.956	5.6%
SPBS	.552[1]	.645	16.8%
Manual Parcels	.395	.522	32.2%
Manual Priority	.448	.540	16.8%
Cancellation and Meter Prep	.654	.547	-16.4%
Composite	.810	.762	-5.9%

[1] Volume-variable cost percentage for combined SPBS – Priority and SPBS – Non-Priority cost pools. See Docket No. R97–1, USPS–T–12, at 15 [Table 4].

Response of United States Postal Service Witness Bozzo
To Interrogatories of United Parcel Service

UPS/USPS-T15-13. A number of sites appear to have an intermittent presence of various MODS operations. For example, site # 6 has an intermittent presence of Manual Parcels (MODS group 7) (from 193 to 194 TPH07 > 0, from 294-295 TPH07 = 0, then in 296, TPH07 > 0 again) and Priority (MODS group 8). Explain why these operations appear only intermittently.

UPS/USPS–T15–13 Response.

The term "intermittent presence" is vague; without a more precise definition, I cannot comment in general on the extent of the problem or potential causes. In the case of site #6, positive manual parcels workhours are reported for each period from PQ1 FY93 to PQ3 FY98; manual Priority workhours are reported for all periods covered by my data set. In that sense, the presence of these operations is not "intermittent." The reporting of manual parcels TPH at this site appears to be intermittent as specified in the interrogatory, but manual Priority TPH are reported for each period from PQ4 FY94 to PQ4 FY98 after a gap from PQ3 FY93 to PQ3 FY94. In contrast to the other MODS operations I studied, manual parcel and Priority volumes must be manually logged, so the volume data collection process is considerably more labor intensive than for operations in which volume data are transmitted from equipment or scales via electronic interfaces.

In the case of site #6, the result of inquiries indicated that the intermittent reporting of manual parcel piece handlings may reflect periods in which manual and SPBS parcels were commingled, and the gap in the manual Priority volume reporting may reflect a period prior to the filling of a related in-plant support

position. Note also that the manual parcels observations from this site do not enter the manual parcel regression sample, while a portion of the manual Priority observations (during the later period of continuous recording of TPH) are included in the manual Priority regression sample (see the sampsel.xls spreadsheet, LR-I-186).

Response of United States Postal Service Witness Bozzo
to Interrogatories of United Parcel Service

UPS/USPS–T15–18. In the estimation dataset contained in library reference USPS–LR–I–107, the following sites have no piece handlings in any of the MODS operations at the start of the 24 periods sampled, but come in with positive piece handlings elsewhere in the sample:

Sites 27, 39, 48, 128, 160, 168, 177, 188, 189, 192, 196, 266, 267.

For each of these sites, explain whether (a) this is a new site which came into existence during the time period sampled, (b) this site did not report data into the MODS system, or (c) there is some other explanation for the zero piece handlings across all MODS groups at the start of the sample. If your answer is (c), provide the explanation or explanations.

UPS/USPS–T15–18 Response.

The requested explanations are provided in the table below. It is my understanding that additions of facilities to MODS are most commonly related to expansions of the facilities to include automated sorting equipment.

Site ID	Reason
27	New facility
39	Existing facility added to MODS
48	Existing facility added to MODS
128	New facility
160	Existing facility added to MODS
168	Existing facility added to MODS
177	Existing facility added to MODS
188	Existing facility added to MODS
189	Existing facility added to MODS
192	New facility
196	New facility
266	New facility
267	Existing facility added to MODS

Response of United States Postal Service Witness Bozzo
to Interrogatories of United Parcel Service

UPS/USPS–T15–19. In the estimation dataset contained in library reference USPS–LR–I–107, the following sites have no piece handlings in any of the MODS operations at the end of the 24 periods sampled:

Sites 44, 177, 320.

For each of these sites, explain whether (a) this site closed down its operations, (b) this site did not report data into the MODS system, or (c) there is some other explanation for the zero piece handlings across all MODS groups at the end of the sample. If your answer is (c), provide the explanation or explanations.

UPS/USPS–T15–19 Response.

The requested explanations are provided in the table below.

Site ID	Reason
44	Site no longer reports MODS (downsized from plant to delivery distribution center)
177	Site no longer reports MODS (mail processing volumes were moved to another facility beginning Q498; now an Associate Office)
320	Site's data not uploaded to Corporate Data Base in Q498

Response of United States Postal Service Witness Bozzo
to Interrogatories of United Parcel Service

UPS/USPS–T15–20. In the estimation dataset contained in library reference USPS–LR–I–107, the following sites have intermittent periods of zero piece handlings across all MODS groups during the sample:

Sites 196, 231, 316.

For each of these sites, explain whether (a) this site temporarily closed down its operations, (b) this site did not report data into the MODS system, or (c) there is some other explanation for the intermittent zero piece handlings across all MODS groups. If your answer is (c), provide the explanation or explanations.

UPS/USPS–T15–20 Response.

I am not certain how you intend to define the term "intermittent." Sites 231 and 316 report data for all periods except for a single interval in which they do not report data, as listed below. As indicated in the response to UPS/USPS-T15-18, site 196 is a new site that came into existence during the period covered by my data set; it appears to regularly report MODS data for all operations except manual parcels from Q4 '94 to Q4 '98.

Site ID	Reason
196	See above
231	Removed from list of MODS sites in FY94 due to lack of plant designation. Added back in FY95 due to amount of mail processing and automation equipment.
316	Site's data not uploaded to Corporate Data Base in Q198

Response of United States Postal Service Witness Bozzo
To Interrogatories of United Parcel Service

UPS/USPS-T15-23. The FOCUS data dictionary, provided in Library Reference USPS-LR-I-201 in response to UPS/USPS-T15-3(a), shows that the MODS data contain information on machine downtime (DOWNTIME), number of machines (MACHINE), and machine run time (RUNTIME). Provide an Excel data file containing DOWNTIME, MACHINE, and RUNTIME by MODS operating group for each quarter from the first quarter of FY1993 to the last quarter of FY1998, for each of the 321 sites examined in your testimony.

UPS/USPS-T15-23 Response.

The requested data will be provided in LR-I-286.

CHAIRMAN GLEIMAN: Is there any Additional Designated Written Cross Examination for this witness?

Ms. Noble?

MS. NOBLE: Yes. I'd like permission to approach the witness?

CHAIRMAN GLEIMAN: Certainly.

CROSS EXAMINATION

BY MS. NOBLE:

Q Dr. Bozzo, I have just handed you answers you previously provided to questions designated as UPS/USPS-T-15-15, 16, 17, 24, and 27.

[Pause.]

Have you had a chance to review them?

A I have.

Q Did you provide the written testimony that I have given to you this morning?

A I did.

Q And if you had to answer these questions orally today, would your answers be the same?

A They would.

MS. NOBLE: With the Commission's permission, I'd like to move these into evidence.

CHAIRMAN GLEIMAN: If you'd please provide two copies to the Court Reporter, I'll direct that the Additional Designated Written Cross Examination be received

into evidence and transcribed into the record.

[Additional Designated Written Cross Examination of A. Thomas Bozzo, UPS/USPS-T-15, 16, 17, 24 and 27 was received into evidence and transcribed into the record.

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UPS/USPS-T15-15. What other econometric estimators did you consider? Describe each such econometric estimator and explain why you decided not to pursue it.

UPS/USPS–T15–15 Response.

I did not compute any estimators other than the seven presented in USPS-T-15 and/or LR-I-107 (i.e., the between estimator plus OLS and FGLS versions of the pooled, fixed-effects, and random effects estimators). I considered the applicability of the "seemingly unrelated regression" (SUR) estimator (i.e., allowing for potential correlation between the equations for different mail processing operations), but did not pursue this approach due to time and resource constraints, as well as the fact that the only potential improvement from the use of SUR would be a potential gain in statistical efficiency of the estimates. For a discussion of why I prefer the fixed-effects estimators over the other estimators I did compute, please see USPS-T-15 at pages 122-4, 130-1 and the response to MPA/USPS-T15-2.

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UPS/USPS-T15-16. What other error structures, other than the AR(1) structure, did you consider? Describe each such error structure and explain why you decided not to pursue it.

UPS/USPS–T15–16 Response.

I did not compute FGLS estimators for any "error structures" other than the AR(1). However, my decision not to pursue alternative FGLS estimators is based in part on the consideration that my results are consistent (though not necessarily statistically efficient) for an arbitrary "GLS" error process (i.e., the error vector has mean zero and covariance matrix proportional to some nonsingular matrix Ω).

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UPS/USPS-T15-17. What other functional forms, other than the translog form, did you consider? Describe each such functional form and explain why you decided not to pursue it.

UPS/USPS–T15–17 Response.

In reaching my conclusion that the use of the translog functional form is appropriate, I reviewed the relevant economic theory, and accordingly considered other functional forms to that extent. See USPS-T-15 at pages 65-67, and footnote 29 on page 69. Insofar my review revealed no a priori advantages for other functional forms (for example, since all of the explanatory variables should take on positive values if accurately reported), I did not compute estimates using alternative functional forms.

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UPS/USPS-T15-24. Refer to pages 93 through 94 of your testimony, where you state, "Since each PPAM equipment category encompasses a variety of equipment types, there is no simple correspondence between the categories and specific mail processing cost pools." However, the PPAM data contain the PCN or property code number for each piece of equipment. Handbook F-26, provided in Library Reference USPS-LR-I-201, describes each of the six-digit PCNs used to classify capital equipment.

(a) Explain whether all, some, or none of the equipment can be classified by mail processing cost pools using the equipment PCN.

(b) If your answer to part (a) is either all or some, explain why you did not create separate capital indices for each mail processing cost pool.

(c) If your answer to part (a) is none, explain why the PCN cannot be used to classify equipment by mail processing cost pool.

UPS/USPS –T15-24 Response

Please note that the "categories" to which I refer in the quoted statement are the AHE, MHE, PSE and CSE categories, not the PCNs.

(a) Some of the equipment could, in principle, be classified by cost pool using the equipment PCN.

(b) Several important factors motivated my decision to employ a facility capital measure as opposed to cost pool-level capital measures. First and foremost, as I indicated in my response to part (a), it is not possible to classify all equipment by cost pool using the PCN. The resulting cost pool-level capital measures would not represent the cost pool's capital per se, but rather the portion of the cost pool's capital that can be associated with the cost pool using the PCN. This is compounded by the fact that data on facility space, an important non-equipment component of a hypothetical cost pool capital index, are not available

by cost pool, as my responses to UPS/USPS-T15-8 and OCA/USPS-T-15-50 indicate. Furthermore, it is not obvious that a cost pool level capital measure would be the sole—or even the primary—economically relevant measure of capital. The effect of including the facility capital index is to capture the net effect on labor demand in a given cost pool of the capital services employed in that cost pool as well as the capital services employed in other cost pools (that may be complements or substitutes for the cost pool, or that otherwise affect the cost pool's labor usage).

(c) Not applicable.

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UPS/USPS-T15-27. Chapter 3, page 13 of Postal Service Handbook F-26, provided in Library Reference USPS-LR-I-201, explains that "The Postal Service uses the straight-line method of depreciation to allocate the cost of an item in equal increments over service life." In your testimony, you explain that in your calculation of the capital index, "the value of each year's equipment is depreciated using a 1.5 declining balance rate of replacement." USPS-T15, at 94, lines 1-3. Explain why you do not adopt the Postal Service's convention of straight-line depreciation.

UPS/USPS-T15-27 Response

The purpose of the capital index is to represent the quantity of capital services (or capital input) employed at each facility. In order to obtain such a measure, it would be inappropriate to use the straight line method of depreciation. See also the response to OCA/USPS-T-15-47(c).

CHAIRMAN GLEIMAN: Is there anyone else?

[No response.]

CHAIRMAN GLEIMAN: If not, that brings us to oral cross examination. Requests for oral cross examination were filed by the Office of the Consumer Advocate; United Parcel Service; and Time Warner, which filed to preserve its right to conduct followup.

Is there any other party that wishes to cross examine the witness?

[No response.]

CHAIRMAN GLEIMAN: If not, Mr. Richardson, you may begin.

MR. RICHARDSON: Thank you, Mr. Chairman.

CROSS EXAMINATION

BY MR. RICHARDSON:

Q Dr. Bozzo, good morning.

A Good morning, Mr. Richardson.

Q If you would turn, first, to your testimony on pages 17 and 18, where you discuss the time period or the longevity of your model, and first, on page 18, I would like to refer you to lines 16 through 19 where you indicate that Dr. Smith's contention that Dr. Bradley's estimates were short run was shown to be false.

And there you cite some testimony in the previous docket, rate docket, R97-1, but you don't refer to the

Commission's opinion at all in that citation.

Did the Commission find that Dr. Bradley's estimates in R97-1 were short run?

A Well, first, I should say that in my full statement in the cited section of my testimony, page 18, beginning at line 16, I'm specifically addressing Dr. Smith's -- what I describe as Dr. Smith's contention that the high frequency of Dr. Bradley's data, in combination with the use of the fixed effects model, caused the Postal Service's econometric variability estimates to be, quote, "short run."

It is my understanding that the Commission found Dr. Bradley's estimates to be short run. As an economic matter, I don't believe there was any dispute over the issue that from a purely economic, theoretical perspective, that Dr. Bradley's models constituted a short run analysis.

Q And his analysis consisted of utilizing accounting period data; is that correct, four-week data?

A It is my understanding that Dr. Bradley's data frequency was accounting period and the Postal Service's accounting periods are a period of four weeks.

Q And in your analysis, what period do you use?

A The periodicity of my data is quarterly.

Q Twelve weeks?

A It is either three or four Postal Service

accounting periods. Because there are 13 accounting periods in the Postal Service year, the fourth Postal quarter consists of four accounting periods.

As I describe in my testimony, I adjust the fourth quarter data to account for the extra accounting period.

Q Do you ~~adjusted~~ adjust it downward to essentially be three accounting periods?

A Yes.

Q As opposed to adjusting the three quarters up to be four accounting periods, which wouldn't make any sense, correct?

A I don't know that it wouldn't make any sense. Certainly, given that there is one longer quarter, it seemed to make sense to scale that quarter down to be the equivalent of the other three, rather than to scale the other three up to the scale of the fourth quarter.

However, I would believe that one could have done it either way, in principle.

Q And so in effect you're using 12 weeks or three accounting periods where Dr. Bradley used 4 weeks or one accounting period?

A Per observation, yes.

Q On page 17 of that same portion of your testimony, that same section, you agreed or indicate that pretty much everybody agrees that the economic concept of long run and

the firm is free to vary all the factors of production -- you say that on lines 7 and 8 of page 17 in your testimony?

A Yes. I state that the economic concept of the long run refers not to calendar time but rather to a hypothetical condition in which the firm is free to vary all of the factors of production. That is my statement at lines 6 though 8 of the testimony.

Q And then over on page 18 you make a statement that concludes on lines 11 through 13, you say, "However, the longer term process of adjusting the clerk and mail handler complement operates more slowly. Our operational discussions suggested up to a year."

First of all, I want to ask you, you say "our operational discussions" -- who did you discuss this matter with. The titles rather than the individual names is what I am asking for.

A Well, in this case I believe it is simpler to provide a name. I discussed it primarily with Witness Kingsley and members of her staff.

Q Okay.

A That statement was also based in part on my interpretation of Witness Moden's testimony from Docket Number R97-1, in part.

Q Did you have extensive discussions concerning the mail processing operations with Witness Kingley?

A It certainly depends on what you would define as extensive. I would say that with either Witness Kingsley or various members of her staff I certainly discussed it over the course of many hours.

Q Now you indicate also that your operational discussions suggested up to a year in the process. How do you take that into account in your model?

A I take that into account in my model by including additional lagged values of piece handlings, either total pieces handled or total pieces fed, according to the operation that is under consideration by including up to four quarterly lagged values of piece handlings. That means that in the terminology that was used sometimes in Docket Number R97-1 I am using up to the previous year's piece handlings to explain the current quarters, work hours, and the operation.

Q So that is a total of 52 weeks you are utilizing in that instance?

A Four quarters. As I state -- that is as I state in lines 13 to 15 of page 18 of the testimony. I state, "The models I present in this testimony therefore include lagged effects, by which I mean lagged piece handlings up to the SPLY or Same Period Last Year quarter. That would be the same quarter of the previous year and the volume variability factors are calculated as the sum of the current

and lagged ~~TPY~~ TPH or TPF elasticities.

Q Now did Dr. Bradley in the previous case utilize a lag period?

A It is my understanding that he did.

Q And what was that?

A I believe that Dr. Bradley included the previous accounting periods' value of TPH in his models.

Q A total of 8 weeks that would be?

A Well, again, he included the current period and the previous period's piece handlings in the models.

It would be the case that the timespan covered by those two observations would be 8 weeks.

Q By utilizing the same period last year quarter, is it your testimony that you are correcting for all factors of production that vary in the long run?

A No, it is not.

Q Also on your testimony on page 18, on lines 19 to 23, you dismiss the rate cycle as being relevant for the term of the mail processing analysis, and you indicate that, quote, "Real field planning processes do not take the 'rate cycle' into account so there is no operational basis for that modeling approach."

My question to you is will investments in mail processing equipment such as flat sorting machines that are made this year and next year affect mail processing

operations during the next rate cycle or the forthcoming rate cycle which is the subject of this docket?

A They may.

Q And would you say the investments in mail processing equipment made last year would affect mail processing operations this year?

A Certainly.

Q So in your opinion Postal Service expenditures on investment for mail processing have an impact on mail processing costs?

A That would be my expectation and that was a major driver of the consideration to include a measure of capital in the mail processing econometric models.

Q Is that factor taken into account in any other place in your models other than the capital measure that you just mentioned?

A I'm sorry, which factor?

Q The effect of Postal Service expenditures on mail processing equipment -- is that taken into account in your model in any place other than the factor that you just mentioned, your capital factor?

A I believe that it is only explicitly taken into account in the capital variable. Again investments in Postal Service equipment would appear in the fixed asset records that I used to develop measures of capital stock,

from which I impute measures of capital input for the mail processing models.

That is the natural way of including it in the model in my opinion.

Q And could you for the Commission or for the record explain what you would call that particular variable?

Is that QICAP -- Q-I-C-A-P?

A The variable name used in the LR-I-107 programs is Q-I-C-A-P or Q-I-CAP. It is a quantity index of capital input for Postal Service facilities.

Q And again that is the only explicit variable that is taken into account in your model for that, for capital expenditure?

A That's the explicit measure of capital input in my models, yes.

Q Okay. I would like to switch now to questions that related to your labor demand function and OCA asked you some questions on OCA/USPS-T15-56, which related to this, although I don't want to ask you any particular question about that interrogatory response.

You stated you have estimated a conditional labor demand function, and what variables does textbook economic theory normally include in a labor demand function?

A It is my understanding that a textbook labor demand function derived from a textbook cost function,

which, of course, would necessarily involve some abstraction from whatever problem was actually being studied, would include a measure of the output of the production process being studied, a price of the variable inputs for the process being studied, and then the quantity of the so-called quasi-fixed inputs of the process being studied. The quasi-fixed inputs being any inputs like, for instance, mail processing equipment that would be in place and taken as a given when one decides, for instance, how to assign labor or other factors to the mail processing operations, or generally a production process under study.

Q Now, are all these variables in your function?

A I have variables that represent all of those in my function, yes.

Q Have you included any variables that are not what you would say normally in a textbook specification for a labor demand function?

A Yes. As I explain in my testimony, it is necessary to include additional variables in order to come up with an appropriate characterization of the factors that drive mail processing costs. The main additional variable that I include is a quantitative variable to measure the effect of the Postal Service network served by a mail processing facility on the costs in the mail processing operation. The specific variable that I included was

possible deliveries, although I do discuss, generically, issues in measuring the Postal Service's delivery network in the testimony in particularly Section 4.B and 4.C, beginning at page 44 of USPS-T-15.

I, additionally, included a variable for which I used the R97 name, the manual ratio. The manual ration measures the fraction of piece handlings for a given shape of mail, either letters or flats, that are processed in automated or mechanized activities, and that serves as a measure of the effect of different mail flows at the facilities on the costs of particular operations, and, also, I believe consistent ~~consist~~ with standard practice, I do include a time trend term in the equations to account for, generically, factors that might affect the costs at all mail processing facilities simultaneously, for instance, national Postal Service policies or contracts that might affect staffing. And I, additionally, include facility-specific terms in my preferred models to account for unmeasured characteristics of the plants themselves.

Q So the record will be clear, I just want to sort this out, because my question related to those variables that you included that are not cited, normally included in a textbook on economic theory, and I believe you pointed to two specifically, the network variable related to possible deliveries and the manual ratio. And then you mentioned two

other variables, the time trend and the facility-specific terms, and I gather from your response that those two are normally included and that perhaps they may be in textbooks on economic theory. Could you clarify that?

A Certainly. I mentioned those because, depending on exactly what type of textbook you looked at, you may or may not see a discussion of those variables. However, it is extremely common in my experience that variables such as those are included in any applied study.

Q Now, going back to the network and the manual ratio variables, can you cite any theoretical economic text that advocates using those two variables to provide a derivation that you are doing here?

A Well, as a general preface, I should perhaps quote my testimony at page 45, beginning at line 17, where I state, "The textbook economic theory cannot specify the full set of relevant cost causing factors for any particular applied study. To create an adequate econometric model, it is necessary to identify the factors that sufficiently bridge the gap between generic theory and operational reality." ~~It~~ That is page 45, line 17 through 20.

Again, I believe with respect to variables such as the possible deliveries or network variable and the manual ratio, it really depends on what textbook you look at. On page 46, footnote 15, I cite a paper by ~~Lawrence~~ Laurits

Christensen, Doug Caves and M. Tretheway, and I can't remember what the M stands for offhand, entitled "Economies of Density Versus Economies of Scale, Why Trunk and Local Service Airlines Differ." I offered that as a representative citation to a body of cost analysis literature that stresses in industries where network factors are important, and I would certainly include both the airline industry and the Postal or delivery industries in those, that it is a standard practice to include quantifications of networks served by the firms in a cost analysis.

Q Other than the Christensen article, you don't have any other article that you, or a textbook that you can point to for the networks or the manual ratio?

A Well, if one were to follow the citations in the Christensen, Caves and Tretheway papers, one would find references to other literature on the subject. Additionally, the paper cited in footnote 16, which I raise in the context of stating, beginning at line 12, in the cost estimation literature, the result that estimates of costs and/or factor demand function parameters will be biased unless all relevant, quote, "technological factors", unquote, are taken into account, dates back at least to a 1978 paper by McFadden.

And the specific paper I refer to is a paper by

Dr. McFadden from a collection of articles entitled "Production Economics." The article was titled "Cost, Revenue and Production Functions." And I believe that that McFadden paper is also cited, for instance, in the book on freight transport regulation by Friedlaender and Spady that I cite elsewhere in the testimony. So those would be at least two additional citations.

Q In your judgment, -- your judgment has been utilized in determining whether to use a network variable in this case, isn't that correct?

A My judgment to use the network variables, or at least to attempt to use the network variables is part of the decision to employ them in my preferred specification. The additional factor, of course, is the statistical result that the network variable is, in fact, a significant factor affecting mail processing costs.

Q To your knowledge, has the Commission, this Commission, ever used a network variable in reaching a decision on mail processing?

A I believe that it has not insofar as the Commission's methodology has been based upon the in-office cost system, essentially, since Docket Number R71-1, as I understand it. However, it is the case that network factors as a driver of mail processing, or, more generically, clerk and mail handler costs were at least discussed in some of

the material presented by the Postal Service in the inaugural docket.

Q I would like to discuss network costs a little later. Right now I would like to ask you again about investments in mail processing equipment. And you say you had a chance to review with Witness Kingsley some of the operations. Did you discuss capital investment in mail processing equipment with Witness Kingsley? Specifically, have you discussed why the Postal Service is investing in mail processing equipment, or what the purpose is?

A I don't know that the purpose of the Postal Service investment in mail processing equipment was specifically discussed. I believe the role of investment in mail processing equipment for the Postal Service was generally understood in the discussions leading to the testimony.

Q But, certainly, one reason would be to impact the mail processing costs of the Postal Service, wouldn't it?

A I believe so, yes.

Q Is investment exogenous or endogenous to your model?

A I believe it is strictly speaking neither exogenous nor endogenous. I treat as being predetermined as of when the Postal Service makes its decisions as to how to staff particular mail processing operations.

Q You mean that investment is given, a given in your model when you say predetermined?

A By predetermined, what I mean is that my models treat the process of staffing mail processing operations as field managers and supervisors take the equipment that they have in the plants as given at the time that they assign employees to actually staff the operations to process mail.

Q I think I will get back to that a little later. I have some other questions related to that issue. I want to focus on your use of TPF and TPH in your modeling. That is Total Pieces Fed and Total Pieces Handling in your modeling. You use those in lieu of First Handled Pieces, which is another measure of volume. But would you agree that First Handled Pieces is a measure of individual pieces of mail going through a facility?

A It is my understanding that that is what First Handled Pieces is intended to ~~present~~ represent.

Q And to your knowledge, could a measure of the individual pieces of mail going through a facility be developed based on FHP?

A I believe that in theory it could, however, in my testimony at pages 50, line 18th, through approximately 51, line 6, I discuss some factors which make it comparatively difficult to construct an econometrically appropriate output measure for mail processing operations from FHP.

Q Let me move on to another area: Have you defined the capacity of each mail processing activity for each site?

And I would define capacity for you as the level of total pieces handled that could be processed during a time period with equipment operating on a continuous basis, except for breakdowns during scheduled work hours.

A I have not.

Q And do you refer to capacity for mail processing activities in your testimony? We weren't able to locate it, and I'm wondering if you could help us with that?

A I don't believe I discuss it explicitly in the testimony. Certainly, to the extent that there are measures of equipment -- well, to the extent that, of course, measures of capital equipment entered into the capital input variable in the models, there may be some representation of capacity, at least implicit in the use of that variable.

I suppose that it's also the case that whether or not it is important to include capacity may depend on the operational specifics of given operations.

Q But it's possible that the level of capacity utilization for an activity at a site will affect the costs of mail processing for that activity?

A It's possible that it may affect the level of costs.

Q And I'd like to also ask you about the efficiency

of the operation. You have examined a total of 11 mail processing activities.

But a site will not necessarily have all activities present and operational. Some subset of the activities may be present and active during a time period.

A Is that my statement that you're quoting?

Q No, I'm just making a statement as a predicate for the question. My question to you is:

Does the mix of activities actually in operation at a site have any impact on the hours per ~~PTF~~ TFP or the hours per TPH relationship in the terms of the efficiency with which the individual activities operate?

A Could you just run me through the question there? It seems there were a couple of parts to it, at least implicitly.

Q Okay, does the mix of activities actually in operation at a site have any impact on the hours per TPF or hours per TPH relationship?

A I believe that it does, and, indeed, I include the manual ratio variable to capture the effect of mail flows or specifically the degree of automation or mechanization of a given mail stream on the cost in a particular operation.

Q Thank you. On page 47 of your testimony, you discuss cost drivers. You start a section on cost drivers.

And on lines 6 through 8 at the beginning of that

section, you indicate you had discussions with Postal Service operations experts that determine network characteristics are important factors that drive costs in sorting operations.

Could you explain again the experts you discussed these characteristics with?

A As I stated previously, the discussions I reference included discussions with Witness Kingsley and her staff, as well as both individuals from Christensen Associates, with mail-processing-related expertise, and other Postal Service employees, primarily in what at least used to be cost attribution, but I'm not sure what the name of the group is these days with name changes of the group.

Q Did you go into the field at all to discuss operations, current operations with personnel in the field?

A I did not go into the field specifically for this study, however, my observations of field mail processing activities certainly did influence the study in this case as well.

Q Now, on page 47 also, at the end of the page, you make the statement that volume does not cause network characteristics.

Now, logically it seems that volume would have an effect on network characteristics, so would you explain why it doesn't?

A Well, of course, I wouldn't agree with the statement in your question that volume does cause network characteristics. I'm sorry if I misrepresented the question.

The statement that I have in mind is at lines 19 and 20 of the testimony is that the observable network characteristics, which are primarily the location of the delivery points the Postal Service actually serves, are clearly not determined by mail volumes, but rather that the other way around; that the patterns of mail volumes and deliveries of pieces in the Postal Service are determined by the geographical dispersion and other characteristics of the Postal Service's network. That's what I mean by the statement.

Q You're focusing on delivery points?

A I am focusing primarily on possible deliveries or delivery points. And delivery points, in turn, are certainly, at least in my understanding, an important driver of carrier routes zip code boundaries and related factors.

Q By delivery points, you mean addresses?

A Essentially, yes.

Q So you're assuming that the volume is driven by the number of addresses; is that what you're saying?

A I am saying that the number of addresses is not determined by mail volumes.

Q Now on page 49 your testimony indicates, as this whole section discusses, two principal cost drivers, volume and network characteristics. Now did Dr. Bradley specify network characteristics as a cost driver in the last case?

A It is my understanding that Dr. Bradley didn't explicitly include a measure of network characteristics. While I don't have Dr. Bradley's testimony in front of me, I believe that Dr. Bradley had felt that network characteristics may have been captured by the fixed effects terms in his preferred regression models

Q Now you also refer to a library reference on page 47 in the same section that was in Docket Number R90-1, and you refer to that on page 47, line 18 -- excuse me for jumping back and forth here your testimony.

Did the Commission rely on that reference in the R90-1 opinion?

A Rely on it for what?

Q For its decision, for reaching the conclusions and recommendations that it made.

A I am not certain in what context that Library Reference was originally filed, so I cannot specify.

Q Do you know of any place the Commission has relied upon the theory that the network is a significant driver of mail processing costs? I believe I may have asked you that question earlier.

A I believe so.

Q And I think you said you weren't aware of any.

Now again in this section there is a lot of discussion about network interaction but on line 19 of page 47 you indicate the volume and network characteristics interact in complicated ways and in your view it is very complicated, is that correct?

A That's my statement.

Q And then you make similar comments on page 48. You indicate that modeling network characteristics is inherently challenging and then again on pages 48 and 49 that the details of networks' interconnections tend to be difficult, if not impossible, to quantify.

Given that, you then considered three variables. You say possible deliveries, the number of five-digit zip codes, and the number of post offices, I believe.

A If you are intending to refer to page 49, lines 12 to 14, it is the number of possible deliveries served by the facility, the number of five digit zip codes in the facility's serving territory, and the number of post office stations and branches in the facility's serving territory.

Q And of those three you selected to rely on the number of possible deliveries, and that is your variable for the network characteristics, is that correct?

A That's correct. As I discuss later in that

paragraph on page 49, I found that you could not reject the hypothesis that all three should be included collectively into the models. However, I also report that in the course of investigating the appropriate way to specify the model that I found that in effect the zip code and post office variables were too highly correlated with deliveries to make it worth specifying all three variables to quantify the network.

Q Not having run regressions myself, it does seem rather simplistic to me, perhaps you can explain it to me, why after you have made three statements as to the complexity of this issue why you are able to dispose of this with one relatively simple number, the possible deliveries, does that fully satisfy you that you are taking into account network characteristics?

A As I state a little bit further up on page 49, beginning at line 6, I state that I use a method of, among others, Caves, Christensen and Tretheway and I cite to a paper from the Rand Journal of Economics of including in the regression models available quantitative variables pertaining to the network characteristics in a flexible functional form in conjunction with site specific qualitative variables or fixed effects to capture non-quantified network characteristics.

In other words, I include the possible deliveries

in the mail processing, labor demand equations in the functional form including interaction terms with the other variables, which certainly again would get at the quantitative impact of the interactions between the network characteristics and other variables including volumes that I discussed previously in the testimony.

Again, it is certainly not my expectation that the number of possible deliveries alone would provide a full quantification of the network effects. However, it is also my belief that many of these hard-to-measure characteristics of network -- for instance, its geographic dispersion or whether it is located in an urban or rural area -- are features of the facilities that are unlikely to change much if at all over time, so, as I state in the portion of the testimony that I just read, the fixed effects terms are present in the model in part to capture the effects of unmeasured characteristics of the network.

Q If you had additional time to study this issue, would you consider adding any other variables for that network characteristics?

A I believe that the network characteristics issue was, at least as far as it can be dealt with with the available data, was adequately disposed of with the investigation I describe on page 49 of the testimony.

Q I would like to discuss a little about the

observations and the scrubbing process that you used.

In the case of mail processing facilities where you believed the data were inaccurate, did you contact or visit the field personnel in operations to confirm and discuss the accuracy of the data which was available to you?

A I did not, and I additionally don't believe that would be a reasonable way of attempting to determine the accuracy of the data in most circumstances.

That is, I believe that if I were to call a field employee responsible for MODS data collection and asked them if I knew why an observation of MODS piece handlings that was three or four years old was "x" instead of "y" that unless "x" was grossly erroneous it is unlikely that I could get a more definitive answer as to the validity of the observation than I could get myself by using statistical or other techniques.

Q One last question relating to the economics of scale: Your testimony doesn't seem to have any analysis or reference to the economies of scale.

Could you explain how scale economies relate to your various micro economic assumptions and your results on volume variability?

A Well, I don't believe that it would be correct to say that my testimony does not discuss economies of scale, and I would refer you to my response to OCA/USPS-T-15-51,

particularly 51(b).

And in that response, I state that other economists analyzing Postal Service costs have interpreted less than 100 percent volume variability factors as something that has been termed, economies of scale, although, again, if you were going to dot all the I's and cross all the T's with economic theory, it would be debateable as to whether or not the actual phenomenon is an economy of scale versus an economy of something perhaps related to scale.

There is, additionally, some discussion of the concept of economies of scale, and what's sometimes termed in the economics literature, economies of density, in the testimony itself.

MR. RICHARDSON: Thank you, Dr. Bozzo. Those are all the questions I have right now, Mr. Chairman.

CHAIRMAN GLEIMAN: United Parcel Service?

CROSS EXAMINATION

BY MR. McKEEVER:

Q Good morning, Dr. Bozzo. I'm John McKeever for United Parcel Service.

A Good morning, Mr. McKeever.

Q I'm fighting a losing battle against a cold, so I hope you'll bear with me, if, on occasion, I falter a little bit here.

A That is perfectly all right. I am just at the tail end of the war myself.

Q Okay. Could you turn to your response to Interrogatory UPS/USPS-T-15-9, please?

A I have it.

Q Now, you note in your response to that interrogatory that certain observations in your database were inadvertently omitted from the regression sample due to a programming error; is that correct?

A The first sentence of the response is the reference to observations that were inadvertently omitted from the regression sample due to a programming error.

Q Okay. And you include in your answer, new versions of Tables 3, 6, 7, and 9, in your testimony; is that correct?

A That's correct. Those were provided as Attachments 1 through 4 of the response. Again, as I stated in the response, the results in the original tables in the testimony were correct, given the samples that were used.

The results in the Attachment to the Interrogatory reflect the results from the intended sample, which is, I would characterize, ~~slight~~ slightly different.

Q Okay. Am I correct that those tables are more correct, let's say, than the tables in your testimony, because they correct for the programming error?

All I'm trying to establish here -- I'm going to ask you some questions on some of these numbers, and I just want to make sure I use the better numbers.

A I believe that for the most part, it doesn't matter very much, quantitatively, which set of numbers he used. However, the results in those tables would, as I stated in the response, be reflective of my intended sample selection procedure.

Q The results in the tables attached to the interrogatory response?

A Right.

Q Thank you. Now, your threshold check and your productivity check are intended to remove bad data from the database; is that correct, or erroneous data?

A That is the primary intent of those, yes.

Q Okay. And you also require that each site have a minimum number of eight observations; is that correct?

A In my preferred results, yes, although as I indicate in the testimony, I also examined a requirement of only four, as well as a requirement that each site have all 19 possible observations as a sensitivity check.

Q But your preferred result uses a test of a minimum number of eight observations; is that correct?

A Eight observations, yes.

Q So if there's less than eight, you remove the data

for that site from the database; is that right?

A Just for that operation.

Q Right. Now, can we take a look at your Table 3 for a minute? Again, I'd like to look at the table that's attached to your interrogatory response, because that conforms more with what you intended, in accordance with your testimony.

Again, this is just really to make sure we're using the same numbers, you and I.

Okay, let's take a look at the manual parcels operations. Is that MANP?

A Yes.

Q Okay, there you show that after your threshold productivity and minimum observation standards are applied, there are 3,936 observations left; is that correct?

A That is the number reported in the table.

Q Okay, and to make sure I understand the percentage underneath. That 67.5 percent indicates that 67.5 percent of all of the observations for which you had data were used in the case of that operation?

A With the eight-observation requirement, yes.

Q Okay. And just to state it another way, that means that 32.5 percent of the observations where you had data for that operation were not used; is that correct?

A That's correct, although just to clarify, on your

previous question, the primary purpose of the minimum observations check is not necessarily to identify erroneous data, per se, but rather to ensure that in the fixed effects models, I have sufficient observations per site to reliably estimate the fixed effects coefficients.

Q Right. But after you apply the two checks, the threshold and the productivity checks that are intended to remove erroneous data, and then apply your requirement that there be a minimum of eight observations, 32.5 percent of the observations where you had data were not used; is that right?

A That's correct.

Q Just looking at that chart, that's the highest percentage of not used operations for any of the operations listed in your Table 3; is that correct?

A That's correct.

Q The next highest percentage of not used observations was in the manual priority operation; is that correct?

A That's correct.

Q And after that, the next highest was the SPBS operation?

A That's correct, although I would note that the SPBS percentage is considerably higher than the Priority.

Q And the manual parcels?

A Yes.

Q Okay. Could you turn to your response to UPS/USPS-T-15-13, please.

A Yes.

Q Now the volume data for the manual parcel and the manual priority operations are manually logged, is that correct? I think you indicate that in your answer.

A That's my understanding, yes.

Q Okay. For all of the other operations the volume data is transmitted electronically, is that correct?

A That is my understanding, either from machine counts for the automation equipment or for scale entries and related calculations for manual operations.

Q Okay, thank you.

Now as a result of UPS Interrogatory 13 you checked into the reason why there was a gap in the reporting of manual parcels TPH at one of the sites, Site 6, is that correct?

A That is correct.

Q And you found out that there were time periods in which manual parcels and SPBS parcels were commingled is the term you used, is that correct?

A That is correct.

Q Does that mean that manual parcels and SPBS parcels were handled together in the same operation, or let

me just you what did you mean by commingled?

A I believe that by commingled I meant that that site had handled manual and SPBS parcels together up to a point prior to separating them according to the mail processing technology that was used to sort them.

Q Okay. Now let me go back to your Table 3 for a minute, the one attached to your response to UPS Interrogatory 9.

Do you have that?

A Yes, I do.

Q Now we talked about the percentage of observations for certain operations that were and were not used by you in your regressions. Those percentages represented percentages of observations where you had data, is that correct?

A That is correct.

Q Now there were also observations, I guess I can use that term, where data was missing or not recorded, is that right?

A That is correct. As I believe the preamble to one question, I can't remember whether it was from you or from OCA, had indicated, not all sites have all operations in place at any given point in time.

Q Well, are the observations where there is no data always an indication that the site didn't have operations or could it also indicate something else?

A Strictly speaking, it could indicate something else. It could indicate some sort of invalid data and another variable.

Q Okay. In fact, for each operation you could have had a total of 7,704 observations with data if there was data for every possible observation, is that right?

A If there were data for every position for a facility in the file, yes.

Q Okay.

A Again, not every position -- for instance, not every position in the file actually has a plant associated with it so it would be expected that some would be simply empty.

Q Okay. Could you turn to your response to UPS Interrogatory 19, please.

A I have it.

Q There you give the reasons why certain sites show data for earlier time periods in your study but don't show data for later time periods in your study, is that correct?

A That is correct.

Q And in the case of Site Number 44, you indicate that it no longer was a MODS office because it was, and I am quoting her, "downsized from plant to delivery distribution center." That is the end of the quote. Is that correct?

A That is correct.

Q Do you know why it was downsized, that office?

A Not offhand, no.

Q How about Site Number 177? There you indicate that it was no longer a MODS office because, quote, "mail processing volumes were moved to another facility beginning Postal Quarter 4, 1998, and that facility, Site 177, is now an associate office" -- is that right?

A That's right.

Q Do you know why the mail processing volumes were moved to another facility?

A Again, the reason why those volumes were moved to another plant would be an operational decision of the Postal Service that I am not aware of.

Q Okay. Could you turn to your response to UPS Interrogatory 20, please.

A Yes, I have it.

Q And there you indicate that Site 231 was removed from the MODS list due to lack of plant designation, is that correct?

A That is what is says, yes.

Q What does that mean? What did you intend to convey there?

A I mean to convey that that site had been included as a MODS reporting facility prior to FY '94, even though it was not officially designated as a plant.

Q Try me again. I am focusing on the phrase "due to lack of plant designation" -- what does that mean?

A By that I mean that the facility was not designated or named as a plant processing and distribution center. It is essentially I am referring to the way the Postal Service classified the facility.

Q But it had been designated as a plant before it was removed?

A No, it had not. What I am stating is that it had been included as a MODS site prior to FY '94 despite the lack of a plant designation, so it was never a plant but it had been included in MODS for a period of time prior to '94.

Q Do I understand correctly that it should not have been included in MODS prior to '94?

A That question calls for a value judgment that I can't provide you. Certainly MODS provides a fairly comprehensive characterization of Postal Service activities so while I would have expected that that facility would not have been reporting Function 1 MODS data, there is no reason why it couldn't in theory have reported some MODS data for non-Function 1 operations.

Q Does your answer mean you are not sure?

A Why don't you restate the question?

Q Yes. I was reading your prior answers and I really just want to make sure I was reading them correctly

to mean that when the site was on the list of MODS sites it was on there incorrectly because both before and after it was removed it didn't have a plant designation.

Now is that a correct reading of your answers?

A Not necessarily. Again, I think that the term "correct" or "incorrect" calls for a value judgment that doesn't necessarily apply to this situation.

Again, in theory -- my answer was that in theory the MODS system can characterize the operations of virtually any Postal Service facility, so to the extent that the Postal Service decided that it were appropriate to have a facility's data reported in MODS there is no reason why it would be inappropriate to exclude specific types of facilities.

Q But you don't know if that is the situation or not in this case, is that correct?

A I do not know what the Postal Service's decision-making process was, no.

Q Okay. Now you indicate that the same site was added back in FY '95 due to amount of mail processing and automation equipment. Do you see that?

A I do see that.

Q Does that mean that additional equipment was added to that site in FY 95?

A I believe that was the understanding I reached

from my inquiries into that facility.

Q Okay. Do you know why that equipment was added to the facility?

A No. Again that would concern the operational matters of the Postal Service that are outside the scope of my analysis.

Q You didn't think to ask why that automation equipment and mail processing equipment was added to the facility in FY '95?

A No, and I don't believe that was the question that I was asked about it.

Q You mean that wasn't the question in the interrogatory? Is that what you mean?

A That's correct.

Q Okay.

A As a general matter I would assume that the Postal Service decided that it was appropriate to locate some automated mail processing operations at that facility and I do not personally know why that conclusion was reached.

Q You just accepted that and didn't ask why?

A That's correct.

Q But in any event when it was added back it then started reporting data to MODS again?

A That's correct.

Q Could you turn to page 120 of your testimony,

please?

A I have it.

Q Now, in that table you report a number of elasticities, including a capital elasticity, is that correct?

A That's correct.

Q And for manual parcels, the capital elasticity is .103, is that right?

A That's right.

Q Does that indicate that there is a relationship between the use of capital and the cost in the manual parcels operation?

A Yes, I believe that would be the interpretation of the result.

MR. McKEEVER: That's all the questions we have, Mr. Chairman.

CHAIRMAN GLEIMAN: Thank you, Mr. McKeever.

Is there any follow-up?

[No response.]

CHAIRMAN GLEIMAN: Questions from the bench?

[No response.]

CHAIRMAN GLEIMAN: No questions from the bench. That brings us to redirect. Would you like some time with your witness?

MS. DUCHEK: Five minutes, Mr. Chairman.

CHAIRMAN GLEIMAN: I tell you what, we will make it ten, and we will come back on the hour. How about that?

MS. DUCHEK: Fine. Thank you.

[Recess.]

CHAIRMAN GLEIMAN: Counsel, is there any redirect?

MS. DUCHEK: No, Mr. Chairman, there is not.

CHAIRMAN GLEIMAN: Since there is no redirect, Dr. Bozzo, that completes your testimony here today. We appreciate your appearance and your contributions to the record. We want to thank you, and you are excused.

[Witness excused.]

CHAIRMAN GLEIMAN: Next witness. Mr. Koetting.

MR. KOETTING: Thank you, Mr. Chairman. The Postal Service calls as its next witness Carl Degen.

Whereupon,

CARL G. DEGEN,

a witness, having been called for examination and, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KOETTING:

Q Mr. Degen, I have handed you a copy of a document entitled "Direct Testimony of Carl G. Degen on behalf of the United States Postal Service," which has been designated as USPS-T-16. Are you familiar with this document?

A Yes, I am.

Q If you were to testify orally today, would this be your testimony?

A Yes, it would.

Q It was prepared by you or under your supervision?

A Yes.

Q Do you have any corrections to make today?

A No, I do not.

MR. KOETTING: Mr. Chairman, the Postal Service would move that the direct testimony of Carl G. Degen, USPS-T-16 be admitted into evidence in this proceeding.

CHAIRMAN GLEIMAN: Is there any objection?

[No response.]

CHAIRMAN GLEIMAN: Hearing none, I will direct counsel to provide two copies of the direct testimony of Witness Degen to the reporter and that will be entered into evidence, and, as is our practice, the material will not be transcribed.

[Direct Testimony of Carl G. Degen, USPS-T-16, was received into evidence.]

MR. KOETTING: Mr. Chairman, there is one Category 2 Library Reference associated with the testimony of Mr. Degen. That would Library Reference LR-I-115.

BY MR. KOETTING:

Q Mr. Degen, are you prepared to sponsor that into evidence?

A Yes, I am.

CHAIRMAN GLEIMAN: That being the case, Library Reference I-115 will be entered into evidence, but not transcribed into the record.

[Library Reference I-115 was received into evidence.]

CHAIRMAN GLEIMAN: Mr. Degen, have you had an opportunity to examine the packet of designated written cross-examination that was made available to you earlier today?

THE WITNESS: Yes, I have.

CHAIRMAN GLEIMAN: If these questions were asked of you today, would your answers be the same as those you previously provided in writing?

THE WITNESS: They would. I would like to note one typo.

CHAIRMAN GLEIMAN: Certainly.

THE WITNESS: On my response to DFC/USPS-T-16-1, the header in the response erroneously indicated T-15, so I have changed that on both copies.

CHAIRMAN GLEIMAN: Thank you, sir.

If counsel would provide two copies of the designated written cross to the court reporter, I will

direct that the material be received into evidence and transcribed into the record.

[Designation of Written Cross-Examination of Carl G. Degen, USPS-T-16, was received into evidence and transcribed into the record.]

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, DC 20268-0001

Postal Rate and Fee Changes, 2000 Docket No. R2000-1

DESIGNATION OF WRITTEN CROSS-EXAMINATION
OF UNITED STATES POSTAL SERVICE
WITNESS CARL G. DEGEN
(USPS-T-16)

Party	Interrogatories
Alliance of Nonprofit Mailers	ANM/USPS-T2-2, 6, 8 redirected to T16
Association of American Publishers	AAP/USPS-T16-10-11 AAP/USPS-T17-1, 5, 9-10, 12-13 redirected to T16
Magazine Publishers of America	DMA/USPS-T16-1-3 MPA/USPS-T16-1-17 OCA/USPS-T16-1
Office of the Consumer Advocate	OCA/USPS-T16-1-3
Time Warner Inc.	TW/USPS-T17-19 redirected to T16
United Parcel Service	AAP/USPS-T16-4-6, 8-9 AAP/USPS-T17-1, 5, 9-10, 13 redirected to T16 ABA&NAPM/USPS-T21-27 redirected to T16 ANM/USPS-T2-2, 6, 8 redirected to T16 DFC/USPS-T16-1 DMA/USPS-T16-1-3 MPA/USPS-T16-1-7, 9-16 OCA/USPS-T16-1-2 TW/USPS-T17-19 redirected to T16 UPS/USPS-T16-1-2, 5-7, 8c-f

Respectfully submitted,

Margaret P. Crenshaw

Margaret P. Crenshaw
Secretary

INTERROGATORY RESPONSES OF
UNITED STATES POSTAL SERVICE
WITNESS CARL G. DEGEN (T-16)
DESIGNATED AS WRITTEN CROSS-EXAMINATION

Interrogatory:	Designating Parties:
AAP/USPS-T16-4	UPS
AAP/USPS-T16-5	UPS
AAP/USPS-T16-6	UPS
AAP/USPS-T16-8	UPS
AAP/USPS-T16-9	UPS
AAP/USPS-T16-10	AAP
AAP/USPS-T16-11	AAP
AAP/USPS-T17-1 redirected to T16	AAP, UPS
AAP/USPS-T17-5 redirected to T16	AAP, UPS
AAP/USPS-T17-9 redirected to T16	AAP, UPS
AAP/USPS-T17-10 redirected to T16	AAP, UPS
AAP/USPS-T17-12 redirected to T16	AAP
AAP/USPS-T17-13 redirected to T16	AAP, UPS
ABA&NAPM/USPS-T21-27 redirected to T16	UPS
ANM/USPS-T2-2 redirected to T16	ANM, UPS
ANM/USPS-T2-6 redirected to T16	ANM, UPS
ANM/USPS-T2-8 redirected to T16	ANM, UPS
DFC/USPS-T16-1	UPS
DMA/USPS-T16-1	MPA, UPS
DMA/USPS-T16-2	MPA, UPS
DMA/USPS-T16-3	MPA, UPS
MPA/USPS-T16-1	MPA, UPS
MPA/USPS-T16-2	MPA, UPS
MPA/USPS-T16-3	MPA, UPS
MPA/USPS-T16-4	MPA, UPS
MPA/USPS-T16-5	MPA, UPS
MPA/USPS-T16-6	MPA, UPS
MPA/USPS-T16-7	MPA, UPS
MPA/USPS-T16-8	MPA
MPA/USPS-T16-9	MPA, UPS
MPA/USPS-T16-10	MPA, UPS
MPA/USPS-T16-11	MPA, UPS
MPA/USPS-T16-12	MPA, UPS

MPA/USPS-T16-13	MPA, UPS
MPA/USPS-T16-14	MPA, UPS
MPA/USPS-T16-15	MPA, UPS
MPA/USPS-T16-16	MPA, UPS
MPA/USPS-T16-17	MPA
OCA/USPS-T16-1	MPA, OCA, UPS
OCA/USPS-T16-2	OCA, UPS
OCA/USPS-T16-3	OCA
TW/USPS-T17-19 redirected to T16	TW, UPS
UPS/USPS-T16-1	UPS
UPS/USPS-T16-2	UPS
UPS/USPS-T16-5	UPS
UPS/USPS-T16-6	UPS
UPS/USPS-T16-7	UPS
UPS/USPS-T16-8c	UPS
UPS/USPS-T16-8d	UPS
UPS/USPS-T16-8e	UPS
UPS/USPS-T16-8f	UPS

Response of United States Postal Service Witness Degen
To Interrogatories of Association of American Publishers

AAP/USPS-T16-4. On page 44 (lines 18-20) of your testimony, you state that "[i]n total, volume variability of manual parcel sortation should be substantially less than 100 percent, primarily because set-up and take-down time are substantial relative to time spent actually sorting the parcels." In view of this statement, please explain why in this case, the Postal Service used a pool volume variability function of .997 for manual parcels at non-MODS offices as shown in Table 1 on page 25 of you [sic] testimony.

AAP/USPS-T16-4 Response.

I assume that the "Table 1" reference is to page 25 of witness Van-Ty-Smith's testimony (USPS-T-17). For the requested explanation, please see witness Bozzo's testimony, USPS-T-15, at pages 133-135.

Response of United States Postal Service Witness Degen
To Interrogatories of Association of American Publishers

AAP/USPS-T16-5. On page 50-51 of your testimony, you discuss platform operations. Please confirm that your description of platform operations pertains both to BMCs and MODs offices. Please identify any portion of your description that applies only to BMCs or to MODs offices.

AAP/USPS-T16-5 Response.

Partly confirmed. Much of the cited description applies to both the MODS and BMC platform operations. However, the portions of the cited description dealing with handling of collection mail will not apply to BMCs. Additionally, some portions of the description are related to relatively narrow processing windows for First-Class Mail, and will not apply equally since the BMCs primarily process Standard Mail (A and B).

Response of United States Postal Service Witness Degen
To Interrogatories of Association of American Publishers

AAP/USPS-T16-6. On page 50 (line 19) of your testimony, you state that "[t]he waiting time is not volume variable." With respect to this statement, please explain the extent to which any costs associated with waiting time in platform operations have been included as volume variable costs for platform operations at BMCs in this proceeding.

AAP/USPS-T16-6 Response.

The IOCS-based volume-variability method employed for BMC operations classifies all tallies with activity code 6210 (waiting time in Platform acceptance activities) as non-volume-variable, regardless of the type of office. Thus, the Postal Service does not treat any BMC costs associated with activity code 6210 tallies as volume-variable. See also page II-56 of Docket No. R2000-1, USPS LR-I-106, and section 3.1.1 of Docket No. R97-1, USPS LR-H-1.

Response of United States Postal Service Witness Degen
To Interrogatories of Association of American Publishers

AAP/USPS-T16-8. On page 69 (lines 11-14) of your testimony, you state that "[t]o compensate for the use of 100 percent volume-variability for the allied cost pools, the not-handling tallies in those pools are distributed to subclasses using a key developed for all cost pools in Cost segment 3.1." With respect to this statement, please explain fully the derivation of the new distribution key for not-handling tallies, how it differed from previous keys used for not-handling tallies and how this key affected the mail processing costs distributed to Bound Printed Matter ("BPM") in this case.

AAP/USPS-T16-8 Response.

For the requested detailed description of the treatment of allied labor not-handling tallies, including a description of the previous not-handling methodology, please see witness Van-Ty-Smith's testimony at pages 16-17 and USPS LR-I-106. To indicate the effect of the distribution key changes for BPM, in the table attached to this response, I compare the BY98 BPM distribution key shares for MODS allied labor cost pools presented by witness Van-Ty-Smith with the corresponding estimated shares using the previous method, employed in the Postal Service's FY98 CRA.

Comparison of BPM distribution key shares, MODS allied labor cost pools

Cost Pool	FY98 BPM Distribution Key Share (USPS method)	BY98 BPM Distribution Key Share
		USPS-T-17, Table 3 ("Col Pct")
1Bulk pr	0.13%	0.32%
1SackS_m	1.76%	1.0%
1OpBulk	1.25%	0.85%
1OpPref	0.76%	0.61%
1Platform	1.01%	0.65%
1Pouching	0.37%	0.41%
1SackS_h	1.49%	0.86%
1SCAN	0%	0.28%

Response of United States Postal Service Witness Degen
To Interrogatories of Association of American Publishers

AAP/USPS-T16-9. On page 69 (lines 16-20) of your testimony, you state "[t]he broad distribution of allied costs is used as a compromise, since the Postal Service was not ready to resubmit a method incorporating estimated volume-variabilities for allied costs pools. This compromise yields reasonable results (i.e. subclass costs) when compared to those based on estimated volume-variabilities and distribution keys specific to each cost pool." With respect to this statement:

(a) Please provide a complete set of calculations showing the derivation of mail processing costs for BPM that results from adopting the "compromise" proposal and from adopting estimated volume variabilities and distribution keys for each cost pool. Please explain fully why this compromise is "reasonable" for BPM.

(b) Please provide all workpapers and supporting calculations showing the derivation of mail processing costs for BPM that would have resulted from adopting the Postal Service's estimated volume variabilities for allied cost pools in conjunction with any other alternative distribution keys for not-handling tallies that were considered by the Postal Service but not proposed in this case.

AAP/USPS-T16-9 Response.

a. The "compromise" is embodied in the BY98 mail processing costs presented by witness Van-Ty-Smith; see USPS-T-17 and USPS LR-I-106 for details. The final Cost Segment 3.1 volume-variable costs are presented in Exhibit USPS-11A of witness Meehan's testimony, USPS-T-11. The Fiscal Year 1998 (FY98) CRA, computed per the Postal Service's previous method, uses the Docket No. R97-1 variabilities and distribution keys, the latter not incorporating the broad distribution of not-handling tallies. It is my understanding that the Segments and Components Report from the FY98 CRA was filed under the Commission's periodic reporting requirements.

Response of United States Postal Service Witness Degen
To Interrogatories of Association of American Publishers

My statement that the compromise was reasonable was not specifically focused on BPM. I believe that the compromise method is reasonable in that it leads to *relative* costs are closer to those that would be obtained from the use estimated volume-variability factors for allied operations than a method that employed 100 percent volume-variability factors without the broad distribution of not-handling tallies. I am not saying that the compromise methodology always provides a good approximation of the costs that would result from use of estimated allied labor variabilities. Rather, I am simply saying that the use of the 100 percent variability assumption with the broad not-handling distribution is better than the use of the 100 percent variability assumption alone.

b. There are no alternative distribution keys considered by the Postal Service other than those resulting from the Docket No. R97-1 methods and the method proposed for the BY98 CRA.

Response of United States Postal Service Witness Degen
To Interrogatories of Association of American Publishers

AAP/USPS–T16–10. Please refer to your response to subpart (c) of AAP/USPS-T17-9, (Redirected from Witness Van-Ty-Smith, USPS-T-17). With respect to the original interrogatory directed to Witness Van-Ty-Smith and your subsequent response to that interrogatory:

a. Please provide a revised and detailed response which describes how the Postal Service made the determination that distribution of not-handled tallies to the BPM subclass (as opposed to other subclasses or all subclasses as whole) was based on a "reasonable inference." Please provide all documents which show how this distribution was made and which support the "reasonable inference" made by the Postal Service.

b. Please provide a detailed explanation and definition of the term "reasonable inference" as it pertains to the determination of the distribution of mixed tallies and not-handled tallies by the Postal Service.

AAP/USPS–T16–10 Response.

a. For further discussion of the basis for witness Van-Ty-Smith's treatment of not-handling tallies, please see the response to AAP/USPS-T16-11.

b. Note that the exact term "reasonable inference" is not witness Van-Ty-Smith's term. The relevant statement, quoted in interrogatory AAP/USPS-T17-9, is, "operational associations, *from which* the subclass or mail class distribution mix can be reasonably inferred" (USPS-T-17 at page 14, lines 5-6; emphasis added. In addition to the material cited in the response to AAP/USPS-T17-9(a), the operational associations I discuss in the response to AAP/USPS-T17-9(b) are the basis for the mixed-mail distribution procedures described by witness Van-Ty-Smith. I am aware of no other meaning of "reasonable inference" in this context. See also PRC Op., Docket No. R97-1, Vol. 1, ¶3143-3144. For further discussion of not-handling tallies, please see the response to AAP/USPS-T16-11.

Response of United States Postal Service Witness Degen
To Interrogatories of Association of American Publishers

AAP/USPS-T16-11. Please refer to your response to AAP/USPS-T17-12. Please confirm that no studies, reports, data, documents or other evidence support the statement on page 16 (lines 2-4) of USPS witness Van-Ty-Smith's testimony that "the not-handling tallies for non-allied cost pools are proposed by the USPS to be distributed to subclasses using the direct and distributed mixed tallies within the same cost pool." If you do not confirm this statement, please identify, in detail, all documents which support witness Van-Ty-Smith's statement on page 16 (lines 2-4) of her testimony and provide all such documents with your response.

AAP/USPS–T16–11 Response.

Not confirmed. The key statement is in the response to AAP/USPS-T17-9(b), which I cite in response to AAP/USPS-T17-12, is, "Please note that witness Van-Ty-Smith's treatment of not-handling tallies in non-allied labor cost pools is such that they do not affect the subclass distribution key shares. See also my testimony, USPS-T-16, at pages 73-74, and my response to ANM/USPS-T2-8." In other words, witness Van-Ty-Smith's treatment of the not-handling tallies is equivalent to ignoring the not-handling tallies and basing the distribution key subclass shares on the handling tallies (both direct tallies and distributed mixed-mail tallies). This approach was justified in the evidence from Docket No. R97-1 cited in the response to AAP/USPS-T17-1(c), which I also referenced in the response to AAP/USPS-T17-9(a).

Response of United States Postal Service Witness Degen
To Interrogatories of Association of American Publishers
(Redirected from Witness Van-Ty-Smith, USPS-T-17)

AAP/USPS–T17–1. On page 8 of your testimony, you state that in Part II of LR-106 "[a] pool-specific distribution key is then applied to the volume variable cost to obtain costs in that pool for each subclass." In addition, Table 1 of your testimony shows pool total costs for six mail processing cost pools at BMCs and shows pool total costs for eight mail processing cost pools at non-MODS facilitates.

a. With respect to the six mail processing cost pools at BMCs shown in Table 1, please describe each pool-specific distribution key that was used within each pool, the Postal Service's justification for its choice of each distribution key and the value of that key for the Bound Printed Matter ("BPM") subclass.

b. With respect to the eight mail processing cost pools at non-MODS facilities shown in Table 1, please describe each pool-specific distribution key that was used within each pool, the Postal Service's justification for its choice of each distribution key and the value of that key for the BPM subclass.

AAP/USPS–T17–1 Response.

a. The distribution key subclass shares (including those for BPM) for the non-MODS cost pools are provided in witness Van-Ty-Smith's Table 3; see USPS–T–17 at pages 37-38. The computational procedures are described in detail in USPS–LR–I–106. For a justification of the BMC cost pool methodology, please see Docket No. R97-1, USPS–T–12. See also the Docket No. R97-1 testimony of witnesses Panzar (USPS–T–11) and Christensen (USPS–RT–7) for a discussion of the related economic theory.

b. The distribution key subclass shares (including those for BPM) for the non-MODS cost pools are provided in witness Van-Ty-Smith's Table 3; see USPS–T–17 at pages 37-38. The computational procedures are described in detail in USPS–LR–I–106. For a justification of the non-MODS cost pool

Response of United States Postal Service Witness Degen
To Interrogatories of Association of American Publishers
(Redirected from Witness Van-Ty-Smith, USPS-T-17)

methodology, please see USPS–T–16 at pages 69-72. See also the response to part (a).

Response of United States Postal Service Witness Degen
To Interrogatories of Association of American Publishers
(Redirected from Witness Van-Ty-Smith, USPS-T-17)

AAP/USPS–T17–5. Footnote 7 on page 10 of your testimony categories specific activities as allied operations. Please confirm that the activities listed (i.e., Platform) are exactly the same, when performed at non-MODS offices, MODS offices or BMCs. Please explain any answer that does not confirm this statement.

AAP/USPS–T17–5 Response.

Partly confirmed. The activities performed in MODS, BMC, and non-MODS offices under a given IOCS activity classification will not be exactly the same, because of the differing roles each type of facility plays in the Postal Service's mail processing network. However, many activities classified as (for instance) Platform activities in IOCS will be similar in different types of facilities. See also USPS–T–16 at pages 11-15 and 50-51.

Response of United States Postal Service Witness Degen
To Interrogatories of Association of American Publishers
(Redirected from Witness Van-Ty-Smith, USPS-T-17)

AAP/USPS–T17–9. On page 14 (lines 3-6) of your testimony, you that state "[m]ixed tallies and not-handled tallies are subsequently *distributed* to subclasses or mail classes, using all available tally information based on operational associations, from which the subclass or mail class distribution mix can be reasonably inferred." With respect to this statement:

a. (Please explain how non-handled tallies can be associated with individual subclasses since, as noted on page 14 (lines 1-3) of your testimony, these tallies do not contain information such as mail shape or item type that can be associated with subclasses.

b. Please define "operational associations" and list all operational associations that were used in this case to distribute not-handled tallies to subclasses.

c. Please define "reasonably inferred," and provide all studies, reports, data or other evidence that you relied upon to make a determination that a distribution of not-handled tallies to the BPM subclass was based on a "reasonable" inference.

AAP/USPS–T17–9 Response.

a. "Not-handling" costs, to the extent they are volume-variable, can be associated with subclasses of mail via the subclass shares of the volume-related "cost driver" for a given cost pool. In the case of mail processing operations, the "cost driver" is usually handlings of mail. See also USPS-T-16 at page 73 and the Docket No. R97-1 testimony cited in the response to AAP/USPS–T17–1(a).

b. It is my understanding that witness Van-Ty-Smith's use of the term "operational associations" refers to the association of various types of mixed-mail tallies with certain shapes of mail and/or mail classes. See my response

Response of United States Postal Service Witness Degen
To Interrogatories of Association of American Publishers
(Redirected from Witness Van-Ty-Smith, USPS-T-17)

to ANM/USPS–T2–6. Please note that witness Van-Ty-Smith's treatment of not-handling tallies in non-allied labor cost pools is such that they do not affect the subclass distribution key shares. See also my testimony, USPS-T-16, at pages 73-74, and my response to ANM/USPS-T2-8.

c. See the response to part (a).

Response of United States Postal Service Witness Degen
To Interrogatories of Association of American Publishers
(Redirected from Witness Van-Ty-Smith, USPS-T-17)

AAP/USPS–T17–10. On page 14 (lines 21-23) of your testimony, you state that "[m]ixed item and non-empty container tallies are then distributed to subclasses by 'filling' the mixed/empty single items and the piece/item in non-empty containers in proportion to the direct tally subclasses from the same item and piece shapes." Please provide any studies, reports, data or other evidence that supports the use of this procedure.

AAP/USPS–T17–10 Response.

Please see Docket No. R97-1, USPS-T-12; see also Docket No. R2000-1,

USPS-T-16 at pages 58-68.

Response of United States Postal Service Witness Degen
To Interrogatories of Association of American Publishers
(Redirected from Witness Van-Ty-Smith, USPS-T-17)

AAP/USPS-T17-12. On page 16 (lines 2-4) or your testimony, you state that in this docket, "the not-handling tallies for *non-allied* cost pools are proposed by the USPS to be distributed to subclasses using the direct and distributed mixed tallies within the same cost pool." Please provide any studies, reports, data or other evidence that support the use of this procedure.

AAP/USPS–T17–12 Response.

Please see the response to AAP/USPS-T17--9.

Response of United States Postal Service Witness Degen
To Interrogatories of Association of American Publishers
(Redirected from Witness Van-Ty-Smith, USPS-T-17)

AAP/USPS-T17-13. On page 16 (lines 9-13) of your testimony, you state that in this docket "the not-handling tallies for the *allied* cost pools are distributed to subclasses, based on the aggregated handling tallies in all distribution and allied operations for each of the BMC, MODS and non-MODS facility groupings." With respect to this statement:

a. Please provide any studies, reports, data or other evidence that support the use of this procedure.

b. Please explain why the Postal Service has chosen, in this docket, to depart from the procedure for not-handling tallies for the allied cost pools relied upon by the Postal Service in Docket R97-1.

AAP/USPS–T17–13 Response.

a. Please see USPS-T-16 at page 69 and the responses to ANM/USPS-T2-8, AAP/USPS-T16-8 and AAP/USPS-T16-9.

b. Please see the response to part (a).

Response of United States Postal Service Witness Degen
To Interrogatories of American Bankers Association and National Association of Presort Mailers
(Redirected from Witness Smith, USPS-T-21)

ABA&NAPM/USPS-T21-27.

(a) Regarding your use of IOCS labor time distribution keys for distributing mail processing costs, what percentage of the time is the labor running mail of only one rate category through automation equipment?

(b) What percentage of the time is the labor running mixed rate categories through automation equipment?

(c) What percentage of the time is the labor running more than one class of mail through the automation equipment?

(d) For the mixed mail in items b. and c. above, how can the labor time sampled be assured to represent the correct percentages of that mixed mail by class, subclass, or rate category?

ABA&NAPM/USPS-T21-27 Response.

(a)-(c) IOCS tallies data identify, where possible, the class, subclass, and/or "rate category" of the mail (if any) being handled at the time of the reading, but not whether a single rate category or multiple rate categories of mail were being run in the operation. Therefore, data do not exist to compute the requested percentages.

My understanding is the Postal Service's operating procedures normally commingle rate categories within a class of mail. At any given moment, mail of a single rate category might be processed in a particular operation. For example, one or more trays from a given mailing might be worked consecutively on one piece of equipment. Sometimes, mail classes are

Response of United States Postal Service Witness Degen
To Interrogatories of American Bankers Association and National Association of Presort Mailers
(Redirected from Witness Smith, USPS-T-21)

also commingled. Commingling of mail classes will occur most commonly in schemes where mail is "finalized" (e.g., DPS).

(d) In general, the appropriate distribution key for a pool of volume-variable labor costs in a given mail processing operation would be the subclass distribution of piece handlings in that operation. However, piece handling data are not available for mail processing operations by class, subclass, and rate category of mail, so distribution keys are formed using IOCS tallies to estimate the proportions of time spent handling mail of various subclasses. The relationship between the time and piece handling proportions was discussed in Dr. Christensen's testimony in the last rate case (see Docket No. R97-1, Tr. 34/18221-18223). The randomness of the IOCS sample ensures that a representative sample of handling time in the automation operations, and thus of the piece handlings, will be obtained. A portion of the handling tallies—the "mixed-mail" tallies—do not indicate the subclass(es) being handled at the time of the reading, and therefore provide incomplete information, but do contain useful information with which the likely subclasses can be inferred. Thus, the distribution of mixed-mail tallies is intended to avoid biased estimates of the subclass distribution of all piece handlings that would result from throwing out the information in the mixed-mail tallies.

Response of United States Postal Service Witness Degen
To Interrogatories of American Bankers Association and National Association of Presort Mailers
(Redirected from Witness Smith, USPS-T-21)

Note also that the phrase "mixed mail" as you apply it with respect to parts (b) and (c) of the interrogatory does not correspond to the notion of mixed-mail tallies as it is used in my testimony. The latter refers to tallies generated by a clerk or mailhandler reading taken in IOCS when the sampled employee is handling multiple non-identical mail pieces, or an item or container containing non-identical mail. The actual contents of "mixed-mail" observations may, therefore, be mail of a single subclass or rate element, as well as mail of multiple rate elements, classes, or subclasses.

Response of United States Postal Service Witness Degen
to Interrogatories of Alliance of Nonprofit Mailers
(Redirected from Witness Ramage, USPS-T-2)

ANM/USPS–T2–2. During the period FY 1990 through FY 1999, the Postal Service has increased the volume of letter mail sorted on automation equipment and the volume of flats sorted on mechanized equipment. At the same time, the percentage of not handling tallies has also increased.

(a) Please explain why automation and mechanization have resulted in so many more not handling IOCS tallies.

(b) Please produce all studies, analyses, reports and similar documents generated since Docket No. R97-1 that support your response to part (a).

ANM/USPS–T2–2 Response.

(a) I do not believe it is correct to draw a direct link between the automation of the letter mail stream and the increase in the percentage of IOCS not-handling tallies. The proportion of not-handling tallies in letter automation operations is actually lower than the average for all mail processing cost pools (see Docket No. R97-1, Tr. 12/6227-6228). Between FY 1996 and FY 1998, a period in which the applicable data collection rules have remained unchanged, the overall not-handling percentage (of dollar-weighted tallies) in mail processing has changed very little – from 42.6 percent to 43.35 percent. Direct comparisons of not-handling tally percentages with earlier years are not possible because of significant changes in data collection rules; see Docket No. R97-1, Tr. 36/19338. Note that automation will tend to reduce clerk and mail handler labor, and therefore tallies of all types, in sortation operations but not (other things equal) allied labor and some support operations, which have higher not-handling tally proportions. Such a change could increase the observed not-handling tally percentage in mail processing

Response of United States Postal Service Witness Degen
to Interrogatories of Alliance of Nonprofit Mailers
(Redirected from Witness Ramage, USPS-T-2)

as a whole without a change in the not-handling percentages for any given mail processing cost pool.

(b) I obtained the FY 1998 not-handling percentage from USPS LR-I-184. I obtained the FY 1996 not-handling percentage from my analysis that generated the table at Docket No. R97-1, Tr. 12/6227-6228: I computed FY 1996 dollar-weighted not-handling tallies in mail processing cost pools of $5,401,594,000 and total dollar-weighted mail processing tallies of $12,679,788,000.

Response of United States Postal Service Witness Degen
to Interrogatories of Alliance of Nonprofit Mailers
(Redirected from Witness Ramage, USPS-T-2)

ANM/USPS–T2–6. Please confirm that, if the costs associated with mixed mail tallies are distributed within MODS pools in proportion to direct tallies, mixed mail tallies add no independent information to cost estimates for the classes and subclasses of mail. If you fail to confirm unconditionally, please:

(a) Explain fully.

(b) Explain how the cost distribution can change as the proportion of mixed tallies increases or decreases.

ANM/USPS–T2–6 Response.

Not confirmed.

a. A mixed-mail tally adds information to the cost process to the extent information in the tally (e.g., the item type or container contents) identifies the likely shape(s) or class(es) of mail contained in the item or container. See Docket No. R97-1, Tr. 12/6580.

b. The cost distribution can change as the proportion of mixed-mail tallies varies to the extent the subclass shares in the mixed-mail distribution key(s) differ from the subclass distribution of the applicable set of all direct tallies. Please see witness Van-Ty-Smith's response to ANM/USPS–T2–5 for a description of the actual subclass distribution process for mixed-mail tallies.

Response of United States Postal Service Witness Degen
to Interrogatories of Alliance of Nonprofit Mailers
(Redirected from Witness Ramage, USPS-T-2)

ANM/USPS–T2–8. Please confirm that, if the costs associated with "not handling" mail tallies are distributed within MODS pools in proportion to direct tallies, "not handling" mail tallies add no independent information to cost estimates for the classes and subclasses of mail. If you fail to confirm unconditionally, please:

(a) Explain fully.

(b) Explain how the cost distribution can change as the proportion of "not handling" tallies increases or decreases.

(c) Identify any other additional information that you contend is gained from "not handling" mail tallies.

ANM/USPS–T2–8 Response.

a. – c. Confirmed that not-handling tallies add no information to the subclass distribution of mail handlings; see USPS–T–16 at pages 73-74. Please see witness Van-Ty-Smith's response to ANM/USPS-T2-8 for a description of the actual subclass distribution process for not-handling tallies. Please also see the response to ANM/USPS-T2-6(b). Note alsc that, in most cost pools other than allied labor cost pools, the not-handling distribution (in proportion to direct and distributed mixed-mail tallies in the same cost pool) has the same effect on the subclass shares as ignoring the not-handling tallies. In the allied labor cost pools, the broad distribution of not-handling tallies reflects the *lack* of information on patterns of cost causation by subclass in the not-handling tallies. My analysis of mail processing operations indicates that a portion of allied labor costs are not "driven" (as volume-variable costs) by the subclasses of mail observed in the allied cost pools. Given the use of the Commission's volume-variability assumptions, I believe that the broad distribution of not-handling tallies is

Response of United States Postal Service Witness Degen
to Interrogatories of Alliance of Nonprofit Mailers
(Redirected from Witness Ramage, USPS-T-2)

appropriate to ensure that the subclasses of mail observed in allied operations do not bear an inappropriately large share of the measured volume-variable costs.

Response of United States Postal Service Witness Degen
to Interrogatory of Douglas F. Carlson

DFC/USPS-T16-1. Please refer to witness Meehan's response to DFC/USPS-T30-6 and -7. In responding to the following questions, please provide answers that a person who understands mail processing but who may not be familiar with jargon and other terms related to cost measurement and cost systems should be able to understand. Also, for these questions, if the mail-processing cost of mailing a return receipt back to the customer is identical to the mail-processing cost of a post card, you do not need to discuss the cost issues related to the mail-processing cost of post cards.

a. To the extent that your knowledge or testimony covers this issue, please explain why costs for certified mail, return receipt, and return receipt for merchandise have increased substantially since Docket No. R97-1. In answering this question, please break the total cost for each service into each processing step or other factor (e.g., window-clerk time, carrier delivery time, etc.) that contributes to the total cost of this service and explain the amount by which, and why, that cost has increased since Docket No. R97-1.

b. To the extent that your knowledge or testimony covers this issue, for every processing step or other factor (e.g., window-clerk time, carrier delivery time, etc.) that contributes to the cost of certified mail, return receipt, and return receipt for merchandise, please explain exactly how the cost of that step or factor is measured and calculated.

c. Please explain any assumptions implicit in methodologies that you use or advocate for measuring costs associated with certified mail, return receipt, and return receipt for merchandise or attributing costs to those services.

d. Please discuss any assumptions, changes in methodology, or other factors that may cause you to have any doubt about the accuracy of the costs for certified mail, return receipt, and return receipt for merchandise that are the basis for the Postal Service's proposed fees in this docket.

e. Has the Postal Service adjusted certified-mail costs to account for the electronic signature-capture process? Please explain and provide details.

Response of United States Postal Service Witness Degen
to Interrogatory of Douglas F. Carlson

DFC/USPS-T16-1 Response.

a. My testimony addresses the rationale behind changes to the methods by which volume-variable mail processing costs are distributed to the subclasses of mail and special services. These include changes to the "encirclement" rules that determine whether an In-Office Cost System (IOCS) tally where the sampled employee is handling a special service piece should be associated with the special service or the underlying subclass of mail. Please see my testimony, USPS-T-16, at pages 57-58,and 70-74 for a discussion; the details of the implementation are addressed in the testimony of witness Van-Ty-Smith (USPS-T-17). Window service and carrier costs are beyond the scope of my testimony.

In the table below, I estimate the effect of the volume-variable cost distribution changes on the Certified Mail cost input to witness Meehan's B-series workpapers for clerk and mail handler mail processing labor (Cost Segment 3); note that witness Meehan's workpapers do not separately identify return receipt costs. The table compares the Postal Service's BY 1998 costs with those that would have obtained if the Postal Service had used the volume-variable cost distribution method it proposed in Docket No. R97-1, holding other factors equal. I estimate that volume-variable cost for Certified mail would have been approximately $36.411 million, $4.546 million (14.3

percent) higher than the BY 1998 Certified cost input to witness Meehan's WS 3.1.1a, had the Postal Service employed its Docket No. R97-1 distribution method without modifications.

Estimated effect of BY1998 volume-variable cost distribution changes on Certified Mail costs ($000)

BY 1998 Method	BY 1998 costs using R97-1 distribution method, other factors equal	Difference
31,865	36,411	-4,546

The effects, if any, of other potential causes for the referenced cost changes are beyond the scope of my testimony.

b. Please see witness Van-Ty-Smith's testimony, USPS-T-17 at pages 7-20, and USPS LR-I-106 for descriptions of the computational methods used to distribute volume-variable costs to the subclasses of mail and special services.

c. My analysis is an element of the "volume-variability/distribution key" method for computing volume-variable costs for the subclasses of mail and special services. See USPS LR-I-1, Appendix H, and witness Bozzo's testimony, USPS-T-15, at pages 53-56 for a discussion.

d. The changes in methodology increase my confidence that, other things equal, the Postal Service's methods provide the most accurate

available estimate of the actual costs incurred for the subclasses of mail and special services in the Base Year.

e. Carrier costs and adjustments to projected test year costs to account for new technology are beyond the scope of my testimony.

Interrogatories of Direct Marketing Association
To United States Postal Service Witness Degen

DMA/USPS-T16-1. Please refer to Appendix A of LR-I-115 and Table 8 on page 66 of your testimony.

(a) Please confirm that the 1995 platform survey collected information about single-piece handlings and item handlings as well as information on container handlings. If not confirmed, please explain.

(b) Individually for each shape of mail, please provide (using data from the 1995 platform study) a subclass profile of single pieces being handled at the platform. Please provide the profile in an electronic spreadsheet in a form similar to Table 8 of your testimony.

(c) Individually for each item type, please provide a subclass profile (using data from the 1995 platform study) of single items being handled at the platform. Please provide the profile in an electronic spreadsheet in a form similar to Table 8 of your testimony.

(d) Individually for each item type and mail shape, please provide a subclass profile (using data from the 1995 platform study) of items and loose pieces in identical containers being handled at the platform. Please provide the profile in an electronic spreadsheet in a form similar to Table 8 of your testimony.

(e) Individually for each item type and mail shape, please provide a subclass profile (using data from the 1995 platform study) of items and loose pieces in non-identical containers being handled at the platform. Please provide the profile in an electronic spreadsheet in a form similar to Table 8 of your testimony.

(f) What percentage of container tallies in the 1995 platform study was for identical containers?

DMA/USPS-T16-1 Response.

(a) Confirmed.

(b) See Spreadsheet 1b in LR-I-204.

(c) See Spreadsheet 1c in LR-I-204.

Response of United States Postal Service Witness Degen
To Interrogatories of the Office of the Consumer Advocate

(d) See Spreadsheet 1d in LR-I-204.

(e) See Spreadsheet 1e in LR-I-204.

(f) There were 719 container tallies of which 53 were for identical containers.

Identical containers represent 6% of the weighted container tallies.

Response of United States Postal Service Witness Degen
To Interrogatories of the Office of the Consumer Advocate

DMA/USPS-T16-2. Please refer to question 4a on page 8 of Appendix A of LR-I-115.

(a) For tallies where the employee was working "inbound transportation", in what percentage of handling tallies was the mail or equipment being handled "staying within the operation"? In what percentage of handling tallies was the mail or equipment proceeding to another operation within the facility? Please provide an operation profile of where the mail or equipment is going after the handling.

(b) For tallies where the employee was working "outbound transportation", in what percentage of handling tallies was the mail or equipment being handled coming from another operation within the facility? Please provide an operation profile of where the mail or equipment came from.

DMA/USPS-T16-2 Response.

(a) There were 1004 tallies collected where mail or empty equipment were being "handled." Of those, 157 tallies were recorded for employees working inbound transportation and 164 tallies were recorded for employees working outbound transportation. The remaining tallies were not associated with a vehicle. For tallies where the employee was working "inbound transportation", 29% of the weighted handling tallies represented mail or equipment where the next operation recorded was "staying within the operation." For tallies where the employee was working "inbound transportation", 57% of weighted handling tallies represented mail or equipment where the next operation recorded was "another operation." For the remaining tallies where the employee was working "inbound transportation", the next operation was not recorded. A profile of the destination operation for employees working inbound transportation is provided in Spreadsheet 2a of LR-I-204.

Response of United States Postal Service Witness Degen
To Interrogatories of the Office of the Consumer Advocate

(b) Of the 164 handling tallies recorded for employees working outbound transportation, 41% of the weighted tallies represented mail from another operation within the facility. A profile of those prior operations in which the mail came from is provided in Spreadsheet 2b in LR-I-204.

Response of United States Postal Service Witness Degen
To Interrogatories of the Office of the Consumer Advocate

DMA/USPS-T16-3. Please refer to Table 8 on Page 66 of your testimony.

(a) Were the percentages in the column labeled "FY95 Platform Study Distribution" developed using all container handling data from the platform study or just data for non-identical containers? If the figures were developed using data for all container handlings, please provide a revised version of Table 8 that is developed using only data for non-identical containers.

(b) To develop the figures in the column labeled "FY95 IOCS Platform Dist. Key" did you use the same method as witness Van-Ty-Smith is using to develop a distribution key for identified containers at the MODS platform cost pool? If not, please describe in detail the method you used to develop the figures in the column labeled "FY95 IOCS Platform Dist. Key."

DMA/USPS-T16-3 Response.

(a) The percentages in the column labeled "FY95 Platform Study Distribution" were developed using weighted data for all items in all of the container handling tallies collected from the platform study. A revised version of that column using only data for non-identical containers is provided in the Spreadsheet 3a in LR-I-204.

(b) The percentages in the column labeled "FY95 IOCS Platform Dist. Key" were generated using the cost distribution methodology proposed in R97-1 (LR-H-146), which is similar to Witness Van-Ty-Smith's proposed methodology in R2000-1. Please refer to the testimonies of Witness Degen (USPS-T-16) in Section III, Part G and Witness Van-Ty-Smith (USPS-T-17) in Sections II.A and II.B for detailed descriptions of the differences between the R97-1 and R2000-1 cost distribution methodologies.

Interrogatories of Magazine Publishers of America
to United States Postal Service Witness Degen

MPA/USPS-T16-1. Please refer to Docket No. R97-1, Opinion and Recommended Decision, at pages 141-142, paragraphs 3178-3179, where it states:

> [T]he Commission concludes that mixed mail costs in a given allied MODS pool should be distributed in proportion to the direct costs across all MODS pools, and that not handling costs in a given allied pool should be distributed on the combination of its direct costs and its redistributed mixed mail costs. It does so on the understanding that this is an interim solution to the lack of data on the true subclass distribution of mixed mail and not handling costs. The Commission agrees with witness Shew that the assumption that uncounted mixed mail costs have the same subclass distribution as direct mail costs is one that could be tested, if not systemwide, at least by spot sampling (Tr. 28/15527-28.) It would appear that an approach similar to the one that the Postal Inspection Service used to audit MODS data could be used to audit IOCS distribution keys. Under that approach, a small number of offices could be selected for an audit and an adequate audit team provided to count all eligible mixed mail items at the selected facility. The Postal Service should also consider collecting information that identifies the presence of mail of particular shapes and subclasses in containers, even if it is not counted. It is also clear that better models of cost responsibility for allied operations are urgently needed.

Please also refer to page 65 of your testimony, where you state "The platform study produced a relatively small sample from which to draw inferences," and to Table 8 on page 66 of your testimony.

(a) Please confirm that the 1995 Platform Study is the only data collection that the Postal Service has performed on the subclass composition of mixed-mail costs at allied operations. If not confirmed, please describe all other studies and provide copies of the reports resulting from these studies.

(b) How many containers comprise your "small sample from which to draw inferences"?

(c) Please provide coefficients of variation around the class percentages for the FY95 Platform Study Distribution column of Table 8.

(d) Please provide coefficients of variation around the subclass percentages underlying the class percentages for the FY95 Platform Study Distribution column of Table 8.

(e) Do you believe that the 8.8 percent difference in the "Priority+Express" row between the IOCS column and the Platform Study column is because "Priority+Express" mail is more likely to be in mixed containers than in

direct tallies or is simply due to sampling error in the platform study? Please explain your answer in detail. (i) If the former, please explain operationally why this would occur. (ii) If the latter, why do you believe the platform study is reliable for other classes if it is unreliable for "Priority+Express" mail?

(f) Do you believe that the 7.4 percent difference in the "Standard (A)" row between the IOCS column and the Platform Study column is because "Standard (A)" mail is more likely to be in direct tallies than in mixed containers or is simply due to sampling error in the platform study? Please explain your answer in detail. (i) If the former, please explain operationally why this would occur. (ii) If the latter, why do you believe the platform study is reliable for other classes if it is unreliable for "Standard (A)" mail?

MPA/USPS–T16–1 Response.

(a) Other than the 1995 Christensen Associates study referenced, I am unaware of any studies of the subclass composition of mixed-mail tallies in Allied operations.

(b) The number of containers sampled in the 1995 Platform Study is 719.

(c) Obtaining coefficients of variation about the referenced elements of the column in Table 8 involves a non-trivial bootstrapping analysis. I have begun this analysis, and will file the results as soon as they are available.

(d) See answer to MPA/USPS-T16-1 (c).

(e) Please note what is being compared in the question. The "FY95 IOCS Platform Dist. Key" is based substantially on tallies of "identified" containers: non-identical container tallies in which the IOCS data collector has estimated the percentage of the container's cube taken up by items and loose pieces by type. The dollar weight of each such tally is divided among the item types and loose shapes it contains using the estimated percentages as weights,

and the subclass distribution of each type of item or loose shape observed in the container is then inferred from the subclass distribution of the corresponding direct tallies of the same type. The "FY95 Platform Study Distribution," on the other hand, is based on actual counts of mail in the sampled items found in the sampled container. See LR-I-115 at page 4.

It would be more accurate to describe the difference cited in the question as a difference of 8.8 *percentage points*, rather than as an 8.8 percent difference. The percent difference between the "FY95 IOCS Platform Dist. Key" entry for Priority+Express and the corresponding entry from the "FY95 Platform Study Distribution" column is not 8.8 percent, and differs depending on which entry is used as the denominator in the computation. Also, please note that the "FY95 Platform Study Distribution" entries in Table 8 are based on tallies for items found inside of *all* containers on the platform – both identical and non-identical containers. When the proportions for the "FY 95 Platform Study Distribution" are recalculated using only tallies of non-identical containers, the share of "Priority+Express" is 6.0 percent, which corresponds to a difference of 3.4 percentage points from the corresponding "FY 95 IOCS Platform Dist. Key" entry. See also my response to DMA/USPS-T16-3 (a).

In the absence of information on their respective standard errors, it would be inadvisable to view an 8.8 percentage point difference (or a 3.4 percentage

point difference) between the "Priority+Express" proportions in the two referenced columns as evidence that "'Priority+Express' mail is more likely to be in mixed containers than in direct tallies." Without knowledge of the standard errors, one cannot make any statistically meaningful statement about whether the two proportions differ and, if they do, how big that difference might be.

(f) Again, please note what is being compared in the question. To reiterate what was said in the answer to part (e) above, the IOCS Platform distribution key is based substantially on tallies of identified containers. The dollar weights of such tallies are divided among the item types and/or loose shapes observed within them, and the subclass distribution of each item type or loose shape is inferred from the subclass distribution of the corresponding direct tallies of the same type. The distribution derived from the Platform Study, on the other hand, is based on actual counts of mail observed in items found inside the sampled containers. See LR-I-115 at page 4.

It would be more accurate to describe the difference cited in the question as a difference of 7.4 *percentage points,* rather than as a 7.4 percent difference. The percent difference between the "FY 95 IOCS Platform Distribution Key" entry for Standard (A) and the corresponding entry from the "FY 95 Platform Study" column is not 7.4 percent, and differs depending on which entry is used as the denominator in the computation. Also, please note that the

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"FY95 Platform Study Distribution" entries in Table 8 are based on tallies for items found inside of *all* sampled containers on the platform – both identical and non-identical containers. When the proportions for the "FY95 Platform Study Distribution" are recalculated using only tallies of non-identical containers, the share of "Standard (A)" is 29.1 percent, which corresponds to a difference of 3.6 percentage points from the corresponding "FY95 IOCS Platform Dist. Key" entry. See also my to DMA/USPS-T16-3 (a).

In the absence of information on their respective standard errors, it would be inadvisable to view a 7.4 percentage point difference (or a 3.6 percentage point difference) between the "Standard (A)" proportions in the two referenced columns as evidence that "'Standard (A)' mail is more likely to be in direct tallies than in mixed containers." Without knowledge of the standard errors, one cannot make any statistically meaningful statement about whether the two proportions differ and, if they do, how big that difference might be.

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MPA/USPS-T16-2. Please refer to Docket No. R97-1, Opinion and Recommended Decision, at page 140, paragraph 3174, where it states:

> The risk that witness Degen's distribution keys for allied pools suffer from the biases described above is magnified by the fact that direct costs are a small minority of the total costs in most allied pools. For example, 10 percent of the costs in the platform MODS pool are direct, while 90 percent are mixed and not handling costs. All else being equal, the risk that a 10 percent sample misrepresents the whole is much greater than the risk that a 75 percent sample misrepresents the whole.

(a) Please confirm that in Base Year 1998, less than 10 percent of the costs in the platform MODS pool were direct. If not confirmed, what percentage of platform MODS pool costs were direct?

(b) Please confirm that in Base Year 1998 less than 25 percent of the costs in all allied MODS pools were direct. If not confirmed, what percentage of allied MODS pool costs were direct?

MPA/USPS-T16-2 Response.

(a) Confirmed that less than 10 percent of the total dollar weighted tallies in the MODS platform cost pool were direct tallies (i.e., tallies containing subclass information). However, directs made up 25 percent of the total dollar weighted *handling* tallies in this pool in BY 1998.

(b) Confirmed that less than 25 percent of the dollar weighted tallies in all MODS allied cost pools were direct tallies. However, directs made up 50 percent percent of the total dollar weighted *handling* tallies in these pools in BY 1998.

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MPA/USPS-T16-3. Please refer to LR-I-115 from Docket R2000-1, and your response to MPA/USPS-T12-11(c) from Docket No. R97-1, where, in response to the question, "Has the Postal Service performed any quantitative studies to determine whether items in containers are similar to items not in containers (with respect to Class, Subclass, and shape)?," you answered: "I am aware of no such studies."

(a) Please confirm that the 1995 Platform Study was performed by Christensen Associates for the Postal Service. If not confirmed, please explain. If confirmed, please provide the names of all Christensen Associates employees who were involved in the study.

(b) Please state whether you were aware of the 1995 platform study when you responded to MPA/USPS-T12-11 (c) in Docket No. R97-1. If so, please explain in detail why you responded that you were "aware of no such studies" in that case.

(c) Please state when you were made aware of the 1995 platform study.

(d) Please state what the original purpose was of the 1995 platform study.

(e) Please state why you did not present the results of this study in Docket No. R97-1 as part of your testimony or in response to the aforementioned interrogatory.

(f) Please list all studies for which data from the 1995 Platform Study was used, and, for each, please indicate (i) whether any Christensen Associates employees were involved in writing the report, (ii) when report writing began, and (iii) when the report was completed. Please also provide a copy of each report.

(g) Are you currently aware of any other studies that assess whether items in containers are similar to items not in containers (in terms of class and subclass)? If so, please provide a copy of each.

(h) Please state whether you are currently aware of any other data with which one could assess whether items in containers are similar to items not in containers (in terms of class and subclass). If so, please provide an electronic copy of the data.

(i) Please state whether you are currently aware of any other studies that assess whether direct items are similar to mixed items (in terms of class and subclass). If so, please provide a copy of each.

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(j) Please state whether you are currently aware of any other data with which one could assess whether direct items are similar to mixed items (in terms of class and subclass). If so, please provide an electronic copy of the data.

(k) Please identify when Christensen Associates performed the analysis of the 1995 Platform Study data that you present in your testimony.

(l) Please state whether the analysis presented in your testimony is the only analysis that Christensen Associates has performed using 1995 Platform Study data?

MPA/USPS-T-16-3 Response.

(a) Confirmed. The following employees/former employees of Christensen Associates were involved in study: Carl Degen, Kerry Ehlinger, Noelle Chesley, Dan Talmo, Joseph Henningfield, Stacey McCullough, Marianne Ley, Molly Moosebrugger, Margaret Schuster, Mike McGrane, Pam Hermann, Quentin Baird, Tom Ayen, and Patricia Stachowiak.

(b) When I responded to MPA/USPS-T12-11(c) in Docket No. R97-1, the data collection phase of the 1995 Platform Study was complete, but the findings and reports presented in my testimony and in USPS-LR-I-115 had not been prepared. The question clearly pertained to studies for which there were findings and reports, as indicated by the final sentence, which read, "[P]lease summarize the findings of each study and provide a copy." At the time of my response to MPA/USPS-T12-11(c), I was aware of no such studies.

(c) I became aware of the findings of the 1995 Platform Study in December 1999 when the tally data were weighted and analyzed.

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(d) The 1995 Platform Study was originally designed to provide a profile of mail pieces in containers and items being handled in platform operations by class and shape of mail. The purpose of the study was to check the IOCS distribution.

(e) As I indicated in response to part (c), there were no results until December 1999.

(f) In October 1995 some unweighted data were provided to Nick Acheson. Specifically, he was provided destinations for third-class tallies by sack type. No report was generated. No other reports or results were produced prior to those in USPS-LR-I-115.

(g) I am not aware of any studies other than the 1995 Platform Study that assesses whether items in containers are similar to items not in containers in terms of class and subclass.

(h) I am not aware of any data, other than from the 1995 Platform Study, that could be used to assess whether items in containers are the same as items not in containers in terms of class and subclass.

(i) I am not aware of any data, other than from the 1995 Platform Study, that assesses whether direct items are similar to mixed items in terms of class and subclass.

(j) I am not aware of any data, other than from the 1995 Platform Study, that could be used to assess whether direct items are similar to mixed items in terms of class and subclass.

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(k) The analysis of the 1995 Platform Study data was performed in late 1999.

(l) Other than that described in my response to part (f), I am not aware of any data or results from the 1995 Platform Study released by Christensen Associates prior to completion of the study in December 1999.

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MPA/USPS-T16-4. Please refer to your response to DMA/USPS-T16-3(a).

(a) Please confirm that the FY95 IOCS Platform Distribution Key was developed using item and loose shape tallies for all allied operations, not just tallies in the platform operation. If not confirmed, please list all cost pools from which direct item and loose shape tallies were used to develop the key.

(b) Please confirm that witness Van-Ty-Smith's mixed-mail distribution keys for all allied operations other than Platform use only tallies from the same pool (unless there are no tallies to develop the key). If not confirmed, please explain.

(c) Please provide a revised FY95 IOCS Platform Distribution Key that is developed in the same way as the key provided in your response to DMA/USPS-T16-3(a) except that it only uses tallies from the MODS Platform cost pool.

(d) Please confirm that mixed-mail costs in the MODS Platform cost pool comprise approximately 42 percent of mixed-mail costs at MODS allied operations. If not confirmed, please state what percent of MODS allied mixed-mail costs are comprised of MODS Platform mixed-mail costs.

MPA/USPS-T-16-4 Response.

The FY95 IOCS Platform Distribution Key was not discussed in the response to DMA/USPS-T16-3(a). I assume the questions refer to the response to DMA/USPS-T16-3(b).

(a) Confirmed. Please note that this approach is consistent with witness Van-Ty-Smith's procedures for "filling" the "identified" mixed-mail containers.

(b) Confirmed.

(c) The requested data are provided in Attachment 1 to this response. Please note that the FY95 IOCS Platform Distribution Key referenced contains the subclass distribution of the dollar-weighted direct item tallies in the allied labor cost pools, which are the tallies used to distribute the dollar-weighted tallies for items in

identified containers. However, the actual distribution process for identified container tallies does not apply a single distribution key (see Docket No. R97-1, USPS-T-12 at pages 9-10). The implicit subclass distribution key for Platform items in containers weights the direct item tallies (used to form the distribution keys) according to the prorated dollar weights of the items observed in the container tallies (the quantities to be distributed). In the table in Attachment 1 I provide the implicit distribution key for Platform items in containers corresponding to the key given in Table 8, as well as the implicit key using only Platform tallies, as requested.

(d) Assuming that empty item and container tallies are considered part of the set of mixed-mail tallies, I confirm that 42.3 percent of the total dollar-weighted mixed-mail tallies in the MODS Allied cost pools are from the MODS Platform cost pool. If empty item and container tallies are not included part of mixed-mail, the share rises to 47.1 percent.

Attachment 1
Response to MPA/USPS-T16-4(c)
Page 1 of 1

Class	Table 8 "FY95 IOCS Distribution Key"	Implicit FY95 IOCS Distribution Key	Implicit FY95 IOCS Distribution Key Using Only MODS Platform Tallies
First Class	50.59%	55.86	55.05%
Priority+Express	2.63%	9.91	9.51%
Periodicals	11.53%	7.82	6.68%
Standard (A)	32.71%	21.79	22.90%
Standard (B)	1.10%	1.51	2.09%
All Other	1.44%	3.11	3.78%
Total	100.00%	100.00	100.00%

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MPA/USPS-TI6-5. Please refer to your Testimony at page 62, line 5, where you state: "There is no question of selection bias with respect to empty items." Please refer further to your Testimony at page 65, lines 4-8, where you state: "Assumption 4 uses the subclass distribution of direct items not in containers to infer the subclass distribution of items in containers...Once again, this assumption cannot be criticized for selection bias." Also, please refer further to your Testimony at page 66, lines 1-2, where you state: "Assumption 5 involves empty container tallies.... As with empty items, the issue is not selection bias." Finally, please refer to your Testimony at page 60, Table 4. In particular, please refer to the "Relevant Assumption" column.

(a) Please confirm that direct item tallies form the distribution key for mixed non-empty item tallies, mixed empty item tallies, and the mixed identified container tallies that include items. If not confirmed, please explain.

(b) Please confirm that identical container tallies and filled mixed identified container tallies form the distribution key for mixed non-identified container tallies and empty container tallies. If not confirmed, please explain.

(c) Please confirm that the combination of a and b above implies that direct item tallies—by forming the distribution key for mixed identified container tallies that include items—therefore also indirectly form part of the distribution key for mixed non-identified container tallies and empty container tallies.

(d) Please confirm that if there is selection bias for direct item tallies, it biases not only the distribution of mixed non-empty item tallies, but also the distribution of mixed empty item tallies, mixed identified container tallies that include items, mixed non-identified container tallies, and empty container tallies. If not confirmed, please explain.

(e) Please confirm that Assumption 4 ("The costs associated with tallies of items in mixed-mail containers have the same subclass distribution as the costs associated with direct item tallies, by item type") is relevant for empty containers because this assumption identifies the subclass profile for non-empty containers, which is used to identify the subclass profile of empty containers. If not confirmed, please explain.

(f) Please confirm that Assumption 3 ("The costs associated with non-identified container tallies have the same item distribution as the costs associated with identified container tallies of the same container type") is relevant for empty containers because this assumption affects the subclass profile for non-identified,

non-empty containers, which is used to identify the subclass profile of empty containers. If not confirmed, please explain.

(g) Please confirm that Assumption 1 ("The contents of items tallied as 'mixed-mail' in IOCS have the same subclass distribution as direct item tallies of the same item type") is relevant for all non-identical containers because if "mixed-mail" tallies do not have the same subclass distribution as direct item tallies then the subclass profile of direct item tallies does not accurately represent the subclass profile of items. If not confirmed, please explain.

(h) Please confirm that if direct item tallies aren't representative of all item tallies, there is no reason to believe that they would be representative of container tallies. If not confirmed, please explain.

MPA/USPS-T-16-5 Response.

(a) Partly confirmed. It may be broadly correct to say that the distribution keys for mixed and empty item tallies, as well as for the prorated portion of "identified" containers occupied by items, are based upon direct item tallies for the same item type and, where possible, the same cost pool. For the full details of the distribution key formation process, please see USPS-T-17 and USPS-LR-I-107. There is not a single key for distributing all mixed-mail item and identified container tallies, as the question seems to imply.

(b) Partly confirmed. As with part (a), the statement may be broadly correct as a casual description of the distribution process, but it omits the details that the distribution keys are formed by container type and, where possible, cost pool. For the full details of the distribution key formation process, please see USPS-T-17 and USPS-LR-I-107.

(c) Partly confirmed, subject to the caveats stated in the response to parts (a) and (b).

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(d) Partly confirmed. Because of the details of the Postal Service's mixed-mail distribution method, the "selection bias" presupposed by the statement would have to bias the subclass distribution keys at the level the tallies are employed. I have testified that I believe no significant selection bias exists for item tallies, mainly because the vast majority of them are subject to the "top piece rule." Further, by using associations between cost pool, shape, item type, and/or container type and the likely subclass contents of mixed-mail observations, the Postal Service's distribution methodology largely avoids this potential source of bias. See USPS-T-16 at pages 59-61.

(e) Confirmed that Assumption 4 is relevant to *empty containers* because empty containers are categorized with *non-identified non-empty containers* for the purposes of witness Van-Ty-Smith's distribution key procedures.

(f) Confirmed that Assumption 3 is relevant to empty containers because empty containers are categorized with non-identified non-empty containers for the purposes of witness Van-Ty-Smith's distribution key procedures.

(g) Not confirmed. The assumed relationship between direct item and mixed container tallies is specified in Assumption 4. See also the response to part (e).

(h) The statement, as written, is practically tautological. Please note that it is *not* my testimony that direct item tallies are, as a general matter, representative of container tallies.

Response of United States Postal Service Witness Degen
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MPA/USPS-T16-6. Please refer to page 66 of your Testimony at Table 8. and your response to DMA/USPS-T16-3(a).

(a) Please state what percentage of weighted container tallies is for identical containers according to the 1995 Platform Study,

(b) Please confirm that, according to Table 8, Periodicals comprised 13.3 percent of items in containers in the 1995 Platform Study. If not confirmed, please provide the correct figure.

(c) Please confirm that the percentage of periodicals in containers in the 1995 Platform Study (see (b), above) includes both items in identical containers and items in non-identical containers. If not confirmed, please explain.

(d) Please confirm that Periodicals comprised 11.2 percent of items in non-identical containers in the 1995 Platform Study. If not confirmed, please provide the correct figure.

(e) Please state the percentage of weighted items-in-identical-container tallies in the 1995 Platform Study that was comprised of Periodicals.

(f) In an electronic spreadsheet, please provide a table (in a format similar to that of Table 8 in your testimony) that shows the subclass profile of items in identical containers from the 1995 Platform Study.

(g) In an electronic spreadsheet, please provide a table (in a format similar to that of Table 8 in your testimony) that shows the subclass profile of single items from the 1995 Platform Study.

(h) In an electronic spreadsheet using the 1995 Platform Study data, please provide a table that provides the item type and loose shape profile individually for identical containers, identified containers, non-identified containers, and single items.

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MPA/USPS-T16-6 Response.

(a) As stated in my response to DMA/USPS-T16-1(f), "[t]here were 719 container tallies of which 53 were for identical containers. Identical containers represent 6% of the weighted container tallies."

(b) Confirmed.

(c) Confirmed.

(d) Confirmed.

(e) Of weighted items in identical containers, 17.4% were Periodicals.

(f) I am providing the requested subclass profile of items in identical containers from the 1995 Platform Study on worksheet "6f" of workbook file mpa-3-11.xls in USPS-LR-I-246.

(g) I am providing the requested subclass profile of single items from the 1995 Platform Study on worksheet "6g" of workbook file mpa-3-11.xls in USPS-LR-I-246.

(h) I am providing the item type and loose shape profile individually for identical containers and single items on worksheet "6h" of workbook file mpa-3-11.xls.

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Please note that the 1995 Platform Study did not collect data for identified and non-identified containers.

Response of United States Postal Service Witness Degen
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MPA/USPS-T16-7. Please refer to the document labeled USPS LR-I-115 1995 Platform Study.

(a) Please provide a copy of all training materials that were provided to the Christensen Associates personnel who collected data for the 1995 Platform Study.

(b) Please provide a copy of all written instructions that were provided to the data collectors.

(c) Please describe all training that was provided to 1995 Platform Study data collectors.

(d) Please describe all oral instructions that were given to the data collectors.

(e) Before performing the study, were the data collectors informed that there is a strong association between item type (particularly sack color) and mail class? If so, please explain who informed them of this strong association.

(f) Before performing the study, did the data collectors have any reason to believe that there is a strong association between item type (particularly sack color) and mail class? If so, why did they believe that there was a strong association?

(g) Did the data collectors report to you? If not, to whom, at Christensen Associates, did they report?

(h) In the 1995 Platform Study, how long were data collectors given to complete a tally for one container (including any information they collected about single items and loose shapes)?

(i) Please state what the time interval was between tallies in the 1995 Platform Study. If this figure was variable, please provide the average time interval between tallies and describe the method used to determine how large the time interval should be.

(j) What instructions were given to mailhandlers to ensure that they did not interrupt the data collection effort? Who provided them with these instructions (e.g., USPS facility manager, Christensen Associate personnel)?

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(k) Please describe how facilities were informed that Christensen Associates personnel were going to collect data at their facility.

(l) What percentage of tallies in the 1995 Platform Study were recorded as not *handling tallies?*

MPA/USPS-T16-7 Response.

(a) I am providing a copy of the training materials from the 1995 Platform Study in USPS-LR-I-246.

(b) I am providing a copy of the written instructions from the 1995 Platform Study in USPS-LR-I-246.

(c) The materials described in parts (a) and (b) were provided to data collectors at a day-long training session conducted at Christensen Associates. In addition to going through the data collection forms, instructions, and handouts, a variety of mail pieces were provided so that data collectors could practice identifying subclasses of mail.

(d) Oral instructions were given that reiterated written materials.

(e) Data collectors were not specifically told what mail classes to expect in sacks or any other item type.

(f) Several of the data collectors had had previous acceptance-unit and in-plant experience, and so would have known the common operating/mail preparation

associations of sack color to class, but also would have been aware that those associations were not 100 percent reliable.

(g) Mike McGrane was in charge of the study. I served as lead data collector at two of the eight survey sites. In addition to Mr. McGrane, Dan Talmo, Marianne Ley, and Stacey McCullough served as on-site lead data collectors at the other survey facilities.

(h) As explained in USPS-LR-I-115, "[t]he minimum time for a tally was set at five minutes ..." In other words, tallies taking less than five minutes to complete were spaced five minutes apart. Tallies requiring more than five minutes to record took as long as required to complete counting of the observed container, item or mail piece or as long as possible to count without delaying processing of the mail.

(i) For tallies taking more than five minutes to complete, there was no time interval between the completion of one tally and the start of the next tally other than the time it took to find the next employee for sampling. Tallies requiring less than five minutes to complete were spaced five minutes apart between tally start times. The ASCII text file, mstr095.prn, submitted as part of USPS LR-I-115 is a list of all tally observations and includes the start time for each tally.

(j) To my knowledge, Postal supervisors specifically instructed mail handlers to cooperate with data collection efforts to the greatest extent possible without delaying the mail.

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(k) Facilities selected for data collection were notified by two letters, one from William Henderson (Executive Vice President/Chief Operating Officer) directed at the plant managers and one directed to finance managers from Michael Riley (Senior Vice President/Chief Financial Officer). Copies of both letters are being provided in USPS-LR-I-248.

(l) There were 1,708 tallies taken in the 1995 Platform Study, of which 704 were not-handling tallies. Not-handling tallies represent 34 percent of the weighted tallies in the study.

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MPA/USPS-T16-8. Please refer to spreadsheet dmat16q1.xls, worksheet 1e, which you provided in response to DMA/USPS-T16-1. Please provide a coefficient of variation for each percentage on this worksheet.

MPA/USPS-T16-8 Response.

I did not compute coefficients of variation for the percentages contained in this worksheet, and so am unable to provide them.

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MPA/USPS-T16-9. Please refer to spreadsheet dmat16q1.xls, worksheets 1c and 1d, which you provided in response to DMA/USPS-T16-1. Please provide corresponding spreadsheets for direct items and identical containers using 1995 IOCS data for Platform operations, including both the subclass profile by item type and the number of items included in the IOCS sample for each item type. Please also provide a coefficient of variation for each percentage distribution figure provided.

MPA/USPS-T16-9 Response.

I am providing the requested subclass profile of direct item tallies using 1995 IOCS tally data on worksheet "9" of workbook file mpa-3-11.xls in USPS-LR-I-246. Please note that IOCS identical container tallies do not contain information on item types (see USPS-LR-I-14, Handbook F-45, In-Office Cost System, Field Operating Instructions, at pages 12-5 through 12-7). Therefore I am unable to supply the requested subclass profiles by item type for items in identical containers.

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MPA/USPS-T16-10. Please refer to spreadsheet DMAt16q1.xls, worksheets 1b, 1c, 1d, and 1e, which you provided in response to DMA/USPS-T16-1. Please provide a corresponding spreadsheet that aggregates the subclass profiles for each piece and item type. In developing this spreadsheet, include all tallies for single pieces and single items (worksheets 1b and 1c), all tallies for items and loose pieces in identical containers (worksheet 1d), and all tallies for items and loose pieces in non-identical containers (worksheet 1e) from the 1995 Platform Study. The aggregation should use the appropriate relative weights for the different types of tallies. Please also provide a coefficient of variation for each percentage distribution figure provided.

MPA/USPS-T16-10 Response.

I am providing the requested subclass profile of the handling tallies from the 1995 Platform Study on worksheet "10" of workbook file mpa-3-11.xls in USPS-LR-I-246.

Please note that I did not compute coefficients of variation for these percentages, and so am unable to provide them.

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MPA/USPS-T16-11. Please refer to spreadsheet DMAt16q1.xls, worksheets 1d and 1e, which you provided in response to DMA/USPS-T16-1. These worksheets describe the subclass profile of items and loose pieces in identical and non-identical containers, and they include a figure for each item type of the "number of items (unweighted)."

(a) Please explain what the "number of items (unweighted)" refers to.

(b) Please state whether – when a worker who is handling a container is sampled – a tally is taken for every item in the container or whether the data collector records only one tally for each item type in the sampled container. If the latter, please state whether the data collector sampled all items of the item type or just one item of the item type.

(c) Please state the number of identical containers that was sampled and the number of non-identical containers that was sampled in the 1995 Platform Study.

MPA/USPS-T16-11 Response.

(a) The "number of items (unweighted)" refers to how many actual items were surveyed to develop the profile shown for each item type.

(b) Each tally represents a sampled worker. In the case of a worker who is handling a container, the number of items by type and loose pieces by shape and subclass contained within the container are recorded. Then for each item type found in the container, two items are completely inventoried to get a piece distribution by shape and subclass.

(c) There were 719 containers sampled of which 53 were recorded as identical and 666 were non-identical.

Response of United States Postal Service Witness Degen
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MPA/USPS-T16-12. Please refer to your response to DMA/USPS-T16-2, where you describe results from the 1995 Platform Study: "For tallies where the employee was working 'inbound transportation,' 57% of weighted handling tallies represented mail or equipment where the next operation was recorded as 'another operation.'" Please also refer to the section of your response to the same interrogatory, where you state: "Of the 164 handling tallies recorded for employees working outbound transportation, 41% of the weighted tallies represented mail from another operation within the facility." Please confirm that, according to the 1995 Platform Study, a portion of the work load in the platform operation is driven by work load in other operations.

MPA/USPS–T16–12 Response.

Confirmed that the Platform Study data support the conclusion that a portion of platform workload is driven by other operations. Strictly speaking, the Platform Study data indicate the movements of mail within the facility, not patterns of cost causation as such.

Response of United States Postal Service Witness Degen
To Interrogatories of Magazine Publishers of America, Inc.

MPA/USPS-T16-13. Please refer to your Testimony, at page 50, lines 2-8, where you state: "The platform operation group covers a range of activities. Workers clocked into the platform are responsible for unloading inbound trucks (with the exception of some local collection runs, which may be unloaded by workers clocked into culling and cancellation), determining where the mail needs to be taken, moving the mail to staging areas in the plant, moving the mail between operations, moving the mail from the final sorting operation to the outbound dock, and loading outbound trucks." Based upon your description of platform activities, please confirm that if the volume of mail requiring piece-sorting increased, costs in allied labor operations would also increase.

MPA/USPS–T16–13 Response.

Confirmed, other things held equal. Note that the percentage increase in the relevant costs would be expected to be smaller than the percentage increase in volume requiring piece sorting, reflecting the factors that lead to less than 100 percent volume-variability.

Response of United States Postal Service Witness Degen
To Interrogatories of Magazine Publishers of America, Inc.

MPA/USPS-T16-14. Please refer to Witness Christensen's rebuttal testimony in Docket No. R97-1, USPS-RT-7, at pages 8-9, where he states: "Suppose that workhours in the manual flats operation did, in fact, depend on both the handlings in the operation and on handlings in letter automation operations. The correct procedure in this case would be to separately identify pools of volume-variable cost associated with each cost driver, and then to distribute each pool of volume-variable cost in proportion to the subclass distribution of the respective cost driver."

a. Please confirm that your operational analysis, partially described in the passages quoted in MPA/USPS-T16-12 and MPA/USPS-T16-13, indicates that volumes at non-allied operations are a driver of a portion of allied costs.

b. Please confirm that the econometric analyses of allied costs provided by Witness Bozzo in response to MPA/USPS-T15-1 and by Witness Bradley in Docket No. R97-1 (USPS-T-14) are consistent with the conclusion in (a).

c. Pending a complete quantitative analysis of the variability of allied costs with respect to all relevant cost drivers, please confirm that there is sufficiently strong operational and econometric evidence that non-allied volumes drive a portion of allied costs to warrant an adjustment in the allied distribution keys used in the current case to reflect the role of non-allied volumes in driving allied costs.

d. As an interim adjustment pending a complete quantitative analysis of the variability of allied costs with respect to all relevant cost drivers, please confirm that one way to reflect the cost-driving role of non-allied volumes in the allied distribution keys would be to distribute some portion of allied labor costs using a distribution key based upon tallies from non-allied operations.

e. Please confirm that the not handling portions of the allied labor cost pools could be distributed broadly as an interim adjustment to reflect the role of non-allied volumes as drivers of allied costs, as described in (d).

f. Please confirm that the mixed-mail portions of the allied labor cost pools could be distributed broadly as an interim adjustment for the role of non-allied volumes as drivers of allied costs, as described in (d).

MPA/USPS–T16–14 Response.

a. Confirmed. In effect, the volumes at sorting (or other appropriate "non-allied" operations) drive a portion of allied labor costs indirectly by causing various

types of mail handling and related work in the allied operations. Note, however, that the cost drivers of allied operations can be characterized in several (non-exclusive) ways, including the description above (see also witness Christensen's testimony at Docket No. R97-1, Tr. 34/18226), but also in terms of the handlings of mail in the allied operations.

b. Confirmed.

c. Confirmed that it is my opinion that there is sufficient operational and quantitative evidence to permit the implementation of a volume-variable cost distribution procedure using the approach described by witness Christensen at Docket No. R97-1, Tr. 34/18225. Any appropriate "adjustment" for the specified reason would need to be consistent with witness Christensen's approach.

d. Confirmed, but not all adjustments would necessarily be appropriate.

e. Confirmed to whatever extent that such a procedure could be justified in terms of the volume-variable cost distribution approach described by witness Christensen at Docket No. R97-1, Tr. 34/18225. Note that there is no a priori reason why costs associated with not-handling tallies should be considered to be any more or less associated with non-allied operations than costs associated with handling tallies.

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To Interrogatories of Magazine Publishers of America, Inc.

f. The fundamental issue with mixed-mail distribution is inferring the subclass contents of the associated items and/or containers. "Broad" distribution of mixed-mail across cost pools, in the context of a distribution methodology that makes appropriate use of the information contained in item and container tallies, may be justifiable for that purpose. Note that the Postal Service's method makes use of a broadened distribution of "identified" containers in the MODS and BMC platform and non-MODS [illegible]d labor cost pools; see the response to MPA/USPS-T16-4(a) and USPS-T-17 at page 15.

Response of United States Postal Service Witness Degen
To Interrogatories of Magazine Publishers of America, Inc.

MPA/USPS-T16-15. Please refer to Witness Bozzo's Testimony (USPS-T-15) at page 136, footnote 70, where he states: 'Mr. Degen's analysis also indicates that allied operations should be expected to have lower volume-variability factors than sorting operations." Please refer further to your Testimony at page 69, lines 16-18, where you state that, "(t)he Postal Service was not ready to resubmit a method incorporating estimated volume-variabilities for allied cost pools." Finally, please refer to your Testimony at page 69, lines 1-3, where you state: "Pending further study of allied labor cost causation, the 'not handling' portions of the allied labor cost pools should be distributed broadly."

1 Please confirm that your operational analysis "indicates that allied operations should be expected to have lower volume-variability factors than sorting operations."

b. Please confirm that the econometric estimates of the variability of allied costs provided by Witness Bozzo in response to MPA/USPS-T15-1 and by Witness Bradley in Docket No. R97-1 (USPS-T-14) are consistent with the conclusions of your operational analysis described in (a).

c. Pending a complete quantitative analysis of the variability of allied costs with respect to all relevant cost drivers, please confirm that there is sufficiently strong operational and econometric evidence that allied volume-variabilities are below 100 percent to warrant an adjustment in the current case to reflect that fact.

d. As an interim adjustment pending a complete quantitative analysis of the variability of allied costs with respect to all relevant cost drivers, please confirm that one way to reflect the true lower allied volume-variabilities would be to use variability estimates for allied costs that are substantially below 100 percent.

MPA/USPS–T16–15 Response.

a. Confirmed.

b. Confirmed.

c. Confirmed that it is my opinion that there is sufficiently strong qualitative and quantitative evidence that volume-variability factors are below 100 percent in

Response of United States Postal Service Witness Degen
To Interrogatories of Magazine Publishers of America, Inc.

allied labor operations to warrant appropriate "adjustments" to the allied labor distribution methodology, such as that described at page 69 of my testimony.

d. Confirmed.

Response of United States Postal Service Witness Degen
To Interrogatories Of Magazine Publishers Of America Inc.

MPA/USPS-T16-16. Please refer to interrogatory MPA/USPS-T16-10, which requested "a corresponding spreadsheet that aggregates the subclass profiles for each piece and item type." The intent of this interrogatory was to obtain a table providing subclass profiles for each piece and item type, aggregating over "all tallies for single pieces and *single items..., all tallies for items and loose pieces in identical containers..., and all* tallies for items and loose pieces in non-identical containers...from the 1995 Platform Study." The intent of this interrogatory was *not* to obtain a table that aggregated *over* the piece and item types. Please provide a table that aggregates over container type (non-container, identical container, non-identical container) but that still provides full detail on both subclass profile and piece and item type.

MPA/USPS-T16-16 Response.

I am providing the requested subclass profile by item and piece type, aggregating over all weighted handling tallies (i.e., single piece tallies, single item tallies, and identical and non-identical container tallies), as workbook file mpa-16.xls in USPS-LR-I-301.

Response of United States Postal Service Witness Degen
To Interrogatory of Magazine Publishers of America, Inc.

MPA/USPS-T16-17. Please refer to your response to MPA/USPS-T16-14(f), in which you state that: "'Broad' distribution of mixed-mail across cost pools, in the context of a distribution methodology that makes appropriate use of the information contained in item and container tallies, may be justifiable...."

a. Please state whether you had a distribution methodology in mind when you made the quoted statement.

b. If the answer to part (a) is affirmative, please specify the nature of the "'broad' distribution of mixed mail cost pools" and the "appropriate use of the information contained in item and container tallies."

c. Please provide the volume-variable costs by cost pool and subclass resulting from the distribution methodology described in response to part (b), in a format comparable to Table 3 at USPS-T-17. Please also provide an electronic (Excel) version.

d. Please provide the SAS code used to generate the response to part (c) in hard copy and electronic form.

MPA/USPS–T16–17 Response.

a. I did not have a specific mixed-mail distribution method in mind when I made the quoted statement. However, I had considered some general types of modifications to the mixed-mail procedures, which I describe in the response to part (b).

b. I considered two general types of modifications to the mixed-mail procedures implemented by the Postal Service for the BY 1998 mail processing subclass distribution keys. First, the "broader" mixed-mail procedures employed for the MODS and BMC Platform cost pools could be extended to other allied labor cost pools. Second, for the MODS office group, the "broader" distribution of mixed-mail for the Platform (and, potentially, other allied labor cost pools) could be extended to additional non-allied labor cost pools. In any case, the

use of shape, item, or container information in the Postal Service's methods would be preserved. These types of modifications encompass a large number of specific alternative mixed-mail methods, which I have not considered individually. However, I specify what I believe to be the "broadest" acceptable mixed-mail distribution method in the table provided as Attachment 1 to this response. The results that I present in response to parts (c) and (d) employ this method.

c. Estimated volume-variable costs and distribution key shares, based on Fortran versions of the programs that compute volume-variable costs by subclass, are provided in Attachment 2 and Attachment 3 to this response. The requested Excel file will be provided in library reference USPS-LR-I-313.

d. SAS code that performs the same function as the Fortran programs used to produce the results in Attachment 2 and Attachment 3 will be provided in library reference USPS-LR-I-313.

Attachment 1
Response to MPA/USPS-T16-17
Page 1 of 1

Cost Pool Group	"Broader" distribution in USPS Base Year method	"Broadest" acceptable method
MODS	"Identified" containers in Platform cost pool are "filled" using piece- and item-handling direct tallies in all allied labor cost pools	• Broaden set of cost pools used to fill Platform identified container tallies to the set of cost pools used to distribute MODS allied labor not-handling tallies[1] • Extend the broadened treatment of identified container tallies in the Platform cost pool to identified container tallies in other allied labor cost pools, except Cancellation/Meter Prep[2] • Extend the broadened treatment of identified container tallies in allied labor cost pools (except Cancellation/Meter Prep) to tallies of mixed single items in allied labor cost pools
BMC	Mixed single items and identified containers in Platform cost pool are filled using piece- and item-handling direct tallies in all BMC cost pools	Extend the treatment of mixed single item and identified container tallies in the Platform cost pool to the BMC allied labor cost pool (USPS-T-17 SAS Code "OTHR")
Non-MODS	Mixed identified containers in Allied cost pool are filled using piece- and item-handling direct tallies in all non-MODS cost pools except Registry and Miscellaneous	Extend the treatment of identified container tallies in the Platform to tallies of mixed single items

[1] Note that the set of cost pools used to distribute MODS allied labor not-handling tallies is the set of Function 1 cost pools (except 1Misc, 1Support, Registry, and BusReply) plus LDC 79. See USPS-T-17 and LR-I-106 for details.
[2] Note that I intend that the set of allied labor cost pools include the mechanized sack sorting cost pool in LDC 13, in addition to the LDC 17 cost pools excluding Cancellation/Meter Prep.

Estimated Volume-Variable Cost by Subclass and Cost Pool
Uses Broadened Mixed-Mail Distribution Method from Response to MPA/USPS-T16-17(b)

Subclass	MODS bcs	MODS ocr	MODS fsm	MODS lsm	MODS 1SackS_m	MODS mecparc	MODS spbs Oth	MODS spbsPrio
1st L&P	470,011	105,924	383,769	52,994	18,018	563	36,878	6,501
1PreL	227,480	23,758	34,530	8,908	4,989	220	4,399	918
1Cds	12,826	4,502	610	4,464	612	3	80	26
1PreC	4,277	659	77	381	114	1	0	0
Priority	482	126	15,077	222	4,311	4,343	14,477	36,091
Express	9	6	83	2	541	22	132	389
Mailgrams	0	0	0	0	1	0	0	0
2IC	0	0	445	0	53	1	14	1
2Reg	600	23	63,735	6	4,463	499	17,277	2,196
2NP	569	173	10,263	1	636	77	3,509	418
2CL	0	0	769	0	78	2	77	2
3SP	4,425	595	7,686	65	578	144	2,452	139
3BRCRT	19,571	3,837	15,944	3	1,602	101	15,156	706
3BRO	134,430	15,552	260,487	4,138	9,585	886	63,358	2,454
3NPCRT	5,049	564	2,643	0	297	90	1,117	129
3NPO	41,732	5,192	34,087	1,916	2,022	18	9,313	204
4ZPP	7	10	969	2	1,249	587	2,505	587
4BPM	11	5	3,766	1	414	205	3,602	100
4SPC	26	0	2,846	1	175	112	2,507	92
4LIB	0	0	359	0	18	0	385	0
USPS	1,974	570	5,470	624	376	619	1,595	851
Free	98	0	510	0	76	2	1,156	177
Intl	9,227	2,974	7,352	1,410	1,896	156	1,590	861
Registry	2	51	137	1	117	5	0	7
Certified	0	0	0	0	1	0	0	0
Insurance	0	0	0	0	1	0	0	0
COD	0	0	0	0	1	0	0	0
Money Ord	0	0	0	0	0	0	0	0
Stamp Env	0	0	0	0	0	0	0	0
Sp Hndlng	1	0	0	0	7	0	0	0
PO Box	0	0	0	0	0	0	0	0
Other Special Svs	1,429	0	0	1	30	0	0	0
Total	934,238	164,522	851,615	75,142	52,261	8,656	181,579	52,849

Estimated Volume-Variable Cost by Subclass and Cost Pool
Uses Broadened Mixed-Mail Distribution Method from Response to MPA/USPS-T16-17(b)

Subclass	MODS manf	MODS manl	MODS manp	MODS Priority	MODS Id15	MODS 1bulk pr	MODS 1cancMPP	MODS 1OpBulk
1st L&P	132,536	694,810	5,044	6,360	325,321	4,714	135,902	102,984
1PreL	14,522	125,749	887	375	60,606	2,115	7,234	26,439
1Cds	314	56,205	3	5	10,451	149	3,497	3,703
1PreC	120	8,997	1	1	424	29	101	613
Priority	8,564	5,040	8,456	117,058	459	577	5,275	13,967
Express	87	928	157	1,875	0	74	75	2,116
Mailgrams	0	127	0	0	0	0	0	5
2IC	1,121	150	1	3	0	6	3	432
2Reg	56,927	9,025	1,335	533	0	529	638	18,786
2NP	8,421	1,948	182	110	0	72	149	2,881
2CL	406	2	0	2	0	4	2	84
3SP	3,075	5,339	270	278	857	133	666	2,201
3BRCRT	6,410	11,601	970	767	3,704	517	312	13,156
3BRO	94,565	140,815	4,491	1,509	27,877	1,844	3,767	75,057
3NPCRT	1,480	3,509	44	7	2,444	38	124	2,117
3NPO	17,543	56,848	101	202	10,533	478	901	14,905
4ZPP	410	586	5,474	669	0	72	366	2,620
4BPM	1,652	611	1,830	179	0	44	127	2,267
4SPC	1,193	1	1,438	115	0	30	357	1,013
4LIB	290	0	0	0	0	56	136	148
USPS	1,908	10,053	457	3,047	1,135	79	1,099	1,951
Free	63	797	127	5	0	13	56	512
Intl	3,399	14,334	358	2,488	15,727	239	1,615	5,006
Registry	64	0	1	4	0	24	26	303
Certified	0	0	0	0	0	1	0	7
Insurance	0	0	0	0	0	0	0	3
COD	0	0	0	0	0	0	0	3
Money Ord	0	0	0	0	0	0	0	0
Stamp Env	0	0	0	0	0	0	0	0
Sp Hndlng	0	0	0	0	0	0	1	71
PO Box	0	0	0	0	0	0	0	0
Other Special Svs	0	2,038	1	2	0	10	52	159
Total	355,068	1,149,513	31,630	135,596	459,539	11,845	162,480	293,506

Estimated Volume-Variable Cost by Subclass and Cost Pool
Uses Broadened Mixed-Mail Distribution Method from Response to MPA/USPS-T16-17(b)

Subclass	MODS 1OpPref	MODS 1Platform	MODS 1Pouching	MODS 1SackS_h	MODS 1scan	MODS 1EEqmt	MODS 1Support	MODS BusReply
1st L&P	293,714	371,448	186,719	59,716	18,116	16,164	22,098	8,335
1PreL	68,840	88,924	44,828	15,206	4,854	3,982	4,978	1,057
1Cds	8,698	12,622	5,578	2,019	586	638	831	292
1PreC	1,777	2,645	1,149	380	113	113	142	1
Priority	52,559	92,420	33,855	16,317	6,965	2,335	2,842	1,067
Express	5,425	11,272	4,361	2,029	1,659	500	438	6
Mailgrams	10	17	6	3	1	1	1	0
2IC	754	858	333	360	28	43	31	1
2Reg	51,078	55,717	24,931	14,518	1,872	2,396	2,097	54
2NP	6,944	9,334	3,641	2,262	289	785	340	13
2CL	311	458	180	142	12	15	16	1
3SP	5,195	8,852	3,542	1,298	254	395	317	455
3BRCRT	17,812	27,686	10,212	6,510	964	1,344	1,030	33
3BRO	107,434	153,137	70,181	28,276	6,130	6,290	7,846	316
3NPCRT	2,492	3,898	1,379	888	138	218	190	92
3NPO	23,456	33,103	14,927	6,018	1,410	1,406	1,823	32
4ZPP	6,327	18,007	3,878	3,319	384	354	334	552
4BPM	4,097	7,118	2,152	1,453	177	226	194	23
4SPC	2,146	4,351	1,388	653	166	3,723	148	506
4LIB	431	630	294	133	16	15	19	0
USPS	6,119	9,300	3,446	1,400	406	435	437	2,472
Free	1,197	1,351	799	736	42	46	50	5
Intl	14,932	25,474	11,214	3,803	1,110	1,316	1,325	87
Registry	835	3,087	528	169	59	84	191	2
Certified	15	151	10	4	2	4	1	0
Insurance	7	95	4	2	1	1	1	0
COD	6	90	4	2	1	1	1	0
Money Ord	0	0	0	0	0	0	0	0
Stamp Env	0	0	0	0	0	0	0	0
Sp Hndlng	47	70	44	19	8	6	2	0
PO Box	0	0	0	0	0	0	0	0
Other Special Svs	368	1,001	235	97	32	70	128	14,363
Total	683,028	943,116	429,817	167,731	45,794	42,906	47,848	29,765

Estimated Volume-Variable Cost by Subclass and Cost Pool
Uses Broadened Mixed-Mail Distribution Method from Response to MPA/USPS-T16-17(b)

Subclass	MODS Express	MODS Mailgram	MODS Misc	MODS Registry	MODS Rewrap	MODS Intl	MODS LD41	MODS LD42
1st L&P	3,007	0	35,925	4,335	6,562	3,927	14,216	532
1PreL	73	0	8,093	439	745	1,524	10,766	104
1Cds	89	0	1,351	375	543	522	287	33
1PreC	74	0	230	3	0	146	88	0
Priority	703	0	4,620	418	1,362	2,062	172	28
Express	33,628	0	712	1,174	4	1,977	11	2
Mailgrams	0	0	2	0	0	0	0	0
2IC	2	0	50	3	0	5	0	0
2Reg	162	0	3,409	102	114	255	22	41
2NP	39	0	553	18	5	33	239	16
2CL	1	0	26	1	0	1	0	0
3SP	30	0	515	539	104	21	9	1
3BRCRT	108	0	1,674	13	9	100	1,359	32
3BRO	936	329	12,756	68	1,241	1,015	4,240	236
3NPCRT	7	0	309	1	2	227	309	10
3NPO	151	0	2,964	59	118	358	568	4
4ZPP	24	0	543	595	513	1,850	16	0
4BPM	10	0	316	5	4	163	11	0
4SPC	9	0	241	80	222	10	2	0
4LIB	0	0	30	0	0	0	0	0
USPS	2,620	0	710	7,039	145	482	82	26
Free	4	0	81	2	0	33	1	0
Intl	4,367	0	2,154	7,885	448	68,212	73	2
Registry	24	0	310	23,538	1	818	2	0
Certified	0	0	2	0	0	0	0	0
Insurance	0	0	1	0	0	0	0	0
COD	0	0	1	0	0	0	0	0
Money Ord	0	0	0	0	0	0	0	0
Stamp Env	0	0	0	0	0	0	0	0
Sp Hndlng	0	0	3	0	0	0	0	0
PO Box	0	0	0	0	0	0	0	0
Other Special Svs	91	0	208	0	1	0	1	0
Total	46,159	329	77,789	46,691	12,145	83,742	32,476	1,069

Estimated Volume-Variable Cost by Subclass and Cost Pool
Uses Broadened Mixed-Mail Distribution Method from Response to MPA/USPS-T16-17(b)

Subclass	MODS LD43	MODS LD44	MODS LD48_Adm	MODS LD48_Exp	MODS LD48_Oth	MODS LD48_SpSv	MODS LD49	MODS LD79
1st L&P	190,701	69,878	36,764	447	40,266	20,267	98,344	6,413
1PreL	51,905	22,630	10,009	0	10,962	2,559	61,470	6,047
1Cds	6,150	984	1,703	0	1,865	890	6,372	698
1PreC	1,270	164	246	0	269	2	2,057	0
Priority	49,185	5,982	5,030	104	5,509	2,117	2,622	460
Express	3,239	854	1,262	807	1,382	5,309	12	29
Mailgrams	0	0	0	0	0	0	0	0
2IC	1,304	91	138	0	151	258	505	161
2Reg	30,222	4,951	3,764	0	4,123	596	22,491	588
2NP	4,627	692	850	0	930	24	7,702	475
2CL	176	102	23	0	26	2	87	0
3SP	3,055	820	739	0	809	596	6,733	23
3BRCRT	29,024	1,722	2,404	0	2,633	1,247	1,511	2,090
3BRO	99,902	15,400	9,485	0	10,389	2,632	17,255	12,619
3NPCRT	2,556	140	219	0	240	11	191	793
3NPO	16,325	2,726	1,757	0	1,924	571	4,219	8,497
4ZPP	13,162	781	1,105	0	1,210	442	296	430
4BPM	7,141	581	693	0	759	720	1,626	176
4SPC	4,308	186	369	0	405	9	599	10
4LIB	1,233	124	90	0	98	1	0	0
USPS	4,167	1,077	1,792	221	1,963	1,899	13,917	2,734
Free	710	1	46	0	50	2	1	0
Intl	4,066	736	980	0	1,073	3,695	1,077	28
Registry	90	9	324	0	355	2,120	26	19
Certified	0	0	1,783	0	1,953	11,279	1	0
Insurance	0	0	466	0	511	243	0	0
COD	0	0	50	0	55	127	0	0
Money Ord	0	0	1,744	0	1,911	0	0	0
Stamp Env	0	0	58	0	64	0	0	0
Sp Hndlng	0	2	6	0	6	0	0	0
PO Box	0	0	1,368	0	1,499	0	0	0
Other Special Svs	386	0	855	0	936	1,791	9,202	79
Total	524,905	130,634	86,120	1,578	94,324	59,408	258,319	42,369

Estimated Volume-Variable Cost by Subclass and Cost Pool
Uses Broadened Mixed-Mail Distribution Method from Response to MPA/USPS-T16-17(b)

Subclass	Subtotal MODS	Non-MODS MANL	Non-MODS MANF	Non-MODS MANP	Non-MODS AUTO/MEC	Non-MODS REGISTRY	Non-MODS EXPRESS
1st L&P	3,990,224	434,609	154,843	14,204	75,713	2,338	0
1PreL	963,123	118,697	15,073	1,094	38,607	891	0
1Cds	150,576	23,169	0	5	2,106	1	0
1PreC	26,665	7,572	0	3	1,537	1	0
Priority	523,258	2,362	23,160	51,796	272	315	0
Express	82,584	142	686	143	9	270	6,434
Mailgrams	173	0	0	0	0	0	0
2IC	7,305	831	3,205	32	3	0	0
2Reg	400,072	6,476	75,276	1,760	724	231	0
2NP	69,219	381	11,020	108	170	1	0
2CL	3,010	4	1,064	1	3	0	0
3SP	63,204	2,219	4,749	1,739	825	2	0
3BRCRT	203,872	14,839	21,765	259	4,813	175	86
3BRO	1,406,926	103,806	174,800	22,344	23,056	184	0
3NPCRT	33,964	1,916	2,645	6	785	1	0
3NPO	318,412	35,448	19,359	1,224	4,987	111	0
4ZPP	70,236	915	611	20,659	185	58	0
4BPM	42,457	74	3,293	8,749	37	6	0
4SPC	29,439	9	1,124	5,465	5	3	0
4LIB	4,507	2	209	1,102	1	0	0
USPS	94,697	4,434	2,004	3,719	295	782	255
Free	8,747	477	34	942	150	1	0
Intl	222,691	4,066	1,130	904	338	840	0
Registry	33,336	0	0	0	8	2,792	0
Certified	15,216	4	0	0	2	0	0
Insurance	1,335	0	0	0	0	0	0
COD	341	0	0	0	0	0	0
Money Ord	3,655	0	0	0	0	0	0
Stamp Env	122	0	0	0	0	0	0
Sp Hndlng	294	0	0	0	0	0	0
PO Box	2,867	0	0	0	0	0	0
Other Special Svs	33,568	0	0	0	2	0	0
Total	8,808,098	762,451	516,050	136,259	154,637	9,006	6,775

Estimated Volume-Variable Cost by Subclass and Cost Pool
Uses Broadened Mixed-Mail Distribution Method from Response to MPA/USPS-T16-17(b)

Subclass	Non-MODS ALLIED	Non-MODS MISC	ıbtotal Non-MODS	BMC SSM	BMC OTHR	BMC PSM	BMC SPB
1st L&P	219,296	78,007	979,011	86	1,090	477	565
1PreL	59,165	24,176	257,703	0	241	50	0
1Cds	5,012	2,591	32,887	0	179	0	0
1PreC	1,372	1,129	11,614	0	0	0	0
Priority	33,028	7,456	118,389	103	1,429	978	364
Express	5,100	1,404	14,189	0	0	0	0
Mailgrams	0	0	0	0	0	0	0
2IC	1,098	209	5,378	12	63	0	20
2Reg	35,199	7,766	127,433	3,385	11,008	67	2,979
2NP	6,660	953	19,293	909	2,550	139	153
2CL	377	60	1,510	317	250	0	82
3SP	3,820	2,640	15,993	542	4,722	1,871	2,238
3BRCRT	32,611	4,195	78,744	2,184	6,567	437	1,594
3BRO	103,418	24,964	452,572	12,582	95,284	33,053	34,690
3NPCRT	3,027	407	8,787	363	1,599	557	358
3NPO	17,210	4,048	82,387	2,233	13,209	1,842	4,360
4ZPP	14,659	2,497	39,584	5,163	49,181	15,348	5,821
4BPM	5,980	1,198	19,338	2,217	21,771	16,526	2,412
4SPC	2,467	555	9,627	1,461	15,447	13,331	1,296
4LIB	663	78	2,054	0	1,482	1,497	83
USPS	5,123	3,001	19,613	101	7,337	662	1,894
Free	1,335	122	3,062	257	755	548	252
Intl	2,127	845	10,251	2,298	13,844	5,313	5,018
Registry	1	1,126	3,928	0	118	0	0
Certified	2	16,836	16,845	0	0	0	0
Insurance	0	538	538	0	0	0	0
COD	0	322	322	0	0	0	0
Money Ord	0	0	0	0	0	0	0
Stamp Env	0	0	0	0	0	0	0
Sp Hndlng	0	0	0	0	0	0	0
PO Box	0	0	0	0	0	0	0
Other Special Svs	1	7,710	7,713	0	439	0	0
Total	558,750	194,834	2,338,763	34,213	248,565	92,698	64,180

Estimated Volume-Variable Cost by Subclass and Cost Pool
Uses Broadened Mixed-Mail Distribution Method from Response to MPA/USPS-T16-17(b)

Subclass	BMC NMO	BMC Platform	Subtotal BMC	Grand Total
1st L&P	183	704	3,105	4,972,340
1PreL	0	161	452	1,221,279
1Cds	1	60	239	183,703
1PreC	0	0	0	38,278
Priority	643	1,392	4,911	646,558
Express	0	0	0	96,773
Mailgrams	0	0	0	173
2IC	0	58	153	12,836
2Reg	36	7,932	25,408	552,912
2NP	361	2,335	6,447	94,960
2CL	1	220	870	5,391
3SP	850	3,516	13,738	92,936
3BRCRT	347	5,189	16,318	298,934
3BRO	7,340	69,602	252,551	2,114,049
3NPCRT	4	1,376	4,256	47,007
3NPO	574	8,766	30,985	431,783
4ZPP	13,980	45,306	134,800	244,620
4BPM	3,069	19,488	65,484	127,279
4SPC	1,879	13,705	47,118	86,185
4LIB	884	1,348	5,294	11,855
USPS	1,891	4,321	16,206	130,516
Free	12	550	2,373	14,182
Intl	1,767	10,432	38,673	271,614
Registry	0	89	208	37,472
Certified	0	0	0	32,062
Insurance	0	0	0	1,874
COD	0	0	0	663
Money Ord	0	0	0	3,655
Stamp Env	0	0	0	122
Sp Hndlng	0	0	0	294
PO Box	0	0	0	2,867
Other Special Svs	1	168	608	41,890
Total	33,824	196,718	670,198	11,817,059

Estimated Distribution Key Shares by Subclass and Cost Pool
Uses Broadened Mixed-Mail Distribution Method from Response to MPA/USPS-T16-17(b)

Subclass	MODS bcs	MODS ocr	MODS fsm	MODS lsm	MODS 1SackS_m	MODS mecparc	MODS spbs Oth	MODS spbsPrio
1st L&P	50.3%	64.4%	45.1%	70.5%	34.5%	6.5%	20.3%	12.3%
1PreL	24.3%	14.4%	4.1%	11.9%	9.5%	2.5%	2.4%	1.7%
1Cds	1.4%	2.7%	0.1%	5.9%	1.2%	0.0%	0.0%	0.0%
1PreC	0.5%	0.4%	0.0%	0.5%	0.2%	0.0%	0.0%	0.0%
Priority	0.1%	0.1%	1.8%	0.3%	8.2%	50.2%	8.0%	68.3%
Express	0.0%	0.0%	0.0%	0.0%	1.0%	0.3%	0.1%	0.7%
Mailgrams	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2IC	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%
2Reg	0.1%	0.0%	7.5%	0.0%	8.5%	5.8%	9.5%	4.2%
2NP	0.1%	0.1%	1.2%	0.0%	1.2%	0.9%	1.9%	0.8%
2CL	0.0%	0.0%	0.1%	0.0%	0.2%	0.0%	0.0%	0.0%
3SP	0.5%	0.4%	0.9%	0.1%	1.1%	1.7%	1.4%	0.3%
3BRCRT	2.1%	2.3%	1.9%	0.0%	3.1%	1.2%	8.3%	1.3%
3BRO	14.4%	9.5%	30.6%	5.5%	18.3%	10.2%	34.9%	4.6%
3NPCRT	0.5%	0.3%	0.3%	0.0%	0.6%	1.0%	0.6%	0.2%
3NPO	4.5%	3.2%	4.0%	2.6%	3.9%	0.2%	5.1%	0.4%
4ZPP	0.0%	0.0%	0.1%	0.0%	2.4%	6.8%	1.4%	1.1%
4BPM	0.0%	0.0%	0.4%	0.0%	0.8%	2.4%	2.0%	0.2%
4SPC	0.0%	0.0%	0.3%	0.0%	0.3%	1.3%	1.4%	0.2%
4LIB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%
USPS	0.2%	0.3%	0.6%	0.8%	0.7%	7.2%	0.9%	1.6%
Free	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.6%	0.3%
Intl	1.0%	1.8%	0.9%	1.9%	3.6%	1.8%	0.9%	1.6%
Registry	0.0%	0.0%	0.0%	0.0%	0.2%	0.1%	0.0%	0.0%
Certified	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Insurance	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
COD	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Money Ord	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Stamp Env	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sp Hndlng	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PO Box	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Special Svs	0.2%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Estimated Distribution Key Shares by Subclass and Cost Pool
Uses Broadened Mixed-Mail Distribution Method from Response to MPA/USPS-T16-17(b)

Subclass	MODS manf	MODS manl	MODS manp	MODS Priority	MODS Id15	MODS 1bulk pr	MODS 1cancMPP	MODS 1OpBulk
1st L&P	37.3%	60.4%	15.9%	4.7%	70.8%	39.8%	83.6%	35.1%
1PreL	4.1%	10.9%	2.8%	0.3%	13.2%	17.9%	4.5%	9.0%
1Cds	0.1%	4.9%	0.0%	0.0%	2.3%	1.3%	2.2%	1.3%
1PreC	0.0%	0.8%	0.0%	0.0%	0.1%	0.2%	0.1%	0.2%
Priority	2.4%	0.4%	26.7%	86.3%	0.1%	4.9%	3.2%	4.8%
Express	0.0%	0.1%	0.5%	1.4%	0.0%	0.6%	0.0%	0.7%
Mailgrams	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2IC	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
2Reg	16.0%	0.8%	4.2%	0.4%	0.0%	4.5%	0.4%	6.4%
2NP	2.4%	0.2%	0.6%	0.1%	0.0%	0.6%	0.1%	1.0%
2CL	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
3SP	0.9%	0.5%	0.9%	0.2%	0.2%	1.1%	0.4%	0.7%
3BRCRT	1.8%	1.0%	3.1%	0.6%	0.8%	4.4%	0.2%	4.5%
3BRO	28.6%	12.2%	14.2%	1.1%	6.1%	15.6%	2.3%	25.8%
3NPCRT	0.4%	0.3%	0.1%	0.0%	0.5%	0.3%	0.1%	0.7%
3NPO	4.9%	4.9%	0.3%	0.1%	2.3%	4.0%	0.6%	5.1%
4ZPP	0.1%	0.1%	17.3%	0.5%	0.0%	0.6%	0.2%	0.9%
4BPM	0.5%	0.1%	5.8%	0.1%	0.0%	0.4%	0.1%	0.8%
4SPC	0.3%	0.0%	4.5%	0.1%	0.0%	0.3%	0.2%	0.3%
4LIB	0.1%	0.0%	0.0%	0.0%	0.0%	0.5%	0.1%	0.1%
USPS	0.5%	0.9%	1.4%	2.2%	0.2%	0.7%	0.7%	0.7%
Free	0.0%	0.1%	0.4%	0.0%	0.0%	0.1%	0.0%	0.2%
Intl	1.0%	1.2%	1.1%	1.8%	3.4%	2.0%	1.0%	1.7%
Registry	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.1%
Certified	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Insurance	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
COD	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Money Ord	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Stamp Env	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sp Hndlng	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PO Box	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Special Svs	0.0%	0.2%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Estimated Distribution Key Shares by Subclass and Cost Pool
Uses Broadened Mixed-Mail Distribution Method from Response to MPA/USPS-T16-17(b)

Subclass	MODS 1OpPref	MODS 1Platform	MODS 1Pouching	MODS 1SackS_h	MODS 1scan	MODS 1EEqmt	MODS 1Support	MODS BusReply
1st L&P	43.0%	39.4%	43.4%	35.6%	39.6%	37.7%	46.2%	28.0%
1PreL	10.1%	9.4%	10.4%	9.1%	10.6%	9.3%	10.4%	3.5%
1Cds	1.3%	1.3%	1.3%	1.2%	1.3%	1.5%	1.7%	1.0%
1PreC	0.3%	0.3%	0.3%	0.2%	0.2%	0.3%	0.3%	0.0%
Priority	7.7%	9.8%	7.9%	9.7%	15.2%	5.4%	5.9%	3.6%
Express	0.8%	1.2%	1.0%	1.2%	3.6%	1.2%	0.9%	0.0%
Mailgrams	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2IC	0.1%	0.1%	0.1%	0.2%	0.1%	0.1%	0.1%	0.0%
2Reg	7.5%	5.9%	5.8%	8.7%	4.1%	5.6%	4.4%	0.2%
2NP	1.0%	1.0%	0.8%	1.3%	0.6%	1.8%	0.7%	0.0%
2CL	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
3SP	0.8%	0.9%	0.8%	0.8%	0.6%	0.9%	0.7%	1.5%
3BRCRT	2.6%	2.9%	2.4%	3.9%	2.1%	3.1%	2.2%	0.1%
3BRO	15.7%	16.2%	16.3%	16.9%	13.4%	14.7%	16.4%	1.1%
3NPCRT	0.4%	0.4%	0.3%	0.5%	0.3%	0.5%	0.4%	0.3%
3NPO	3.4%	3.5%	3.5%	3.6%	3.1%	3.3%	3.8%	0.1%
4ZPP	0.9%	1.9%	0.9%	2.0%	0.8%	0.8%	0.7%	1.9%
4BPM	0.6%	0.8%	0.5%	0.9%	0.4%	0.5%	0.4%	0.1%
4SPC	0.3%	0.5%	0.3%	0.4%	0.4%	8.7%	0.3%	1.7%
4LIB	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
USPS	0.9%	1.0%	0.8%	0.8%	0.9%	1.0%	0.9%	8.3%
Free	0.2%	0.1%	0.2%	0.4%	0.1%	0.1%	0.1%	0.0%
Intl	2.2%	2.7%	2.6%	2.3%	2.4%	3.1%	2.8%	0.3%
Registry	0.1%	0.3%	0.1%	0.1%	0.1%	0.2%	0.4%	0.0%
Certified	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Insurance	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
COD	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Money Ord	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Stamp Env	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sp Hndlng	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PO Box	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Special Svs	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.3%	48.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Estimated Distribution Key Shares by Subclass and Cost Pool
Uses Broadened Mixed-Mail Distribution Method from Response to MPA/USPS-T16-17(b)

Subclass	MODS Express	MODS Mailgram	MODS Misc	MODS Registry	MODS Rewrap	MODS Intl	MODS LD41	MODS LD42
1st L&P	6.5%	0.0%	46.2%	9.3%	54.0%	4.7%	43.8%	49.8%
1PreL	0.2%	0.0%	10.4%	0.9%	6.1%	1.8%	33.2%	9.7%
1Cds	0.2%	0.0%	1.7%	0.8%	4.5%	0.6%	0.9%	3.1%
1PreC	0.2%	0.0%	0.3%	0.0%	0.0%	0.2%	0.3%	0.0%
Priority	1.5%	0.0%	5.9%	0.9%	11.2%	2.5%	0.5%	2.6%
Express	72.9%	0.0%	0.9%	2.5%	0.0%	2.4%	0.0%	0.1%
Mailgrams	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2IC	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
2Reg	0.4%	0.0%	4.4%	0.2%	0.9%	0.3%	0.1%	3.8%
2NP	0.1%	0.0%	0.7%	0.0%	0.0%	0.0%	0.7%	1.5%
2CL	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
3SP	0.1%	0.0%	0.7%	1.2%	0.9%	0.0%	0.0%	0.1%
3BRCRT	0.2%	0.0%	2.2%	0.0%	0.1%	0.1%	4.2%	3.0%
3BRO	2.0%	100.0%	16.4%	0.1%	10.2%	1.2%	13.1%	22.1%
3NPCRT	0.0%	0.0%	0.4%	0.0%	0.0%	0.3%	1.0%	1.0%
3NPO	0.3%	0.0%	3.8%	0.1%	1.0%	0.4%	1.7%	0.4%
4ZPP	0.1%	0.0%	0.7%	1.3%	4.2%	2.2%	0.1%	0.0%
4BPM	0.0%	0.0%	0.4%	0.0%	0.0%	0.2%	0.0%	0.0%
4SPC	0.0%	0.0%	0.3%	0.2%	1.8%	0.0%	0.0%	0.0%
4LIB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
USPS	5.7%	0.0%	0.9%	15.1%	1.2%	0.6%	0.3%	2.4%
Free	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Intl	9.5%	0.0%	2.8%	16.9%	3.7%	81.5%	0.2%	0.2%
Registry	0.1%	0.0%	0.4%	50.4%	0.0%	1.0%	0.0%	0.0%
Certified	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Insurance	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
COD	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Money Ord	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Stamp Env	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sp Hndlng	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PO Box	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Special Svs	0.2%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Estimated Distribution Key Shares by Subclass and Cost Pool
Uses Broadened Mixed-Mail Distribution Method from Response to MPA/USPS-T16-17(b)

Subclass	MODS LD43	MODS LD44	MODS LD48_Adm	MODS LD48_Exp	MODS LD48_Oth	MODS LD48_SpSv	MODS LD49	MODS LD79
1st L&P	36.3%	53.5%	42.7%	28.3%	42.7%	34.1%	38.1%	15.1%
1PreL	9.9%	17.3%	11.6%	0.0%	11.6%	4.3%	23.8%	14.3%
1Cds	1.2%	0.8%	2.0%	0.0%	2.0%	1.5%	2.5%	1.6%
1PreC	0.2%	0.1%	0.3%	0.0%	0.3%	0.0%	0.8%	0.0%
Priority	9.4%	4.6%	5.8%	6.6%	5.8%	3.6%	1.0%	1.1%
Express	0.6%	0.7%	1.5%	51.1%	1.5%	8.9%	0.0%	0.1%
Mailgrams	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2IC	0.2%	0.1%	0.2%	0.0%	0.2%	0.4%	0.2%	0.4%
2Reg	5.8%	3.8%	4.4%	0.0%	4.4%	1.0%	8.7%	1.4%
2NP	0.9%	0.5%	1.0%	0.0%	1.0%	0.0%	3.0%	1.1%
2CL	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
3SP	0.6%	0.6%	0.9%	0.0%	0.9%	1.0%	2.6%	0.1%
3BRCRT	5.5%	1.3%	2.8%	0.0%	2.8%	2.1%	0.6%	4.9%
3BRO	19.0%	11.8%	11.0%	0.0%	11.0%	4.4%	6.7%	29.8%
3NPCRT	0.5%	0.1%	0.3%	0.0%	0.3%	0.0%	0.1%	1.9%
3NPO	3.1%	2.1%	2.0%	0.0%	2.0%	1.0%	1.6%	20.1%
4ZPP	2.5%	0.6%	1.3%	0.0%	1.3%	0.7%	0.1%	1.0%
4BPM	1.4%	0.4%	0.8%	0.0%	0.8%	1.2%	0.6%	0.4%
4SPC	0.8%	0.1%	0.4%	0.0%	0.4%	0.0%	0.2%	0.0%
4LIB	0.2%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%
USPS	0.8%	0.8%	2.1%	14.0%	2.1%	3.2%	5.4%	6.5%
Free	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%
Intl	0.8%	0.6%	1.1%	0.0%	1.1%	6.2%	0.4%	0.1%
Registry	0.0%	0.0%	0.4%	0.0%	0.4%	3.6%	0.0%	0.0%
Certified	0.0%	0.0%	2.1%	0.0%	2.1%	19.0%	0.0%	0.0%
Insurance	0.0%	0.0%	0.5%	0.0%	0.5%	0.4%	0.0%	0.0%
COD	0.0%	0.0%	0.1%	0.0%	0.1%	0.2%	0.0%	0.0%
Money Ord	0.0%	0.0%	2.0%	0.0%	2.0%	0.0%	0.0%	0.0%
Stamp Env	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%
Sp Hndlng	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PO Box	0.0%	0.0%	1.6%	0.0%	1.6%	0.0%	0.0%	0.0%
Other Special Svs	0.1%	0.0%	1.0%	0.0%	1.0%	3.0%	3.6%	0.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Estimated Distribution Key Shares by Subclass and Cost Pool
Uses Broadened Mixed-Mail Distribution Method from Response to MPA/USPS-T16-17(b)

Attachment 3
Response to MPA/USPS-T16-17
Page 6 of 7

Subclass	Non-MODS MANL	Non-MODS MANF	Non-MODS MANP	Non-MODS AUTO/MEC	Non-MODS REGISTRY	Non-MODS EXPRESS	Non-MODS ALLIED
1st L&P	57.0%	30.0%	10.4%	49.0%	26.0%	0.0%	39.2%
1PreL	15.6%	2.9%	0.8%	25.0%	9.9%	0.0%	10.6%
1Cds	3.0%	0.0%	0.0%	1.4%	0.0%	0.0%	0.9%
1PreC	1.0%	0.0%	0.0%	1.0%	0.0%	0.0%	0.2%
Priority	0.3%	4.5%	38.0%	0.2%	3.5%	0.0%	5.9%
Express	0.0%	0.1%	0.1%	0.0%	3.0%	95.0%	0.9%
Mailgrams	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2IC	0.1%	0.6%	0.0%	0.0%	0.0%	0.0%	0.2%
2Reg	0.8%	14.6%	1.3%	0.5%	2.6%	0.0%	6.3%
2NP	0.1%	2.1%	0.1%	0.1%	0.0%	0.0%	1.2%
2CL	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.1%
3SP	0.3%	0.9%	1.3%	0.5%	0.0%	0.0%	0.7%
3BRCRT	1.9%	4.2%	0.2%	3.1%	1.9%	1.3%	5.8%
3BRO	13.6%	33.9%	16.4%	14.9%	2.0%	0.0%	18.5%
3NPCRT	0.3%	0.5%	0.0%	0.5%	0.0%	0.0%	0.5%
3NPO	4.6%	3.8%	0.9%	3.2%	1.2%	0.0%	3.1%
4ZPP	0.1%	0.1%	15.2%	0.1%	0.6%	0.0%	2.6%
4BPM	0.0%	0.6%	6.4%	0.0%	0.1%	0.0%	1.1%
4SPC	0.0%	0.2%	4.0%	0.0%	0.0%	0.0%	0.4%
4LIB	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	0.1%
USPS	0.6%	0.4%	2.7%	0.2%	8.7%	3.8%	0.9%
Free	0.1%	0.0%	0.7%	0.1%	0.0%	0.0%	0.2%
Intl	0.5%	0.2%	0.7%	0.2%	9.3%	0.0%	0.4%
Registry	0.0%	0.0%	0.0%	0.0%	31.0%	0.0%	0.0%
Certified	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Insurance	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
COD	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Money Ord	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Stamp Env	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sp Hndlng	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PO Box	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Special Svs	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Estimated Distribution Key Shares by Subclass and Cost Pool
Uses Broadened Mixed-Mail Distribution Method from Response to MPA/USPS-T16-17(b)

Subclass	Non-MODS MISC	BMC SSM	BMC OTHR	BMC PSM	BMC SPB	BMC NMO	BMC Platform
1st L&P	40.0%	0.3%	0.4%	0.5%	0.9%	0.5%	0.4%
1PreL	12.4%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%
1Cds	1.3%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
1PreC	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Priority	3.8%	0.3%	0.6%	1.1%	0.6%	1.9%	0.7%
Express	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Mailgrams	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2IC	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2Reg	4.0%	9.9%	4.4%	0.1%	4.6%	0.1%	4.0%
2NP	0.5%	2.7%	1.0%	0.2%	0.2%	1.1%	1.2%
2CL	0.0%	0.9%	0.1%	0.0%	0.1%	0.0%	0.1%
3SP	1.4%	1.6%	1.9%	2.0%	3.5%	2.5%	1.8%
3BRCRT	2.2%	6.4%	2.6%	0.5%	2.5%	1.0%	2.6%
3BRO	12.8%	36.8%	38.3%	35.7%	54.1%	21.7%	35.4%
3NPCRT	0.2%	1.1%	0.6%	0.6%	0.6%	0.0%	0.7%
3NPO	2.1%	6.5%	5.3%	2.0%	6.8%	1.7%	4.5%
4ZPP	1.3%	15.1%	19.8%	16.6%	9.1%	41.3%	23.0%
4BPM	0.6%	6.5%	8.8%	17.8%	3.8%	9.1%	9.9%
4SPC	0.3%	4.3%	6.2%	14.4%	2.0%	5.6%	7.0%
4LIB	0.0%	0.0%	0.6%	1.6%	0.1%	2.6%	0.7%
USPS	1.5%	0.3%	3.0%	0.7%	3.0%	5.6%	2.2%
Free	0.1%	0.8%	0.3%	0.6%	0.4%	0.0%	0.3%
Intl	0.4%	6.7%	5.6%	5.7%	7.8%	5.2%	5.3%
Registry	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Certified	8.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Insurance	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
COD	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Money Ord	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Stamp Env	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sp Hndlng	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PO Box	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Special Svs	4.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Response of United States Postal Service Witness Degen
to Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T16-1. On page 5, lines 1-6, you indicate that OCA witness Smith and UPS witness Neels, in Docket No. R97-1, ignored features of the Postal Service network and operations that are vital to distinguishing the cost effects of volume changes from the effects of non-volume factors.

(a) Please specifically delineate which variables are vital to the analysis.

(b) For each variable identified, please indicate whether such a variable was used by Dr. Bradley in his analysis in Docket No. R97-1 on the subject of mail processing variability.

OCA/USPS-T-16-1 Response.

My exact statement referenced in the question is that "My analysis of the structure of mail processing operations also reveals that the pooled regression approach advocated by OCA witness Smith and the cross-sectional analysis favored by UPS witness Neels, in Docket R97-1, potentially ignores [sic] features of the Postal Service network and operations that are vital to distinguishing the cost effects of volume changes from the effects of non-volume factors."

(a) My testimony is that a regression analysis that does not control for site-specific, non-volume, cost-causing factors does not accurately reflect the facts that mail processing plants are located to serve delivery points; that mail processing plants have unique facility, work force, and that management characteristics tend not to change over the "rate cycle" and, to the extent they do, are primarily driven by non-volume factors; and that additional volumes will be handled, to some extent, in all or nearly all mail processing plants. The referenced statement indicates that variables that control for site-specific, non-volume, cost factors are "vital." My testimony does not address the details of the selection of variables; however, I believe they can be

modeled with site-specific dummies (as in the fixed-effects model) and/or specific measures of factors such as facility, network, work force, and management characteristics. It would be nearly impossible to specify and measure all such characteristics, so site specific dummy variables should always be included to avoid bias in the estimated variables.

(b) As I indicated in my answer to (a) above, I believe that site-specific dummy variables are vital. My understanding is that Dr. Bradley's intent in including the site-specific dummy variables was to capture the effects of non-volume cost causing factors. Additionally, the "manual ratio" variables Dr. Bradley specified can be interpreted as indicators of the sites' sorting technology as well as measures of the "quality" of the mailstreams. While Dr. Bozzo's models are to be preferred because they include additional measures of important non-volume characteristics, the general similarity of the results indicates that Dr. Bradley's models, by and large, successfully controlled for the site-specific, non-volume, cost-causing factors.

Response of United States Postal Service Witness Degen
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T16-2. Please refer to your testimony at page 10, lines 11-13. You indicate that, "Econometric models are well-suited to measuring expected changes in cost as volume changes, but are ill-suited for predicting changes in the underlying technology." Please define what type(s) of changes in the underlying technology are being referenced, in terms of specific capital equipment, personnel, operating personnel, or other resources. Also address these two examples,

(a) Would a decision to purchase a new type of OCR be considered technological change if the new OCR were more efficient and/or had improved capabilities? Please explain.

(b) Would a decision to purchase a new OCR of an existing type of OCR be considered a change in technology? Please explain.

OCA/USPS-T-16-2 Response.

The quoted statement was made in the context of a discussion of the respective roles of the Base Year and rollforward models in capturing the effects of cost reducing programs implemented between the base year and test year. See USPS-T-16 at page 9, line 18, to page 10, line 13. The statement does not refer to specific programs, but rather the general issue of "evaluat[ing] the forecast assumptions and expected changes in the operating plan [in the test year cost model]" (USPS-T-16 at page 10, lines 10-11). Each of the changes listed (capital equipment, personnel, operating personnel, or other resources) would have to be evaluated in terms of whether it would be expected to cause a change in the fundamental volume-variability of a cost pool, or alter the mix of cost pools. With respect to the quoted statement, it would be a gross misinterpretation to read my statement as a suggestion that econometric models are inessential to measuring test year costs. I believe that econometric models are well-suited to predicting cost changes when the underlying technology is stable, or when they are

subject to changes that can be extrapolated from historical data. Econometric models also play a critical role in accurately estimating cost savings from new technology, since they are needed to estimate the level of costs under the existing technology as the "base" for the cost savings. Additionally, some fundamental changes in the Postal Service's operating plan should probably be reflected in the CRA by developing new cost pools, rather than modifying the definition of existing cost pools. This depends on whether introduction of a new technology would affect the degree of volume-variablility for a cost pool.

(a) Introduction of a new type of equipment with fundamentally different capabilities would, I believe, widely be viewed as a type of technological change. Whether the effect of the technological change can (or should) be captured in an existing cost pool's econometric model is an empirical issue.

(b) The change that is described amounts to adding OCR capacity and, I believe, would not be considered to constitute a technological change with respect to the OCR cost pool. Adding capacity in a given operation can change the technology (cost pool) mix in the plant, to the extent the added equipment were intended to relieve binding capacity constraints. In terms of cost modeling, given a forecast of the additional (or percentage change in) volumes to be processed in the OCR cost pool, there would be no conceptual problems in predicting the additional (or percentage change in) OCR costs from the econometric models. Correspondingly, this type of adjustment is usually made as program savings in the roll forward process, not as alterations of the volume-variability of the OCR pool.

Response of United States Postal Service Witness Degen
To Interrogatories of the Office of the Consumer Advocate

OCA/USPS-T16-3. Please refer to pages 18 through 24 of your testimony, wherein you provide a discussion of network and location-related factors that affect costs, but do not change with volume. Is it correct that the bulk of this material was not presented in Docket No. R97-1? Please identify any of the referenced material that was previously presented in the same level of detail in Docket No. R97-1.

OCA/USPS-T-16-3 Response.

It is correct that the material provided in pages 18-24 of testimony did not appear in the R97-1 testimony at the same level of detail. However, the importance of location-related non-volume factors was discussed briefly in Dr. Bradley's mail processing testimony:

> "The fixed effects model allows for site-specific effects that would cause two facilities to have different levels of hours for the same amount of piece handlings. Reasons for these differences include things like the age of the facility, the quality of the local work force, and the quality of the mail that the facility must process. (Docket No. R97-1, USPS-T-14, pp. 39-40; footnote omitted.)

The need to discuss the fixity of the Postal Service's delivery network relative to volume changes did not become evident until UPS witness Neels testified that the Postal Service would be expected to handle additional volumes by "replicating" its most efficient facility. (Docket No. R97-1, Tr. 28/15791). Dr. Neels's erroneous testimony on the Postal Service's response to volume changes was addressed in my rebuttal testimony (Docket No. R97-1, USPS-RT-6, pp. 47-48 Tr. 36/19365-6).

Response of United States Postal Service Witness Degen
To Interrogatory of Time Warner, Inc.
(Redirected from Witness Van-Ty-Smith, USPS-T-17)

TW/USPS-T17-19 The following questions concern your attribution and distribution of costs in the two Function 1 and two Function 4 "support" pools.

a. Please confirm that the direct tallies, identifying specific subclasses and special services, in cost pools 1Misc, 1Support, LD48_Adm and LD48Oth represent $89.713 million in "tally dollars" or $83.192 million in accrued BY98 costs. If not confirmed, please supply corrected figures.

b. Confirm that your method distributes the volume variable portion of these direct costs in a manner that ignores all subclass and handling specific information recorded by IOCS clerks for these tallies.

c. Granted that many other (not handling) tallies in these cost pools indicate general and administrative functions for which a broad distribution over all mail processing costs may be justified, what exactly is your justification for ignoring the specific information on the direct tallies instead of simply distributing the costs of those tallies to the subclasses and services indicated?

d. List all reasons you have, if any, to believe that ignoring the subclass and service specific information on the direct tallies referred to above leads to a more accurate distribution than you would get by simply using the ignored information.

TW/USPS–T17–19 Response.

a. Confirmed.

b. Confirmed.

c. As I explain in my testimony, "The direct tally data represent actual handlings of mail by the sampled employees, but we believe these handlings are incidental to the support activities that constitute the bulk of the tallies in these cost pools, and, therefore, do not necessarily

Response of United States Postal Service Witness Degen
To Interrogatory of Time Warner, Inc.
(Redirected from Witness Van-Ty-Smith, USPS-T-17)

represent the true patterns of cost causation." Please see USPS-T-16 at page 57, lines 15-18. The statement of the interrogatory seems to imply that the causal factors behind the handling portion of these cost pools is fundamentally different from the not-handling portion. I believe this is incorrect. All of the MODS operations (and associated costs) mapped to the mail processing support cost pools (see USPS LR-I-106 at I-25 and I-27) constitute what you call "general and administrative functions." Accordingly, one should not expect the relatively small number of handling tallies observed in those operations to be representative of the drivers of costs in the supported activities.

d. See the response to part (c) of this interrogatory.

Response of United States Postal Service Witness Degen
To Interrogatories of United Parcel Service

UPS/USPS–T16–1. Identify all instances in which you have relied on or used in your testimony in any way any FY 1999 cost, revenue, volume, or other data, and state in each such instance why you used FY 1999 data instead of data for BY 1998.

UPS/USPS-T-16-1 Response.

There are no instances where I have used or relied on any FY 1999 cost, revenue, volume, or other data in my testimony.

Response of United States Postal Service Witness Degen
To Interrogatory of United Parcel Service

UPS/USPS–T16–2. Refer to Table 8 at page 66 of your testimony. Provide the FY95 IOCS Platform distribution key for items in containers for all individual mail subclasses.

UPS/USPS–T16–2 Response.

The requested data are provided in Attachment 1 to this response.

Attachment 1
Response to UPS/USPS-T16-2
Page 1 of 1

Table 8
FY95 IOCS
Subclass Shares

Subclass	
Letters and Parcels	37.60%
Presort Letters and Parcels	11.74%
Postal Cards	0.00%
Private Mailing Cards	0.86%
Presort Cards	0.39%
Total First Class	50.59%
Priority	2.17%
Express	0.46%
Within County	0.27%
Outside County - Regular	9.43%
Outside County - Non Profit	1.76%
Outside County - Classroom	0.07%
Total Second Class	11.53%
Third Single Piece Rate	0.87%
Bulk - Regular Carrier Route	5.88%
Bulk - Regular Other	20.45%
Subtotal Third Bulk Regular	26.33%
Bulk - Nonprofit Carrier Route	0.59%
Bulk - Nonprofit Other	4.91%
Subtotal Third Bulk Nonprofit	5.50%
Total Third Class	32.71%
Parcels - Zone Rate	0.50%
Bound Printed Matter	0.39%
Special Rate	0.21%
Library Rate	0.00%
Total Fourth Class	1.10%
USPS	0.29%
Free for Blind/Handicapped	0.10%
International	1.05%
Total	100.00%

Response of United States Postal Service Witness Degen
To Interrogatories of United Parcel Service

UPS/USPS-T16-5. Refer to page 36 of your testimony, where you state that "most primary parcel sortation occurs in BMCs." Refer also to page 44 of your testimony, where you state that "[o]utgoing parcels are sent to the BMC without any sortation." Refer also to page 45 of your testimony, where in your discussion of Manual Flat Sortation and the Small Parcel Bundle Sorter ("SPBS"), you state that "The SPBS sorts parcels and bundles when the keyers enter a numeric code--the first few digits of the ZIP Code for an outgoing scheme . . ." Explain this apparent contradiction.

UPS/USPS-T16-5 Response.

There is no contradiction. Insofar as the first two quoted statements refer to BMC operations, the term "parcel" should be understood to refer primarily to Standard A and Standard B parcels. The statement quoted from p. 45 of my testimony refers to bundles and small parcels sorted in (non-BMC) plants on the Small Parcel and Bundle Sorter (SPBS). Thus, my use of the word "parcels" in that context chiefly refers to Priority Mail and First-Class Mail parcels that are not normally processed in the BMC network.

That said, there are always exceptions. The standard operational plan may not always be efficient for all individual pieces, and the Postal Service expects its mail processing personnel to act appropriately in instances where this is true. For instance, local parcels that are accepted over the counter at a plant, or local parcels received at a remote plant where the associated BMC is very far away, may be held out for local sortation and dispatch.

Response of United States Postal Service Witness Degen
To Interrogatories of United Parcel Service

UPS/USPS-T16-6. Refer to pages 32 through 34 of your testimony, where you indicate that the standard operating plan for the piece sortation of letters begins with cancellation and culling of automation incompatible letters from the mailstream. Automation incompatible letters are then either sorted manually or sorted on a letter sorting machine ("LSM"). Automation compatible pieces are sent either directly to the bar code sorter ("BCS") or are diverted into various processing streams that prepare them for eventual sortation by the BCS.

(a) Confirm that under the standard operating plan, all the actual sortation of letters is performed either manually, by an LSM, or by a BCS. If not confirmed, identify all of the other operations in which letters are sorted, and describe the types and approximate percentages of mail sorted in these other ways.

(b) Specify the number of times under the standard operating plan that a specific letter at a specific processing plant would be processed either manually, through an LSM, or through a BCS before leaving the plant.

(c) If the answer to (b) varies either from letter to letter or from plant to plant, indicate the minimum number of times a letter would be processed in one of these three operations under the standard operating plan, and the maximum number of times it would be processed.

(d) If the answer to (b) above varies either from letter to letter or from plant to plant, describe the circumstances and conditions that determine how many times a letter would be processed.

UPS/USPS-T16-6 Response.

(a) Not confirmed. The phrase "actual sortation" is ambiguous. For purposes of my response I will assume it means piece distribution as defined in section 412.11 of the M-32 MODS handbook (see Docket No. R97-1, USPS LR-H-147), which does not include sortation by size, weight, class, or facing. I also exclude operations where items or containers of letter mail are sorted, even though individual pieces may be handled therein due to spillage. According to the Standard Operating Plan, letter mail is piece

distributed in manual, LSM, OCR, and BCS operations. (The interrogatory, as stated, omitted OCRs.)

(b) The number of distribution handlings per piece in manual, LSM, OCR, and BCS operations would vary by: the level of sortation at which the mail was presented to the Postal Service, the number of separations for which the operation was designed, the quality of the address, and the destination (specific delivery address) of the piece. The level of sortation ranges from collection mail, the least highly prepared, to carrier route trays sorted to non-DPS zones, the highest level of preparation. The number of separations varies by equipment type (manual case types, OCR and BCS models) and by local schemes. Unreadable bar codes or addresses will tend to affect the mix of operations where the handlings occur, possibly in addition to the total number of handlings. Since readability is sometimes a function of the interaction of the machine and characteristics of the mailpiece, it is very unpredictable, and subject also to local practices and time-of-day constraints as to when (or whether) unreadable pieces would be rerun. The address itself can determine whether a piece would be finalized to a firm hold-out on a primary scheme (e.g., a utility payment) or require multiple handlings in a secondary scheme because it was addressed to a low volume zone in a 3-digit area with more zones than the number of separations.

Response of United States Postal Service Witness Degen
To Interrogatories of United Parcel Service

(c) Non-carrier route letters should receive at least one distribution handling in at least one of the manual, LSM, OCR, or BCS operations. For all the reasons specified in my response to (b) above, I cannot say what a maximum number of distribution handlings would be for an individual piece.

(d) See response to (b) and (c) above.

Response of United States Postal Service Witness Degen
to Interrogatories of United Parcel Service

UPS/USPS–T16–7. Refer to page 3-3 of Library Reference USPS–LR–I–1.

a. Which MODS 1&2 cost pools include the costs for platform operations (e.g., loading and unloading trucks, crossdocking pallets and other containers of mail) at Associate Offices, Stations and Branches?

b. Which MODS 1&2 cost pools include the costs for cancellation and mail preparation at Associate Offices, Stations and Branches?

c. Which MODS 1&2 cost pools include the costs of a typical outgoing parcel entered at the window of an Associate Office, Station or Branch incurred prior to its leaving the Associate Office, Station or Branch.

d. Which MODS 1&2 cost pools include the costs of a typical outgoing parcel entered at the platform of an Associate Office, Station or Branch incurred prior to its leaving the Associate Office, Station or Branch.

e. Which MODS 1&2 cost pools include the costs of a typical incoming parcel incurred after the parcel reaches the platform of an Associate Office, Station or Branch.

UPS/USPS–T16–7 Response.

a. It is my understanding that the cost of platform operations at associate offices (AOs), stations, and branches would largely appear in the LDC 43 cost pool. See also witness Van-Ty-Smith's response to TW/USPS-T17-4, which indicates that approximately 50 percent of allied labor costs per the non-MODS definition (which includes, but is not limited to, platform operations) in LDCs 41-44, 48, and 49 appear in the LDC 43 cost pool.

b. It is my understanding that the cost of cancellation and mail preparation operations at associate offices (AOs), stations, and branches would largely appear in the LDC 43 cost pool. See also

witness Van-Ty-Smith's response to TW/USPS-T17-4, which indicates that approximately 50 percent of allied labor costs per the non-MODS definition (which includes, but is not limited to, cancellation and mail preparation operations) in LDCs 41-44, 48, and 49 appear in the LDC 43 cost pool.

c. The window service costs of a hypothetical "typical outgoing parcel" entered at the window of an AO, station, or branch would be captured in Cost Segment 3.2. It is my understanding that the mail processing cost of such a piece would largely be incurred in LDC 43. Additionally, related Function 4 mail processing and window service support costs would appear in the LDC 48 cost pools (LD48_ADM and LD48 OTH). Additionally, costs for some, not necessarily typical, parcel pieces may appear in other Function 4 cost pools.

d. It is my understanding that the mail processing cost of a hypothetical "typical outgoing parcel" entered at the platform of an AO, station, or branch would largely be incurred in LDC 43. Related Function 4 mail processing support costs would appear in the LDC 48 cost pools (LD48_ADM and LD48 OTH). Additionally, costs for some, not necessarily typical, parcel pieces may appear in other Function 4 cost pools.

Response of United States Postal Service Witness Degen
to Interrogatories of United Parcel Service

e. It is my understanding that the mail processing cost of a hypothetical "typical incoming parcel" incurred after the piece reaches the platform of an AO, station, or branch would largely be incurred in LDC 43 and/or LDC 44. Related Function 4 mail processing support costs would appear in the LDC 48 cost pools. Additionally, costs for some, not necessarily typical, parcel pieces may appear in other Function 4 cost pools.

Response of United States Postal Service Witness Degen
To Interrogatory of United Parcel Service

UPS/USPS-T16-8. Refer to your response to interrogatory UPS/USPS-T16-7.

a. With respect to your reference to witness Van-Ty-Smith's response to TW/USPS-T17-4, provide all SAS programs used to create the tables referenced in response to TW/USPS-T17-4 in hardcopy and electronic format.

b. Describe in detail how the LDC cost pools were separated into the non-MODS cost pool classifications.

c. Confirm that the costs discussed in witness Van-Ty-Smith's response to TW/USPS-T17-4 that you referenced in your response to UPS/USPS-T16-7 were for all subclasses of mail and not just for parcel post.

d. Confirm that the costs discussed in witness Van-Ty-Smith's response to TW/USPS-T17-4 that you referenced in your response to UPS/USPS-T16-7 were only for cost segment 3.1.

e. Describe the activities that would be considered "outgoing" for the LDC 43 portion of each of the non-MODS cost pools (Allied, Auto Distr, Express, etc.) separately for each non-MODS cost pool.

f. Describe the activities that would be considered "incoming" for the LDC 43 portion of each of the non-MODS cost pools (Allied, Auto Distr, Express, etc.) separately for each non-MODS cost pool.

UPS/USPS–T16–8 Response.

a. Redirected to witness Van-Ty-Smith (USPS-T-17).

b. Redirected to witness Van-Ty-Smith (USPS-T-17).

c. Confirmed. Please note that parts (a) and (b) of UPS/USPS-T16-7, in response to which I reference witness Van-Ty-Smith's response to TW/USPS-T17-4, inquires about MODS 1&2 (mail processing) cost pools, without limitation to the Standard (B) Parcel Post subclass.

d. Confirmed. Please note that all subparts of UPS/USPS-T16-7 inquired about "MODS 1&2 cost pools." I understand "MODS 1&2 cost pools" to mean mail

Response of United States Postal Service Witness Degen
To Interrogatory of United Parcel Service

processing cost pools, which are included in Cost Segment 3.1 in the Postal Service's BY 1998 CRA.

e. I assume that the interrogatory intends to inquire about non-MODS cost pools (as written) as opposed to portions of the MODS LDC 43 cost pool associated with each non-MODS operation groupings. I also assume that the interrogatory intends to refer to non-MODS mail processing cost pools. In this context, please note that data (similar to the MODS operation numbers) do not exist to crosswalk the non-MODS cost pools to LDC. However, based on LDC definitions and witness Van-Ty-Smith's crosswalk of the MODS Function 4 cost pools to the non-MODS operation groupings, I expect costs in the non-MODS AUTO/MEC, EXPRESS, REGISTRY, and MISC cost pools would be substantially incurred under LDCs other than LDC 43. In the following descriptions—as well as those under part (f)—I interpret the terms "outgoing" and "incoming" per the rules used to determine "Basic Function" in IOCS; see Handbook F-45 (USPS LR-I-14) at pages 17-5 to 17-7. Finally, the following descriptions should not be interpreted as exhaustive.

AUTO/MEC. This cost pool is primarily associated with LDCs 41 and 42. Note that it is my understanding that automation equipment in non-MODS offices is primarily used for incoming tertiary (DPS) letter sorting and, usually to a lesser extent, incoming secondary sortation. It is also my understanding that most non-MODS offices perform relatively little outgoing sortation.

Response of United States Postal Service Witness Degen
To Interrogatory of United Parcel Service

MANL. Manual piece sorting of letters destinating outside the area served by the office (or its serving PDC/PDF); this may include sortation of local mail commingled with non-local mail. However, note that it is my understanding that most non-MODS offices perform relatively little outgoing sortation.

MANF. Manual piece sorting of flats destinating outside the area served by the office (or its serving PDC/PDF); this may include sortation of local mail commingled with non-local mail. However, note that it is my understanding that most non-MODS offices perform relatively little outgoing sortation.

MANP. Manual piece sorting of parcels destinating outside the area served by the office (or its serving PDC/PDF); this may include sortation of local mail commingled with non-local mail. However, note that it is my understanding that most non-MODS offices perform relatively little outgoing sortation.

ALLIED. Handling of mail destinating outside the area served by the office (or its serving PDC/PDF) other than piece sorting; this may include handling of local mail prior to incoming operations. This may include platform-type activities such as moving mail from other operations to outbound transportation as well as cancellation and mail preparation activities.

Response of United States Postal Service Witness Degen
To Interrogatory of United Parcel Service

EXPRESS. This cost pool is primarily associated with LDC 48. However, some incidental handling of outgoing Express Mail by employees working in LDC 43 may be classified under this cost pool in IOCS.

REGISTRY. This cost pool is primarily associated with LDC 48. However, some incidental handling of outgoing Registered Mail by employees working in LDC 43 may be classified under this cost pool in IOCS.

MISC. This cost pool is primarily associated with LDC 48. However, it is my understanding that this cost pool also may encompass miscellaneous and support activities pertaining to LDC 43 outgoing sortation and allied activities that are not classified under an IOCS activity associated with the sorting or allied cost pools discussed above.

Also please see witness Bozzo's response to MPA/USPS-T-15-4.

f. Please note that the caveats in the response to part (e) also apply to the descriptions provided below.

AUTO/MEC. This cost pool is primarily associated with LDCs 41 and 42. The primary activities are automated incoming tertiary (DPS) and incoming secondary sortation of letter mail, mainly on CSBCS equipment. It is my understanding that a few non-MODS offices

Response of United States Postal Service Witness Degen
To Interrogatory of United Parcel Service

have FSMs and thus would also perform incoming secondary flat sortation.

MANL. Manual piece sorting of letters destinating inside the area served by the office to carrier route, box section or P.O. Box.

MANF. Manual piece sorting of flats destinating inside the area served by the office to carrier route, box section or P.O. Box.

MANP. Manual piece sorting of parcels destinating inside the area served by the office to carrier route, box section or P.O. Box.

ALLIED. Handling of mail destinating inside the area served by the office other than piece sortation. This may include platform and opening activities.

EXPRESS. This cost pool is primarily associated with LDC 48. However, some incidental handling of incoming Express Mail by employees working in LDC 43 may be classified under this cost pool in IOCS.

REGISTRY. This cost pool is primarily associated with LDC 48. However, some incidental handling of incoming Registered Mail by employees working in LDC 43 may be classified under this cost pool in IOCS.

MISC. This cost pool is primarily associated with LDC 48. However, it is my understanding that this cost pool also may encompass

Response of United States Postal Service Witness Degen
To Interrogatory of United Parcel Service

miscellaneous and support activities pertaining to LDC 43 incoming piece sortation and allied labor activities that are not classified under an IOCS activity associated with the sorting or allied cost pools discussed above.

Also please see witness Bozzo's response to MPA/USPS-T-15-4.

CHAIRMAN GLEIMAN: Is there any additional designated written cross? Ms. Noble.

MS. NOBLE: Yes. Ann Noble for MPA. MPA previously designated Witness Degen's answer to MPA/USPS-T-16-17 in its lists of designations, however, the actual answer was not filed until last Friday at 5:00 p.m., so we entering at this time the answer to that question that has been previously designated.

CHAIRMAN GLEIMAN: Mr. Koetting, Mr. Degen, do you have a sense of whether the answer perhaps found its way into the package in some mysterious way?

MR. KOETTING: I thought it was in there, but we should take a look.

CHAIRMAN GLEIMAN: Sometimes these things mysteriously happen. The little gnomes who stay late and get here early and make it all work.

Could you give me the number again?

MS. NOBLE: Yes, sir. MPA/USPS-T-16-17.

MR. KOETTING: Mr. Chairman, it does appear to be in the packet.

CHAIRMAN GLEIMAN: With the answer.

MR. KOETTING: Yes.

CHAIRMAN GLEIMAN: It found its way in.

MS. NOBLE: Good.

CHAIRMAN GLEIMAN: Your work was done for you, and

for us.

Anyone else?

[No response.]

CHAIRMAN GLEIMAN: If not, that brings us to cross-examination, oral cross-examination. There are two parties who have requested oral cross-examination, United Parcel Service and Time Warner, which has filed to preserve its right to conduct follow-up cross.

Is there anyone who wishes to cross?

[No response.]

CHAIRMAN GLEIMAN: If not, then, Mr. McKeever.

MR. McKEEVER: Mr. Chairman, we have no questions.

CHAIRMAN GLEIMAN: Does Time Warner have any follow-up to the no questions?

[No response.]

CHAIRMAN GLEIMAN: That being the case, there is no follow-up, of course, and I don't know whether there are questions from the bench or not.

[No response.]

CHAIRMAN GLEIMAN: There are no questions from the bench. And there is no redirect. There is no time for redirect. Sorry. But if you want to ask some questions of your witness to flesh out the record, we would be delighted.

[No response.]

CHAIRMAN GLEIMAN: That being the case, Mr. Degen,

that completes your testimony here today. We appreciate your appearance and your contributions to the record. We want to thank you, and you are excused.

THE WITNESS: Thank you.

[Witness excused.]

CHAIRMAN GLEIMAN: And we will move to the next witness. Ms. Duchek.

MS. DUCHEK: The Postal Service calls Eliane Van-Ty-Smith.

Whereupon,

ELAINE VAN-TY-SMITH,

a witness, having been called for examination, and, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MS. DUCHEK:

Q Ms. Van-Ty-Smith, I have handed you two copies of a document entitled Direct Testimony of Elaine Van-Ty-Smith on Behalf of United States Postal Service, designated as USPS-T-17.

Are you familiar with that document?

A Yes, I am.

Q Was it prepared by you or under your supervision?

A Yes.

Q Do you have any changes that you would like to

make today.

A I have one change on page 17. This is to be consistent with a response I gave to AAP/USPS-T-17-15, and the number 49, should be changed to 72.

Q And what line is that in?

A It's line 1.

Q And has that change been made on the two copies of the testimony that I gave you?

A Yes.

MS. DUCHEK: Mr. Chairman, I'm going to hand two copies of the Direct of Elaine Van-Ty-Smith on Behalf of the United States Postal Service, USPS-T-17, to the Reporter, and I ask that they be entered into evidence.

CHAIRMAN GLEIMAN: Is there any objection?

[No response.]

CHAIRMAN GLEIMAN: Hearing none, Witness Van-Ty-Smith's testimony will be entered into evidence but not transcribed into the record.

[Direct Testimony of Elaine Van-Ty-Smith was received into evidence.

CHAIRMAN GLEIMAN: Is the witness sponsoring any Category II Library References?

MS. DUCHEK: Yes, Mr. Chairman, she is, Library Reference I-106. Ms. Van-Ty-Smith sponsors that, and I ask

that it be entered into evidence.

CHAIRMAN GLEIMAN: So ordered, and it will not be transcribed into the record.

[Library Reference I-106 was received into evidence.]

CHAIRMAN GLEIMAN: Ms. Van-Ty-Smith, have you had an opportunity to examine the packet of Designated Written Cross Examination that was made available earlier today?

THE WITNESS: Yes, I did.

CHAIRMAN GLEIMAN: And if these questions were asked of you today, would your answers be the same as those you previously provided in writing?

THE WITNESS: Yes, they would.

CHAIRMAN GLEIMAN: That being the case, counsel, if you would please provide two copies to the Reporter, I'll direct that the material be entered into evidence and transcribed into the record.

[Designated Written Cross Examination of Elaine Van-Ty-Smith was received into evidence and transcribed into the record.]

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, DC 20268-0001

Postal Rate and Fee Changes, 2000 Docket No. R2000-1

DESIGNATION OF WRITTEN CROSS-EXAMINATION
OF UNITED STATES POSTAL SERVICE
WITNESS ELIANE VAN-TY-SMITH
(USPS-T-17)

Party	Interrogatories
Alliance of Nonprofit Mailers	ANM/USPS-T2-5, 7 redirected to T17
Association of American Publishers	AAP/USPS-T17-6, 8, 11, 14-15
Magazine Publishers of America	DMA/USPS-T17-1-5
Time Warner Inc.	AAP/USPS-T17-2-4, 6, 8, 11, 14-15, 17 TW/USPS-T17-1-4, 7-13, 14b, 16a, 17-18, 20-23, 26 UPS/USPS-T16-8a-b redirected to T17
United Parcel Service	AAP/USPS-T17-11, 14-15, 17 DMA/USPS-T17-3-5 TW/USPS-T17-2-4, 7, 11, 14b, 18, 20-23, 26 TW/USPS-T2-3c-d redirected to T17 UPS/USPS-T17-1 UPS/USPS-T16-8a-b redirected to T17

Respectfully submitted,

Margaret P. Crenshaw

Margaret P. Crenshaw
Secretary

INTERROGATORY RESPONSES OF
UNITED STATES POSTAL SERVICE
WITNESS ELIANE VAN-TY-SMITH (T-17)
DESIGNATED AS WRITTEN CROSS-EXAMINATION

Interrogatory:	Designating Parties:
AAP/USPS-T17-2	TW
AAP/USPS-T17-3	TW
AAP/USPS-T17-4	TW
AAP/USPS-T17-6	AAP, TW
AAP/USPS-T17-8	AAP, TW
AAP/USPS-T17-11	AAP, TW, UPS
AAP/USPS-T17-14	AAP, TW, UPS
AAP/USPS-T17-15	AAP, TW, UPS
AAP/USPS-T17-17	TW, UPS
ANM/USPS-T2-5 redirected to T17	ANM
ANM/USPS-T2-7 redirected to T17	ANM
DMA/USPS-T17-1	MPA
DMA/USPS-T17-2	MPA
DMA/USPS-T17-3	MPA, UPS
DMA/USPS-T17-4	MPA, UPS
DMA/USPS-T17-5	MPA, UPS
TW/USPS-T17-1	TW
TW/USPS-T17-2	TW, UPS
TW/USPS-T17-3	TW, UPS
TW/USPS-T17-4	TW, UPS
TW/USPS-T17-7	TW, UPS
TW/USPS-T17-8	TW
TW/USPS-T17-9	TW
TW/USPS-T17-10	TW
TW/USPS-T17-11	TW, UPS
TW/USPS-T17-12	TW
TW/USPS-T17-13	TW
TW/USPS-T17-14b	TW, UPS
TW/USPS-T17-16a	TW
TW/USPS-T17-17	TW
TW/USPS-T17-18	TW, UPS
TW/USPS-T17-20	TW, UPS
TW/USPS-T17-21	TW, UPS

TW/USPS-T17-22	TW, UPS
TW/USPS-T17-23	TW, UPS
TW/USPS-T17-26	TW, UPS
TW/USPS-T2-3c redirected to T17	UPS
TW/USPS-T2-3d redirected to T17	UPS
UPS/USPS-T17-1	UPS
UPS/USPS-T16-8a redirected to T17	TW, UPS
UPS/USPS-T16-8b redirected to T17	TW, UPS

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO AAP INTERROGATORIES

AAP/USPS-T17-2 On page 8 (lines 9-11) of your testimony, you state that "Table 3 in the attachment lists the subclass volume-variable costs (before clocking in/out and premium adjustments) and distribution factors (Col Pct) for all mail processing cost pools for the BMC, MODS 1& 2 and non-MODS facilities." With respect to each cost pool allocated to BPM in Table 3, please show separate clocking in/out and premium cost adjustments that are required in order to derive total mail processing costs for BPM in Base Year 1998.

RESPONSE TO AAP/USPS-T17-2

The BY98 mail processing clocking in/out subclass adjustments are relevant only to the BMC and Non-MODS facilities, and are done separately for each facility grouping. See footnote 3 of my testimony and witness Meehan's response to AAP/USPS-T11-4.

The subclass premium adjustments are done for all combined facilities. See Workpapers A-2, p. 1-4 of Witness Meehan (USPS-T-11).

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO AAP INTERROGATORIES

AAP/USPS-T17-3 On page 9 (lines 13-14) of your testimony, you state that "[t]he IOCS tallies are grouped into the BMCs, MODS and non-MODS facilities, based on finance numbers sampled in the IOCS." With respect to this statement, please list all finance numbers sampled in the IOCS that were assigned to each the three groups. Please provide a general narrative description as to how these group assignments were made.

RESPONSE TO AAP/USPS-T17-3

The IOCS tally file in USPS-LR-I-12 contains encrypted finance numbers. To partition that file into BMC, MODS, and Non-MODS facilities, please refer to:

1. The SAS program "MBC" contained in one of the two diskettes filed in USPS-LR-I-106, which lists the BMC encrypted finance numbers under the caption "BMC encrypted finance numbers."
2. The "MODFIN98" file contained in one of the two diskettes in USPS-LR-I-106, which lists the MODS 1 & 2 encrypted finance numbers.
3. The remaining finance numbers (i.e. those not listed in 1. or 2.above) in the IOCS tally file consist of the Non-MODS encrypted finance numbers.

Please refer to USPS-LR-I-1, sections 3.0, 3.1.2, 3.1.3 and 3.1.4 for a general narrative description of these three groups, which underlies these group assignments.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO AAP INTERROGATORIES

AAP/USPS-T17-4 On page 10 (lines 5-8) of your testimony, you state that "[f]or the BMC and non-MODS sampled finance numbers, the cost pool tally mapping, which relies on the IOCS Uniform Operation codes and Questions 18 and 19 responses, is the basis for partitioning the total BMC and non-MODS costs into cost pools in Part I of LR-I-106." With respect to this statement, please provide the exact language used in Questions 18 and 19.

RESPONSE TO AAP/USPS-T17-4

Please refer to Chapter 11 of Handbook F-45, In-Office Cost System, Field Operating

Instructions filed in USPS LR-I-14.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO AAP INTERROGATORIES

AAP/USPS-T17-6 On page 11 (lines 17-18) or your testimony, you state that "[t]he procedure used to derive volume-variable cost fractions in this docket is based on the Postal Service's pre-R97-1 method, but is applied by cost pool. This method separates not-overhead tally activities into those that are volume-variable and those that are not 100% volume variable." With respect to this statement:

(a) Please provide data comparable to Table 1 and Table 3 showing the effect of using the Postal Service's pre-R97-1 method, but not applying that method by cost pool.

(b) Please provide data comparable to Table 1 and Table 3 showing the effect of using the Postal Service's R97-1 method exactly as that method was proposed by the Postal Service in R97-1.

(c) With respect to each "non-overhead tally activity" referenced in this statement, please provide separate lists of all non-volume variable tally activities and all 100 percent volume-variable tally activities. With respect to each of the 100 percent volume variable tally activities listed, please explain fully, with examples, why the non-overhead tally activity is considered 100 percent volume variable.

RESPONSE TO AAP/USPS-T17-6

a. It is my understanding that the file MP-97-99.xls, contained in USPS-LR-I-233 provides the comparable information -- total and volume-variable costs -- for mail processing based on the LIOCATT method, which was used by the Postal Service prior to Docket No. R97-1 method.

b. Data comparable to Table 1 and Table 3 based on the method proposed by the Postal Service in Docket No. R97-1 are contained in the diskette filed in USPS-LR-I-251 (See Resp to 6b Tab1.xls, Resp to 6b Tab3MODS.txt, Resp to 6b Tab3BMCS.txt and Resp. to 6b Tab3 NMOD.txt). Also note that the mail processing FY 98 data for Table 1 can also be found in USPS-LR-I-1, pp. 3-3 and 3-4.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO AAP INTERROGATORIES

c. With respect to the first question in (c), the non-volume variable tally activities are listed in the description of SAS programs, MOD1VARB, NONMODVB, and BMCSVARB contained in Part II of USPS LR-I-106 (p.II-40, p.II-49, p.II-56), and in the USPSFIXD and the MODSVARB (at lines 00162000-00169000) SAS program codes contained in one the two diskettes filed in USPS-LR-I-106.

The 100 percent volume-variable tally activities consist of all the remaining tally activities, except for those associated with the overhead activities (6521, 6522, 6523)

With respect to the second question in (c), it is my understanding that the FY 96 Summary Description of USPS Development of Costs by Segments and Components contained in USPS-LR-H-1, and filed in Docket No. R97-1, provides such information.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO AAP INTERROGATORIES

AAP/USPS-T17-8 On page 14 of your testimony (lines 2-3) of your testimony, you state that "not-handled tallies" do not contain information on mail shapes and item types. With respect to not-handled tallies, please list and identify each datum of information that is contained in such tallies.

RESPONSE TO AAP/USPS-T17-8.

By definition, the 'not-handling' tallies exclude both the direct tallies (which have recorded subclass or mail class information), and the mixed tallies (which are item and container handling tallies with no recorded subclass or mail class information). For additional details on how the SAS programs identify the not-handling tallies, please refer to the description of the SAS programs MOD1DIR (p.II-41), NONMOD1 (p.II-48) and BMC1 (p.II-54) in Part II of USPS-LR-I-106.

Thus, the not-handling tallies contain no data for IOCS Questions 21-25 which are skipped for these tallies (see Chapters 12-17 of Handbook F-45, In-Office Cost System, Field Operating Instructions filed in USPS LR-I-14). For data included in all other fields, please refer to Appendix A, p 2-34 in USPS-LR-I-12, and USPS-LR-I-14.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO AAP INTERROGATORIES

AAP/USPS-T17-11 On page 15 of your testimony (lines 12-13), you state that "[f]or the BMC platform pool, the 'filling' of items and non-empty containers is with direct piece and item subclasses from all BMC cost pools." With respect to this procedure, please provide a step-by-step calculation showing how the procedure was used by the Postal Service to distribute mixed tally BMC platform pool costs to the BPM subclass.

RESPONSE TO AAP/USPS-T17-11.

The responses to this interrogatory and to interrogatory No.14 are contained in the diskette filed in USPS-LR-I-251. For a step by step calculation, see the "Overview of SAS programs", and the description of SAS programs BMC1 and BMC2, in Part II of USPS-LR-I-106.

Tables 1a, 2a and 2b in USPS-LR-I-251 are relevant to this interrogatory.

Table 1a provides, for all cost pools combined, the subclass direct tallies (tallies refer to dollar-weighted tallies) by piece shape, item type and container type. The subclass distribution factor for a piece shape or item type is obtained by dividing the subclass tallies by the total tallies for all subclasses for the piece shape or item type.

Each column total in Table 2a provides the Platform cost pool tallies associated with handling mixed single items, by item type. When the column total for an item type in Table 2a is multiplied by the subclass distribution factor of the same item type from Table 1a, it produces the subclass distributed mixed tallies shown in Table 2a.

Each column total in Table 2b provides the Platform cost pool tallies associated with handling "identified" containers, pro-rated by the percentages of volume occupied by shapes of loose mail pieces and/or types of items (see footnote 14 of my testimony). When the pro-rated tallies (or column total) for a piece shape or an item type in containers from Table 2b is multiplied by the subclass distribution factor of the

corresponding piece shape or item type from Table 1a, they produce the subclass distributed mixed tallies, shown in Table 2b.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO AAP INTERROGATORIES

AAP/USPS-T17-14 On page 16 (lines 22-23) of your testimony, you state that "[f]or the BMCs the same distribution key for the not-handling tallies on the Platform is now extended to the 'Allied Labor and Other Mail Processing' Cost Pool." With respect to this statement, please provide a step-by-step calculation for the Platform cost pool at BMCs separately showing 1) distribution of direct tallies to the subclasses, 2) distribution of mixed tallies to the subclasses, 3) distribution of not-handling tallies to the subclasses and 4) use of the same distribution key that was used for not-handling tallies on the Platform to distribute the Allied Labor and Other Cost pool to the subclasses.

RESPONSE TO AAP/USPS-T17-14.

The response to this interrogatory (and interrogatory No.11) is contained in the diskette filed in USPS-LR-I-251. For a step by step calculation, see the "Overview of SAS programs", and the description of SAS programs BMC1-BMC4, in Part II of USPS-LR-I-106.

Table 1 provides the direct tallies distributed to subclasses. For the distribution of mixed tallies associated with single items and identified containers, see my response to AAP/USPS-T17-11.

Each column total in Table 2c provides the Platform cost pool tallies associated with handling "unidentified" and empty containers, by container type. The numerator for the subclass distribution factor for these tallies is obtained by adding the Platform subclass distributed tallies (or row total) for an identified container type from Table 2b with the Platform subclass direct tallies for direct containers of the same type from Table 1c. The denominator for the subclass distribution factor for these tallies is obtained by adding the total Platform tallies for an identified container type from Table 2b with the total Platform direct tallies for containers of the same type from Table 1c.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO AAP INTERROGATORIES

When the tallies for a type of "unidentified" or empty container in Table 2c are multiplied by the subclass distribution key for a container of the same type, they generate subclass distributed tallies for "unidentified" or empty containers, by container type, in Table 2c.

Table 2 shows the total distributed mixed tallies for all cost pools.

Table 3 provides the Platform total not-handling tallies (cumulative total).

Table 4 provides the distribution key for the Platform not-handling tallies. The numerator for a subclass distribution factor is obtained by adding the subclass tallies (row total) from Table 1 to the corresponding subclass tallies (row total) from Table 2. The denominator is obtained by adding the grand total from Table 1 to the grand total from Table 2. The distribution key is then applied to the total Platform not-handling tallies from Table 3 to obtain subclass distributed not-handling tallies.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO AAP INTERROGATORIES

AAP/USPS-T17-15 On page 16 (line 24) and page 17 (line 1-2) of your testimony, you state "[t]he not-handling tallies in the Platform and Allied cost pools represent about 49 percent of all not-handling tallies for the mail processing costs pools in the BMCs." Please provide all calculations used to derive this percentage.

RESPONSE TO AAP/USPS-T17-15

The 49 percent was obtained from the same table as the BMCS Table in USPS-LR-I-184, by adding the not-handling dollar-weighted tallies for the PLA and OTHR cost pools and dividing them by the total not-handling dollar-weighted tallies ((62,270 + 98,168)/329,607). These numbers did not include the cost pool portion of the break time which is shown as a separate cost pool in that table. Thus, they are revised below to include the break time.

The distributed breaks for the PLA and OTHR cost pools are:

OTHR 45,704 obtained as (251,839 – 206,018)* x (791,481/793,500).

PLA 31,907 obtained as (207,947 – 175958)* x (791,481/793,500)

* see Tables I-3 and I-3B, OTHR and PLA pool costs before and after distributed breaks.

A revised percentage for the OTHR and PLA not-handling tallies (which now includes the distributed break time for these cost pools) is then 72 percent ((62,270 + 45,704 + 98,168 + 31,907)/329,607).

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO AAP INTERROGATORIES

AAP/USPS-T17-17 On page 21 (lines 11-13) of your testimony, you state that "[i]n W/S 3.3, the inputs enable the Administrative Service activities to be classified with those directly associated with subclasses, or with not-handling mail activities, some of which are determined to be non-volume variable." With respect to this statement, please describe the procedures and methods by which Administrative Services activities were classified. Please state fully the bases upon which these classifications were made.

RESPONSE TO AAP/USPS-T17-17

The IOCS activity codes provide the information necessary to classify the Administrative service (Cost Segment 3.3) tallies into those where the sampled employee was handling mail with identified subclass(es) (i.e. "directly associated with subclasses") and those where the sampled employee was not handling mail. Also, see the description of the SAS program ADMIN in Part IV of USPS-LR-I-106. It is my understanding that all subparts related to Section 3.3 of the FY 98 Summary Description of USPS Development of Costs by Segments and Components, filed in USPS-LR-I-1, provide information on the classification of the activity codes into volume-variable and non-volume-variable.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO ANM INTERROGATORIES
(Redirected from Witness Ramage, USPS-T-2)

ANM/USPS-T2-5. Please confirm that within MODS pools, mixed mail tallies are distributed to the classes and subclasses of mail in proportion the direct tallies. If you do not confirm, please explain how costs associated with mixed mail tallies are distributed.

RESPONSE TO ANM/USPS-T2-5.

Except for the MODS Platform cost pool and the empty container tallies, the statement that, within MODS pools, mixed tallies are distributed to the classes and subclasses of mail in proportion to the direct tallies, is not incorrect on general principles. The statement, however, needs to be qualified. This distribution is not performed in the aggregate but by item type and piece shape. Within a MODS cost pool, mixed tallies of an item type or piece shape are matched with direct mail tallies of the same item type or piece shape for the distribution.

For further details, please refer to:

- Section IIB of my testimony, in particular:
  the introductory part on p.13 which defines "direct", "mixed" and "not-handling" tallies
  Part, 3a, on p. 14, Distribution of Mixed Tallies to Subclasses
- Part II A of LR-I-106 on p.II.2, Overview of SAS Programs
- Part II B of LR-I-106, Description of SAS Programs, the sections on MOD1DIR, MOD2ITEM, MOD22ITM, MOD3CONT, p. II-41 – p. II-45
- The SAS program codes for MOD1DIR, MOD2ITEM, MOD22ITM and MOD3CONT contained in the diskette in LR-I-106

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO ANM INTERROGATORIES
(Redirected from Witness Ramage, USPS-T-2)

ANM/USPS-T2-7. Please confirm that within MODS pools, "not handling" mail tallies are distributed to the classes and subclasses of mail in proportion the direct tallies. If you do not confirm, please explain how costs associated with not handling mail tallies are distributed.

RESPONSE TO ANM/USPS-T2-7.

Not confirmed. As a general principle, "not handling" tallies are distributed to the classes and subclasses of mail in proportion to the direct and distributed mixed tallies. The distribution is performed at the aggregate level. For non-allied cost pools, the distribution of the aggregated "not-handling" tallies is based on the aggregated direct and distributed mixed tallies within a MODS pool. For the allied cost pools, the distribution of the aggregated "not-handling" tallies within a MODS cost pool is based on the aggregated direct and distributed mixed tallies across all MODS allied and distribution cost pools.

For further details, please refer to:

- Section IIB of my testimony, in particular:
  the introductory part on p.13 which defines "direct", "mixed" and "not-handling" tallies
  Part, 3b, on p. 16, Distribution of Not-Handling Tallies to Subclasses
- Part II B of LR-I-106, Description of SAS Programs, the section on MOD4DIST, p.II-45
- The SAS program codes for MOD4DIST contained in the diskette in LR-I-106

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO DMA INTERROGATORIES

DMA/USPS-T17-1. Please refer to Table 2 (Page 26) of your testimony. Please disaggregate dollar-weighted tally costs by cost pool and by the same categories as in Table 2 (e.g., Direct Tallies - Pieces, Direct Tallies - Items, Direct Tallies - Containers, Mixed Tallies - Uncounted Items). Please provide in an electronic spreadsheet format and in a format similar to Table 2.

RESPONSE TO DMA/USPS-T17-1

The excel table for the disaggregated data for Table 2 is filed in LR-I-184.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO DMA INTERROGATORIES

DMA/USPS-T17-2. Please refer to Table 3 of your testimony, your library reference LR-H-106, and pages 140-142 of the Docket No. R97-1 Opinion and Recommended Decision. Note that in the Docket No. R97-1 Opinion and Recommended Decision the Postal Rate Commission "conclude[d] that mixed mail costs in a given allied MODS pool should be distributed in proportion to the direct costs across all MODS pools."

a. Did you or anyone else working for the Postal Service (whether as an employee or contractor) perform a distribution of mail processing costs that both distributes mixed-mail tallies in allied operations in the way that the Commission recommended in Docket No. R97-1 and distributes not-handling tallies at allied operations according to the distribution method you are proposing in your testimony?

1. If so, please provide summary results from the method in an electronic spreadsheet format and in a format similar to Table 3 of your testimony.

2. If so, please provide as a library reference all of the programs and data sources you used to implement this distribution method.

b. Did you or anyone else working for the Postal Service (whether as an employee or contractor) perform a distribution of mail processing costs that distributes mixed-mail tallies at allied operations using direct tallies from distribution operations (in addition to direct allied tallies) but in a manner that differs from the Commission's recommendation in Docket No. R97-1?

1. If so, please describe all of these distribution methods.

2. If so, please provide summary results from these distribution methods in an electronic spreadsheet format and in a format similar to Table 3 of your testimony.

RESPONSE TO DMA/USPS-T17-2.

a. No.

1. and 2 . Not applicable.

b. No.

1. and 2. Not applicable.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO DMA INTERROGATORIES

DMA/USPS-TI7-3. Please refer to Table 2 (page 26) of your testimony. For each percentage figure in this table, please provide the corresponding total number of tallies and the corresponding total tally dollar amount of those tallies.

RESPONSE TO DMA/USPS-T17-3.

The total tally dollar amount corresponding to each percentage figure in Table 2 of my testimony was provided in the 'Facility' sheet of the excel table in LR-I-184 (see my response to DMA/USPS-T17-1). The corresponding total number of tallies is provided in the table attached to this response (please see the footnote to the table for an interpretation of what the numbers for the identified containers represent).

Response to DMA/USPS-T17-3
Table 2. Number of Tallies by Handling ('direct' & 'mixed') and Not-Handling Categories, and by Facility Groupings

TABLE OF DKGR BY FACILITY

DKGR / FACILITY				
Frequency	BMCS	MODS	NONMODS	Total
direct pieces	2699	52175	9628	64502
direct Item	1553	16783	2230	20566
direct Container	75	501	54	630
mixd item/empty	331	4387	500	5218
mixd item/uncnt	66	1234	140	1440
mixd cont pieces	504	3424	617	4545
mixd cont Items	394	6343	504	7241
mixd cont/unidfd	67	389	229	685
mixd cont/Empty	698	6934	962	8594
NOT HANDLING	6456	80617	6178	93251
Total	12843	172787	21042	206672

Note: the number of tallies for 'mix cont pieces' and 'mixd cont/Items' is the number of records resulting from Program MOD1DIR where a separate record is created for each non-zero percentage recorded for an item type or shape of loose mail identified with a container tally

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO DMA INTERROGATORIES

DMA/USPS-TI7-4. For each facility grouping, please provide the percentage of dollar-weighted direct tallies by class and subclass. Also provide the corresponding total number of direct tallies for each class and subclass of each facility grouping, and the total tally dollar amount of the direct tallies for each class and subclass of each facility grouping.

RESPONSE TO DMA/USPS-T17-4.

See the two tables in the attachment to this response. The total direct tally dollar amount and the direct tally dollar-weighted percentage by class and subclass for each facility grouping are provided in the first table. The corresponding total number of direct tallies by class and subclass for each facility grouping is provided in the second table.

Response to DMAT17_04
Dollar-Weighted Direct Tallies by Class and Subclass
By Facility Grouping
Col Pct = Percentage of Dollar-Weighted Direct Tallies

TABLE OF MAIL BY FACILITY

MAIL	FACILITY			
Frequency Percent Col Pct	BMCS	MODS	NONMODS	Total
1--LTRS SGL PC	1159.8 0.02 0.56	2024302 33.26 45.82	622134 10.22 42.55	2647596 43.51
2--LTRS PRESORT	201.31 0.00 0.10	469750 7.72 10.63	164356 2.70 11.24	634307 10.42
3--CARDS SGL PC	106.2 0.00 0.05	84887 1.39 1.92	20500 0.34 1.40	105493 1.73
4--CARDS PRSORT	0 0.00 0.00	14769 0.24 0.33	7027.7 0.12 0.48	21797 0.36
5--PRIORITY	1387.4 0.02 0.67	232009 3.81 5.25	65812 1.08 4.50	299208 4.92
6--EXPRESS	0 0.00 0.00	38830 0.64 0.88	9263 0.15 0.63	48093 0.79
7--MAILGRAM	0 0.00 0.00	115.43 0.00 0.00	0 0.00 0.00	115.43 0.00
8-1 IN COUNTY	32.967 0.00 0.02	3752.7 0.06 0.08	3417.8 0.06 0.23	7203.5 0.12
8-2 PER.REGULR	7554.4 0.12 3.67	206036 3.39 4.66	79227 1.30 5.42	292817 4.81
8-3 PER.NONPRF	1892.3 0.03 0.92	34874 0.57 0.79	11950 0.20 0.82	48716 0.80
Total	205582 3.38	4417882 72.60	1461962 24.02	6085426 100.00

(Continued)

Response to DMAT17_04
Dollar-Weighted Direct Tallies by Class and Subclass
By Facility Grouping
Col Pct = Percentage of Dollar-Weighted Direct Tallies

TABLE OF MAIL BY FACILITY

MAIL	FACILITY			
Frequency Percent Col Pct	BMCS	MODS	NONMODS	Total
8-4 PER.CLASSR	170.13 0.00 0.08	1650.4 0.03 0.04	759.86 0.01 0.05	2580.4 0.04
9--(A) SGL PC	4118.8 0.07 2.00	31200 0.51 0.71	9692.2 0.16 0.66	45011 0.74
10--(A) REG/ENH	5072.4 0.08 2.47	99303 1.63 2.25	48636 0.80 3.33	153011 2.51
11--(A) REG/OTHR	82201 1.35 39.98	712984 11.72 16.14	275899 4.53 18.87	1071084 17.60
12--(A) NPRF/ENH	1579.4 0.03 0.77	15793 0.26 0.36	4530.2 0.07 0.31	21902 0.36
13--(A) NPRF/OTH	10148 0.17 4.94	160535 2.64 3.63	50056 0.82 3.42	220739 3.63
14--(B) PARCELS	36715 0.60 17.86	33651 0.55 0.76	16992 0.28 1.16	87357 1.44
15--(B) BD PRINT	18671 0.31 9.08	18911 0.31 0.43	10060 0.17 0.69	47642 0.78
16--(B) SPECIAL	14964 0.25 7.28	10740 0.18 0.24	5094.2 0.08 0.35	30798 0.51
17--(B) LIBRARY	1542.3 0.03 0.75	2368.3 0.04 0.05	1136.6 0.02 0.08	5047.3 0.08
Total	205582 3.38	4417882 72.60	1461962 24.02	6085426 100.00

(Continued)

Response to DMAT17_04
Dollar-Weighted Direct Tallies by Class and Subclass
By Facility Grouping
Col Pct = Percentage of Dollar-Weighted Direct Tallies

TABLE OF MAIL BY FACILITY

MAIL / Frequency / Percent / Col Pct	FACILITY: BMCS	MODS	NONMODS	Total
18--USPS	5744.6 0.09 2.79	53072 0.87 1.20	13366 0.22 0.91	72183 1.19
19--FREE MAIL	807.83 0.01 0.39	4446.6 0.07 0.10	1266 0.02 0.09	6520.4 0.11
20--INTL MAIL	11142 0.18 5.42	99074 1.63 2.24	6587.1 0.11 0.45	116803 1.92
21--REGISTRY	0 0.00 0.00	21744 0.36 0.49	3463.4 0.06 0.24	25207 0.41
22--CERTIFIED.	0 0.00 0.00	13512 0.22 0.31	18537 0.30 1.27	32049 0.53
23--INSURED	0 0.00 0.00	475.99 0.01 0.01	597.64 0.01 0.04	1073.6 0.02
24--COD	0 0.00 0.00	607.33 0.01 0.01	348.55 0.01 0.02	955.88 0.02
25--SPECIAL HAND	0 0.00 0.00	53.645 0.00 0.00	0 0.00 0.00	53.645 0.00
26--OTHER SERVCS	177.02 0.00 0.09	21679 0.36 0.49	8581.8 0.14 0.59	30438 0.50
5340	194.76 0.00 0.09	6758 0.11 0.15	2670.2 0.04 0.18	9622.9 0.16
Total	205582 3.38	4417882 72.60	1461962 24.02	6085426 100.00

Response to DMAT17_04
Number of Direct Tallies by Class and Subclass
By Facility Grouping

TABLE OF MAIL BY FACILITY

MAIL Frequency	FACILITY BMCS	MODS	NONMODS	Total
1--LTRS SGL PC	22	30270	4991	35283
2--LTRS PRESORT	6	7010	1278	8294
3--CARDS SGL PC	2	1319	168	1489
4--CARDS PRSORT	0	240	54	294
5--PRIORITY	27	4035	562	4624
6--EXPRESS	0	811	89	900
7--MAILGRAM	0	2	0	2
8-1 IN COUNTY	27	163	34	224
8-2 PER.REGULR	155	3079	651	3885
8-3 PER.NONPRF	63	636	105	804
8-4 PER.CLASSR	28	123	11	162
9--(A) SGL PC	89	465	89	643
10--(A) REG/ENH	86	1496	421	2003
11--(A) REG/OTHR	1561	10332	2227	14120
12--(A) NPRF/ENH	26	234	42	302
Total	4327	69459	11912	85698

(Continued)

Response to DMAT17_04
Number of Direct Tallies by Class and Subclass
By Facility Grouping

TABLE OF MAIL BY FACILITY

MAIL	FACILITY			
Frequency	BMCS	MODS	NONMODS	Total
13--(A) NPRF/OTH	223	2356	412	2991
14--(B) PARCELS	664	546	152	1362
15--(B) BD PRINT	332	289	88	709
16--(B) SPECIAL	279	162	46	487
17--(B) LIBRARY	29	34	9	72
18--USPS	75	822	114	1011
19--FREE MAIL	17	63	13	93
20--INTL MAIL	610	3892	62	4564
21--REGISTRY	0	454	28	482
22--CERTIFIED.	0	207	153	360
23--INSURED	0	8	4	12
24--COD	0	10	3	13
25--SPECIAL HAND	0	1	0	1
26--OTHER SERVCS	3	301	80	384
5340	3	99	26	128
Total	4327	69459	11912	85698

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO DMA INTERROGATORIES

DMA/USPS-T17-5. Please refer to programs MBC, MODIPOOL, NONMOD1, and BMC1 associated with LR-1-106. Running these programs on the IOCS data file produces datasets containing three activity codes that are not referenced in Tables B-1 or B-2 of USPS LR-1-1. These activity codes are 2068, 3068, and 4068. From program MOD1 POOL (lines 06940002-06960002), it appears that these activity codes are related, respectively, to the activity codes 2060, 3060, and 4060. Please confirm that the shape, class, and subclass information for activity codes 2068, 3068, and 4068 is the same as for the corresponding activity codes 2060, 3060, and 4060, respectively. If this is not the case, please provide the appropriate shape, class, and subclass information for these activity codes.

RESPONSE TO DMA/USPS-T17-5.

Confirmed.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

TW/USPS-T17-1 Please provide electronic spreadsheet (e.g., Excel) formats for all the tables presented in LR-I-106. If an electronic spreadsheet format has already been provided for some or all of these tables, please identify all relevant files.

RESPONSE TO TW/USPS-T17-1.

The excel spreadsheets of all the tables presented in LR-I-106 are contained in the diskette filed in USPS-LR-I-189. Note that Tables II-1 (A through C) in USPS-LR-I-106 correspond to Table 3 in my testimony, which can be obtained from the PRC website.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

TW/USPS-TI7-2 Please refer to the breakdown of Non-MODS clerk/mailhandler costs in Tables I-4A and I-4B in LR-I-106.

a. Please confirm that this breakdown was produced using IOCS tally information. If not confirmed, please identify all data and explain how they were used.

b. Please name the SAS program(s) which produced the above mentioned tables and explain exactly where and under what file name(s) it (they) can be found.

c. Please name the IOCS file used to produce these tables and explain under what file name and in what library reference it can be found.

d. Besides uniform operation codes, please explain precisely what IOCS data items were used to associate each non-MODS mail processing tally with individual pools. Please identify the fields of IOCS tally records that were used, the specific IOCS questions that those fields contain the answer to, and the logic applied to select the pool for each tally.

e. Precisely what characteristics of an IOCS tally causes it to be included in the MANF pool? What causes it to be included in the allied pool?

f. For each mail processing Non-MODS cost pool specified in Tables 1-4A and 1-4B, please provide a further breakdown by mail processing uniform operation code.

RESPONSE TO TW/USPS-TI7-2.

a. Confirmed for Table I-4A.

For Table I-4B, the breakdown of the costs is based on IOCS tally dollars. But the total costs which are applied to this breakdown are those described in formula (i) and (ii), page I-3, Part I of LR-I-106.

b. The immediate SAS program which produced the above mentioned tables is NONMOD1, lines 00070093-00935098, with Table I-4A and Table I-4B identified as titles of SAS outputs at lines 00830098 and 00931098. The IOCS Non-MODS

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

RESPONSE TO TW/USPS-TI7-2. (Cont'd)

tally file used as input into the SAS program NONMOD1 is created by the SAS program MBC which partitions the SAS IOCS file into three temporary tally files, BMCS1, MODS1 and NONMODS1 (see page II-38, Part 2, USPS LR-I-106). The NONMODS1 temporary tally file then serves as the NMOD input into the SAS program NONMOD1 (see line 00080093). Both SAS programs, NONMOD1 and MBC, are contained in the diskette filed in USPS LR-I-106. The JCL document, (which is also contained in the diskette filed in USPS LR-I-106) provides the set up and sequence for running the SAS programs.

c. The IOCS SAS file used in Program MBC is the mainframe IOCS SAS file 'ALB.HQTAL98.BYITEM.PRCALL' listed in the JCL document contained in the diskette filed in USPS LR-I-106 (at line number 00120099). The PC SAS version of the IOCS mainframe SAS file is filed in USPS-LR-I-12 under the name 'PRC98.SD2'. USPS-LR-I-12 also includes a flat file version of this data under the name 'PRCFLAT.DAT.' Both PC SAS and flat file versions of the IOCS are documented in Appendix H of USPS-LR-I-12. Please note that some minor modifications may be required for a mainframe SAS program to execute properly in a PC environment.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

RESPONSE TO TW/USPS-TI7-2. (Cont'd)

d. The IOCS data items used to associate each non-MODS mail processing tally with individual pools and the logic applied to select the pool for each tally.are contained in the SAS program NONMOD1 (see the answer to b. above). They are also described on page II-47, Part II of USPS LR-I-106. The 'PRC98.SD2' PC SAS file already contains the names of the fields of IOCS tally records that were used, as listed in NONMOD1. To identify the same fields in the 'PRCFLAT.DAT' flat file, please see Appendix H of USPS-LR-I-12, which contains the program that writes the SAS file into a flat file and gives the field positions for the flat file. The specific IOCS questions that those fields contain the answer to and the value assignments for those fields are contained in Appendix A of USPS-LR-I-12.

e. The responses to IOCS Question 19 are the basis for including the tallies in the MANF. The responses to IOCS Questions 19 and 18 are the basis for including the tallies in the ALLIED cost pool (see the answers to b. and d. above). For further details on these IOCS questions, please see Chapter 11 of Handbook F-45, In-Office Cost System, Field Operating Instructions filed in USPS LR-I-14,.

f. A further breakdown by mail processing uniform operation code of each mail processing Non-MODS cost pool specified in Tables I-4A and I-4B is provided in the two tables attached to this response.

Response to TW/USPS-T-17-2F
TABLE I - 4A
TOTAL NONMODS IOCS TALLY DOLLAR WEIGHTS BY
MAIL PROCESSING POOLS AND BY IOCS OPERATION CODES
MAIL PROC. POOLS DO NOT INCLUDE DISTRIBUTED BREAK TIME WHICH
IS LISTED AS A SEPARATE POOL (I.E. Z BREAKS).

TABLE OF POOL BY F260

POOL F260(TALLY OPERATION ROUTE CODE ALB095)

Frequency	00	01	02	03	04	05	06	07	08	09	Total
ALLIED	0	65942	47626	14834	104363	26813	0	44598	74257	0	521594
AUTO/MEC	0	4590.6	15458	13703	36612	9338.5	0	575.79	810.89	0	132505
EXPRESS	0	0	0	0	0	0	0	0	0	0	17682
MANF	0	9951.8	29260	21031	145388	21231	0	819.58	2320.5	0	442192
MANL	0	14739	54288	33471	195723	23639	0	1823.4	1994.5	0	653326
MANP	0	3513.9	7599.4	2895.9	36604	5089.7	0	520.01	2530.2	0	116992
MISC	31414	6938.8	4759.1	1327.1	5154.6	3513.2	46412	0	389.54	0	238601
REGISTRY	0	0	0	0	0	0	0	0	0	0	27435
Z BREAKS	3575.1	7023.2	13093	70742	1107	94440	3058.2	0	9146.9	0	214257
09	0	0	0	0	0	0	0	0	0	1171032	1171032
10	0	0	0	0	0	0	0	0	0	0	476231
17	0	0	0	0	0	0	0	0	0	0	12293
24	0	0	0	0	0	0	0	0	0	0	29484
25	0	0	0	0	0	0	0	0	0	0	6186.1
26	0	0	0	0	0	0	0	0	0	0	13086
6522	0	0	0	0	0	0	0	0	0	0	43270
Total	34989.1	112699	172084	158004	524951	184064	49470.6	48336.8	91449.4	1171032	4116166

(Continued)

REVISED
2/24/2000

Response to TW/USPS-T-17-2F
TABLE I - 4A
TOTAL NONMODS IOCS TALLY DOLLAR WEIGHTS BY
MAIL PROCESSING POOLS AND BY IOCS OPERATION CODES
MAIL PROC. POOLS DO NOT INCLUDE DISTRIBUTED BREAK TIME WHICH
IS LISTED AS A SEPARATE POOL (I.E. Z BREAKS).

TABLE OF POOL BY F260

POOL F260(TALLY OPERATION ROUTE CODE ALB095)

Frequency	10	11	12	13	14	15	16	17	18	20	Total
ALLIED	0	32323	2845.9	3540.2	63.828	3991.1	721.26	0	0	59011	521594
AUTO/MEC	0	1470.7	188.97	86.128	0	1182.4	0	0	0	542.05	132505
EXPRESS	0	0	0	0	0	0	0	0	0	0	17682
MANF	0	19815	1474.8	2395.4	0	9309.5	2457.4	0	0	9863	442192
MANL	0	52022	3578.1	7360.8	0	14791	2190.5	0	0	38485	653326
MANP	0	3570.4	634.86	1506.5	0	1505.3	0	0	0	2885.8	116992
MISC	0	809.37	0	0	48582	65405	0	0	0	0	238601
REGISTRY	0	0	0	0	0	0	0	0	27435	0	27435
Z BREAKS	0	0	0	0	3564.7	6119.7	0	0	1936.5	0	214257
09	0	0	0	0	0	0	0	0	0	0	1171032
10	476231	0	0	0	0	0	0	0	0	0	476231
17	0	0	0	0	0	0	0	12293	0	0	12293
24	0	0	0	0	0	0	0	0	0	0	29484
25	0	0	0	0	0	0	0	0	0	0	6186.1
26	0	0	0	0	0	0	0	0	0	0	13086
6522	43270	0	0	0	0	0	0	0	0	0	43270
Total	519501	110010	8722.6	14889	52210.2	102304	5369.15	12293	29371.7	110786	4116166

(Continued)

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Response to TW/USPS-T-17-2F
TABLE I - 4A
TOTAL NONMODS IOCS TALLY DOLLAR WEIGHTS BY
MAIL PROCESSING POOLS AND BY IOCS OPERATION CODES
MAIL PROC. POOLS DO NOT INCLUDE DISTRIBUTED BREAK TIME WHICH
IS LISTED AS A SEPARATE POOL (I.E. Z BREAKS).

TABLE OF POOL BY F260

POOL F260(TALLY OPERATION ROUTE CODE ALB095)

Frequency	21	22	23	24	25	26	27	28	29	Total
ALLIED	0	0	0	0	0	0	568.82	317.98	39778	521594
AUTO/MEC	0	0	0	0	0	0	5196	32535	10215	132505
EXPRESS	0	17682	0	0	0	0	0	0	0	17682
MANP	0	0	0	0	0	0	3668.1	52.785	163155	442192
MANL	0	0	0	0	0	0	3001.5	587.84	205631	653326
MANP	0	0	0	0	0	0	571.53	0	47564	116992
MISC	577.66	0	23318	0	0	0	0	0	0	238601
REGISTRY	0	0	0	0	0	0	0	0	0	27435
Z BREAKS	0	450.13	0	0	0	0	0	0	0	214257
09	0	0	0	0	0	0	0	0	0	1171032
10	0	0	0	0	0	0	0	0	0	476231
17	0	0	0	0	0	0	0	0	0	12293
24	0	0	0	29484	0	0	0	0	0	29484
25	0	0	0	0	6186.1	0	0	0	0	6186.1
26	0	0	0	0	0	13086	0	0	0	13086
6522	0	0	0	0	0	0	0	0	0	43270
Total	577.657	18132.6	23318.3	29484	6186.08	13085.6	13005.9	33493.8	466344	4116166

Revised

Response to TW/USPS-T-17-2F
TABLE I - 4B
TOTAL NONMODS IOCS TALLY DOLLAR WEIGHTS BY
MAIL PROCESSING POOLS AND BY IOCS OPERATION CODES
MAIL PROC. POOLS DO NOT INCLUDE DISTRIBUTED BREAK TIME COST
WHCIH IS LISTED AS A SEPARATE POOL (I.E. Z BREAKS).

TABLE OF POOL BY F260

POOL F260(TALLY OPERATION ROUTE CODE ALB095)

Frequency	00	01	02	03	04	05	06	07	08	09	Total
ALLIED	0	70053	50595	15759	110869	28484	0	47379	78886	0	554113
AUTO/MEC	0	4876.8	16422	14557	38895	9920.7	0	611.69	861.45	0	140766
EXPRESS	0	0	0	0	0	0	0	0	0	0	18785
MANF	0	10572	31085	22342	154452	22554	0	870.68	2465.2	0	469761
MANL	0	15658	57673	35558	207925	25113	0	1937.1	2118.9	0	694058
MANP	0	3732.9	8073.1	3076.4	38887	5407.1	0	552.43	2608	0	124286
MISC	33372	7371.5	5055.9	1409.8	5476	3732.2	49306	0	413.83	0	253477
REGISTRY	0	0	0	0	0	0	0	0	0	0	29146
Z BREAKS	3798	7461.1	13909	75153	1176	100328	3248.8	0	9717.1	0	227615
09	0	0	0	0	0	0	0	0	0	1248178	1248178
10	0	0	0	0	0	0	0	0	0	0	505921
17	0	0	0	0	0	0	0	0	0	0	13059
24	0	0	0	0	0	0	0	0	0	0	31426
25	0	0	0	0	0	0	0	0	0	0	6593.6
26	0	0	0	0	0	0	0	0	0	0	13948
6522	0	0	0	0	0	0	0	0	0	0	45968
Total	37170.5	119726	182813	167855	557680	195540	52554.9	51350.4	97150.9	1248178	4377101

(Continued)

REVISED
2/24/2000

Response to TW/USPS-T-17-2F
TABLE I - 4B
TOTAL NONMODS IOCS TALLY DOLLAR WEIGHTS BY
MAIL PROCESSING POOLS AND BY IOCS OPERATION CODES
MAIL PROC. POOLS DO NOT INCLUDE DISTRIBUTED BREAK TIME COST
WHCIH IS LISTED AS A SEPARATE POOL (I.E. Z BREAKS).

TABLE OF POOL BY P260

POOL P260(TALLY OPERATION ROUTE CODE ALB095)

Frequency	10	11	12	13	14	15	16	17	18	20	Total
ALLIED	0	34339	3023.3	3760.9	67.807	4240	766.22	0	0	62690	554113
AUTO/MEC	0	1562.4	200.75	91.498	0	1256.1	0	0	0	575.84	140766
EXPRESS	0	0	0	0	0	0	0	0	0	0	18785
MANF	0	21050	1566.7	2544.7	0	9890	2610.6	0	0	10478	469761
MANL	0	55265	3801.2	7819.7	0	15713	2327	0	0	40884	694058
MANP	0	3793	674.44	1600.4	0	1599.1	0	0	0	3065.8	124286
MISC	0	859.83	0	0	51611	69483	0	0	0	0	253477
REGISTRY	0	0	0	0	0	0	0	0	29146	0	29146
Z BREAKS	0	0	0	0	3786.9	6501.2	0	0	2057.2	0	227615
09	0	0	0	0	0	0	0	0	0	0	1248178
10	505921	0	0	0	0	0	0	0	0	0	505921
17	0	0	0	0	0	0	0	13059	0	0	13059
24	0	0	0	0	0	0	0	0	0	0	31426
25	0	0	0	0	0	0	0	0	0	0	6593.6
26	0	0	0	0	0	0	0	0	0	0	13948
6522	45968	0	0	0	0	0	0	0	0	0	45968
Total	551889	116869	9266.42	15817.2	55465.3	108683	5703.9	13059.4	31202.9	117693	4377101

(Continued)

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Response to TW/USPS-T-17-2F
TABLE I - 4B
TOTAL NONMODS IOCS TALLY DOLLAR WEIGHTS BY
MAIL PROCESSING POOLS AND BY IOCS OPERATION CODES
MAIL PROC. POOLS DO NOT INCLUDE DISTRIBUTED BREAK TIME COST
WHCIH IS LISTED AS A SEPARATE POOL (I.E. Z BREAKS).

TABLE OF POOL BY F260

POOL F260(TALLY OPERATION ROUTE CODE ALB095)

Frequency	21	22	23	24	25	26	27	28	29	Total
ALLIED	0	0	0	0	0	0	604.28	337.81	42258	554113
AUTO/MEC	0	0	0	0	0	0	5519.9	34564	10852	140766
EXPRESS	0	18785	0	0	0	0	0	0	0	18785
MANF	0	0	0	0	0	0	3896.8	56.075	173327	469761
MANL	0	0	0	0	0	0	3188.6	624.49	218452	694058
MANP	0	0	0	0	0	0	607.17	0	50529	124286
MISC	613.67	0	24772	0	0	0	0	0	0	253477
REGISTRY	0	0	0	0	0	0	0	0	0	29146
Z BREAKS	0	478.19	0	0	0	0	0	0	0	227615
09	0	0	0	0	0	0	0	0	0	1248178
10	0	0	0	0	0	0	0	0	0	505921
17	0	0	0	0	0	0	0	0	0	13059
24	0	0	0	31426	0	0	0	0	0	31426
25	0	0	0	0	6593.6	0	0	0	0	6593.6
26	0	0	0	0	0	13948	0	0	0	13948
6522	0	0	0	0	0	0	0	0	0	45968
Total	613.672	19263.1	24772.1	31426.3	6593.61	13947.6	13816.8	35582	495418	4377101

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

TW/USPS-T17-3 Please provide a breakdown of FY96 non-MODS costs similar to that shown in Tables I-4A and I-4B, using FY96 IOCS data.

RESPONSE TO TW/USPS-T17-3

A breakdown of FY96 Non-MODS costs similar to that shown in Tables I-4A and I-4B, using FY96 IOCS data, is provided in the two tables attached to this response. The total Non-MODS cost for the attached Table I-4B corresponds to the one provided on page I-5, Table I-1, Part I of LR-H-146 in Docket No. R97-1 (see 'Total for NONMODS Facilities'), which exclude the FY96 clerk and mailhandler uniform allowance and lump sum. These excluded costs are incorporated in Cost Segment 3 of the B Workpapers of Witness Alexandrovitch (USPS-T-5) in Docket No. R97-1.

Response to TW/USPS-T-17-3
Breakdown of BY96 Non-MODS Costs similar to Table 1-4A
TOTAL NONMODS IOCS DOLLAR WEIGHTS BY MAIL PROC. POOLS AND
BY IOCS OPERATION CODES FOR NON-MAIL PROC. TALLIES.
MAIL PROC. POOLS DO NOT INCLUDE DISTRIBUTED BREAK TIME WHICH
IS LISTED AS A SEPARATE POOL (I.E. Z BREAKS).

POOL	Frequency	Percent	Cumulative Frequency	Cumulative Percent
ALLIED	502893.8	13.0	502893.8	13.0
AUTO/MEC	63643.23	1.6	566537	14.7
EXPRESS	13701.5	0.4	580238.5	15.0
MANF	350261.2	9.1	930499.7	24.1
MANL	741336.8	19.2	1671836	43.2
MANP	91456.61	2.4	1763293	45.6
MISC	221024.4	5.7	1984317	51.3
REGISTRY	30793.66	0.8	2015111	52.1
Z BREAKS	198920.7	5.1	2214032	57.3
09	1084077	28.0	3298108	85.3
10	452705.6	11.7	3750814	97.0
17	12631.45	0.3	3763445	97.3
24	30773.09	0.8	3794219	98.1
25	7095.653	0.2	3801314	98.3
26	14137.29	0.4	3815451	98.7
6522	51367.88	1.3	3866819	100.0

Response to TW/USPS-T-17-3
Breakdown of BY96 Non-MODS Costs similar to Table 1-4B
TOTAL NONMODS POOL COSTS BY MAIL PROC. POOLS AND
BY IOCS OPERATION CODES FOR NON-MAIL PROC. TALLIES.
MAIL PROC. POOLS DO NOT INCLUDE DISTRIBUTED BREAK TIME COST
WHCIH IS LISTED AS A SEPARATE POOL (I.E. Z BREAKS).

POOL	Frequency	Percent	Cumulative Frequency	Cumulative Percent
ALLIED	527983.1	13.0	527983.1	13.0
AUTO/MEC	66818.39	1.6	594801.5	14.7
EXPRESS	14385.06	0.4	609186.5	15.0
MANF	367735.7	9.1	976922.2	24.1
MANL	778321.9	19.2	1755244	43.2
MANP	96019.37	2.4	1851263	45.6
MISC	232051.3	5.7	2083315	51.3
REGISTRY	32329.95	0.8	2115645	52.1
Z BREAKS	208844.8	5.1	2324489	57.3
09	1138161	28.0	3462651	85.3
10	475291	11.7	3937941	97.0
17	13261.63	0.3	3951203	97.3
24	32308.36	0.8	3983511	98.1
25	7449.654	0.2	3990961	98.3
26	14842.59	0.4	4005804	98.7
6522	53930.62	1.3	4059734	100.0

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

TW/USPS-TI7-4

a. Please apply the logic used to create Tables I-4A and I-4B in LR-106 to the IOCS clerk and mailhandler tallies assigned to each of the following MODS cost pools: LD41, L043, LD44, LD48, LD49 and LD79. Present results in the same manner as is used in tables I-4A and I-4B.

b. Is it fair to conclude that most allied labor performed in Function 4 offices is recorded under LD43?

RESPONSE TO TW/USPS-TI7-4

a. The breakdown of the LD41, LD43, LD44, LD48, LD49 and LD79 MODS cost pools into categories similar to the Non-MODS pools shown in Tables I-4A and I-4B is provided in the two tables attached to this response. The LD48 group includes the LD48 EXP, LD48_ SSV and the 1SUPP_F4 cost pools.

b. This does not seem to be the case. From the two tables provided in response to a. above, the LD43 cost pool share of the total "Allied" cost (row pct) is about 37 percent.

Response to TW/USPS-T17-4
Breakdown of Function 4 LDC Costpools and LDC79 Costpool
Into Non-MODS Categories Exhibited in Tables I-4A
of LR-I-106 - based on IOCS Tally Dollars

TABLE OF POOL BY COSTPOOL

POOL(Non-MODS Categories) COSTPOOL(MODS Cost Pools)

Frequency Percent Row Pct	LD41	LD43	LD44	LD48	LD49	LD79	Total
ALLIED	1439.8 0.09 0.51	102513 6.07 36.59	44747 2.65 15.97	34673 2.05 12.38	15983 0.95 5.71	80802 4.78 28.84	280159 16.59
AUTO/MBC	35009 2.07 73.93	3621.3 0.21 7.65	445.98 0.03 0.94	1613.3 0.10 3.41	4371.1 0.26 9.23	2292.3 0.14 4.84	47353 2.80
EXPRESS	0 0.00 0.00	1566.1 0.09 14.03	577.44 0.03 5.17	8780.5 0.52 78.67	0 0.00 0.00	236.8 0.01 2.12	11161 0.66
MANP	237.34 0.01 0.20	99338 5.88 83.40	10515 0.62 8.83	7652.8 0.45 6.42	690.05 0.04 0.58	683.28 0.04 0.57	119117 7.05
MANL	851.86 0.05 0.36	164748 9.76 69.13	49162 2.91 20.63	20078 1.19 8.43	1516.1 0.09 0.64	1953.6 0.12 0.82	238310 14.11
MANP	0 0.00 0.00	70806 4.19 90.78	1715.8 0.10 2.20	5292.5 0.31 6.79	0 0.00 0.00	187.23 0.01 0.24	78001 4.62
MISC	290.34 0.02 0.08	28635 1.70 7.95	5894.1 0.35 1.64	102388 6.06 28.42	219486 13.00 60.92	3586.7 0.21 1.00	360280 21.33
REGISTRY	0 0.00 0.00	2743.9 0.16 17.14	278.94 0.02 1.74	12809 0.76 79.99	0 0.00 0.00	181.11 0.01 1.13	16013 0.95
Total	46335.7 2.74	615671 36.46	153598 9.10	425763 25.21	293963 17.41	153370 9.08	1688701 100.00

(Continued)

Response to TW/USPS-T17-4
Breakdown of Function 4 LDC Costpools and LDC79 Costpool
Into Non-MODS Categories Exhibited in Tables I-4A
of LR-I-106 - based on IOCS Tally Dollars

TABLE OF POOL BY COSTPOOL

POOL(Non-MODS Categories) COSTPOOL(MODS Cost Pools)

Frequency Percent Row Pct	LD41	LD43	LD44	LD48	LD49	LD79	Total
% BREAKS	5352.4 0.32 3.14	85461 5.06 50.08	15803 0.94 9.26	20446 1.21 11.98	35062 2.08 20.55	8530.9 0.51 5.00	170654 10.11
09	346.5 0.02 0.50	8302.3 0.49 12.09	7515.3 0.45 10.95	49423 2.93 71.99	110.92 0.01 0.16	2954.7 0.17 4.30	68653 4.07
10	2134 0.13 0.86	33332 1.97 13.51	8993.8 0.53 3.65	144295 8.54 58.48	10907 0.65 4.42	47061 2.79 19.07	246722 14.61
17	0 0.00 0.00	107.94 0.01 1.29	414.1 0.02 4.95	5539 0.33 66.21	676.06 0.04 8.08	1628.2 0.10 19.46	8365.3 0.50
24	0 0.00 0.00	886.28 0.05 13.03	3876.9 0.23 57.01	2037.5 0.12 29.96	0 0.00 0.00	0 0.00 0.00	6800.6 0.40
25	0 0.00 0.00	1101.5 0.07 21.10	922.08 0.05 17.66	3197.4 0.19 61.24	0 0.00 0.00	0 0.00 0.00	5221 0.31
26	0 0.00 0.00	327.86 0.02 14.43	232.86 0.01 10.25	1711.2 0.10 75.32	0 0.00 0.00	0 0.00 0.00	2271.9 0.13
6522	674.21 0.04 2.28	12181 0.72 41.13	2503.4 0.15 8.45	5827.5 0.35 19.68	5160.4 0.31 17.42	3270.9 0.19 11.04	29617 1.75
Total	46335.7 2.74	615671 36.46	153598 9.10	425763 25.21	293963 17.41	153370 9.08	1688701 100.00

Response to TW/USPS-T17-4
Breakdown of Function 4 LDC Costpools and LDC79 Costpool
Into Non-MODS Categories Exhibited in Tables I-4B
of LR-I-106 - based on Cost Pool Dollars

TABLE OF POOL BY COSTPOOL

POOL(Non-MODS Categories) COSTPOOL(MODS Cost Pools)

Frequency Percent Row Pct	LD41	LD43	LD44	LD48	LD49	LD79	Total
ALLIED	1051.2 0.07 0.41	93777 6.04 36.46	40314 2.60 15.67	33010 2.13 12.83	14391 0.93 5.60	74655 4.81 29.03	257198 16.58
AUTO/MBC	25560 1.65 69.33	3312.7 0.21 8.99	401.8 0.03 1.09	1537.3 0.10 4.17	3935.6 0.25 10.68	2117.9 0.14 5.75	36865 2.38
EXPRESS	0 0.00 0.00	1432.7 0.09 13.66	520.24 0.03 4.96	8315.7 0.54 79.29	0 0.00 0.00	218.79 0.01 2.09	10487 0.68
MANF	173.28 0.01 0.16	90872 5.86 83.36	9473.8 0.61 8.69	7243.7 0.47 6.64	621.29 0.04 0.57	631.3 0.04 0.58	109016 7.03
MANL	621.93 0.04 0.28	150708 9.71 68.98	44293 2.85 20.27	19681 1.27 9.01	1365.1 0.09 0.62	1805 0.12 0.83	218474 14.08
MANP	0 0.00 0.00	64772 4.17 90.54	1545.8 0.10 2.16	5046.5 0.33 7.05	0 0.00 0.00	172.99 0.01 0.24	71537 4.61
MISC	211.97 0.01 0.06	26194 1.69 7.80	5310.2 0.34 1.58	103390 6.66 30.77	197615 12.74 58.81	3313.8 0.21 0.99	336035 21.66
REGISTRY	0 0.00 0.00	2510.1 0.16 15.72	251.31 0.02 1.57	13038 0.84 81.66	0 0.00 0.00	167.33 0.01 1.05	15967 1.03
Total	33828.8 2.18	563203 36.30	138383 8.92	409711 26.41	264671 17.06	141702 9.13	1551498 100.00

(Continued)

Response to TW/USPS-T17-4
Breakdown of Function 4 LDC Costpools and LDC79 Costpool
Into Non-MODS Categories Exhibited in Tables I-4B
of LR-I-106 - based on Cost Pool Dollars

TABLE OF POOL BY COSTPOOL

POOL(Non-MODS Categories) COSTPOOL(MODS Cost Pools)

Frequency Percent Row Pct	LD41	LD43	LD44	LD48	LD49	LD79	Total
Z BREAKS	3907.6 0.25 2.51	78178 5.04 50.22	14238 0.92 9.15	19891 1.28 12.78	31568 2.03 20.28	7881.9 0.51 5.06	155663 10.03
09	252.97 0.02 0.40	7594.8 0.49 11.86	6770.9 0.44 10.57	46589 3.00 72.75	99.871 0.01 0.16	2729.9 0.18 4.26	64038 4.13
10	1558 0.10 0.68	30491 1.97 13.37	8102.9 0.52 3.55	134559 8.67 59.01	9820 0.63 4.31	43481 2.80 19.07	228012 14.70
17	0 0.00 0.00	98.745 0.01 1.27	373.08 0.02 4.80	5186.5 0.33 66.74	608.7 0.04 7.83	1504.3 0.10 19.36	7771.3 0.50
24	0 0.00 0.00	810.75 0.05 13.08	3492.8 0.23 56.37	1893.1 0.12 30.55	0 0.00 0.00	0 0.00 0.00	6196.7 0.40
25	0 0.00 0.00	1007.7 0.06 20.57	830.74 0.05 16.96	3059.4 0.20 62.46	0 0.00 0.00	0 0.00 0.00	4897.8 0.32
26	0 0.00 0.00	299.92 0.02 13.85	209.8 0.01 9.69	1655.9 0.11 76.46	0 0.00 0.00	0 0.00 0.00	2165.6 0.14
6522	492.22 0.03 1.81	11143 0.72 41.00	2255.4 0.15 8.30	5616.1 0.36 20.67	4646.2 0.30 17.10	3022.1 0.19 11.12	27175 1.75
Total	33828.8 2.18	563203 36.30	138383 8.92	409711 26.41	264671 17.06	141702 9.13	1551498 100.00

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

TW/USPS-TI7-7 Please refer to the IOCS data in file PRC98.sd2 in USPS LR1-12.

a. Please confirm that the file contains FY98 clerk and mailhandler tally data.

b. Please confirm that not a single Non-MODS tally has been assigned activity codes 5610, 5620 or 5700.

c. Please confirm that the FY96 IOCS data used in R97-1 by the Postal Service and the Commission for Non-MODS facilities contained a substantial number of both "not handling" and mixed mail tallies that had been assigned activity codes 5610, 5620 and 5700.

d. Please confirm that in MODS offices, activity codes 5610, 5620 or 5700 have been assigned only in the following cost pools: MISC, SUPPORT, EEQMT, EXPRESS, INTL, LD480TH, LD48ADM, LD48-SSV, LD49 and REWRAP. If not confirmed, please explain.

e. Please confirm that the FY96 IOCS data used in R97-1 by the Postal Service and the Commission for MODS offices contained substantial numbers of both "not handling" and mixed mail tallies that had been assigned activity codes 5610, 5620 and 5700 for practically all cost pools, including the various allied and piece distribution operations.

f. Please explain all changes made by the Postal Service since its R97-1 filing, including computer programming changes and documented or undocumented instructions to IOCS data collectors, that have caused most uses of activity code$ 5610, 5620 and 5700 to disappear. If documentation of such changes exists on the record in this or previous dockets, Please provide all relevant references. If documentation exists that has not been provided earlier, then please provide it.

g. If tallies that previously would have been assigned activity codes 5610, 5620 and 3700 [sic] are now being assigned different codes, please explain which alternative codes are used and the circumstances under which they are used.

h. Does there exist another version of the FY98 IOCS data where activity codes 5610. 5620 and 5700 have been assigned in the same way as in previous dockets? If yes, please provide a copy.

i. Was there a deliberate decision made to no longer assign activity codes 5610, 5620 or 5700 for Non-MODS tallies or for MODS tallies at allied and piece distribution operations? If yes, please explain all reasons why this decision was made and by whom it was made.

j Apart from the apparent change in the assignment of activity codes 5610, 5620 and 3700 from Question 19 responses by IOCS data collectors, have there been

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

other changes made in the way that activity codes are assigned to IOCS tallies on the basis of the raw data? If there are other such changes, please document them in detail.

RESPONSE TO TW/USPS-T-17-7.

This question erroneously assumes that changes in either data collection and/or computer programming have caused instances of activity codes 5610, 5620, and 5700 to "disappear." In reality, activity codes 5610, 5620 and 5700 are assigned to the tallies in the PRC98.sd2 file in USPS LR-I-12 as they were in Docket No. R97-1, however, they are now stored in the tally field F9806. The assignment of these codes is otherwise unchanged from Docket No.R97-1.

Please note that the mixed shape activity codes 5610, 5620, and 5700 are not based on collected mixed mail shape data. They are assigned by Program ALB101S1[1] to all tallies with activity code 5750[2], based on the predominant shape of the piece distribution operation where the employee was observed to be in Question 19

a. Confirmed.

b. Not confirmed. See the discussion prior to the response to part a, above.

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[1] Program ALB101S1 documentation is contained in USPS-LR-I-12, section VII.A, and the program listing itself is contained on the CD-ROM accompanying USPS-LR-I-12, as described in Appendix H of USPS-LR-I-12. The assignment of 5610, 5620, and 5700 occurs in the SAS data step "data tally101" which immediately follows the comment:

```
* 5. Assign shape related activity codes to mixed all    ;
*    shapes based on operation codes.                    ;
*-------------------------------------------------------;
```

[2] Those tallies include all tallies with activity codes 5750 in IOCS field F244, as well as those with activity codes 5740 and 5745, which the program recodes as 5750.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

c. Confirmed that activity codes 5610, 5620, and 5700 were also assigned to tallies taken at non-MODS facilities in Docket No. R97-1.

d. Not confirmed. See the discussion prior to the response to part a, above.

e. Confirmed that activity codes 5610, 5620, and 5700 were also assigned to tallies taken at MODS facilities in Docket No. R97-1.

f. See the discussion prior to the response to part a, above.

g. See the discussion prior to the response to part a, above.

h. See the discussion prior to the response to part a, above.

i. See the discussion prior to the response to part a, above.

j. See the discussion prior to the response to part a, above.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

TW/USPS-TI7-8 Does there exist a version of the aggregated FY98 IOCS data containing the actual responses to Question 19? If yes, please provide it and identify the field(s) in which the Question 19 data are located. If such a file already has been provided on the record, please refer to it.

RESPONSE TO TW/USPS-TI7-8

The PRC98.sd2 file in USPS LR-I-12 contains the actual responses to Question 19.

They are located in IOCS fields F128, F9211 and F9212. My responses to TW/USPS-T-17-2 c & d indicate the sections of the library reference which contain information relevant to these fields.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

TW/USPS-TI7-9 Please tabulate the results of Question 19 responses by IOCS data collectors in the base year as instructed below. Please provide the information in the form of an electronic spreadsheet, separately for each MODS, Non-MODS and BMC cost pool, and in terms of number of tallies as well as tally dollars.

a. For all "not handling" tallies at a given pool, excluding tallies related to breaks, clocking in/out or handling empty equipment, please tabulate the responses to Question 19 in all cases where the data collector responded to this question. Specifically, tabulate the number of tallies and corresponding tally dollars for each response A through U in the first table on page 11-30 in LR-I-14, and in case the choice made was A (manual) provide a further breakdown according to responses a through i listed in the second table on page 11-30 of LR-1-14.

b. For all "not handling" tallies at a given pool with activity code 6323 (empty equipment) where the data collector also responded to Question 19, please provide a tabulation of those responses similar to that explained in part a of this interrogatory.

c. For all "mixed mail" tallies representing empty equipment (or unidentified container) handling at a given pool, where the data collector also responded to Question 19, please provide a tabulation of those responses similar to that explained in part a of this interrogatory, but separately for each type of container or item.

d. For all "mixed mail" tallies representing handling of non-empty containers at a given pool, where the data collector also responded to Question 19, please provide a tabulation of those responses similar to that explained in part a of this interrogatory, but separately for each type of container.

RESPONSE TO TW/USPS-TI7-9

(a)-(d) The requested tables in EXCEL format are contained in the diskette filed in USPS-LR-I-222. Please note that the responses to a. and b. are consolidated into the same table.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

TW/USPS-TI7-10 Does your mail processing cost distribution make any use of the activity codes 5610, 5620 or 5700 for some mixed mail and not handling tallies at any of these cost pools: MISC, SUPPORT, EEQMT, EXPRESS, INTL, LD480TH, LD48ADM, LD48-SSV, LD49 and REWRAP? If yes, please explain how you use this information.

RESPONSE TO TW/USPS-TI7-10.

No.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

TW/USPS-TI7-11. For each mail processing cost pool and for each type of sack represented in the IOCS data base, please provide, in an electronic spreadsheet format, the BY98 processing costs your method attributes to use of the given sack type, at the given pool, by each subclass. Please also specify the portion of the cost attribution for each combination of sack type, cost pool and subclass that is caused by each of the following types of tallies:

a. Direct tallies of the given sack type at the given pool.
b. Mixed mail tallies of the given sack type that are distributed on the basis of the direct sack tallies.
c. Tallies of the given sack type when empty, that are distributed based on the direct sack tallies.
d. Tallies of mixed mail containers recorded as carrying sacks of the given type, attributed on the basis of direct mail tallies for the given sack type.
e. Tallies of empty or unidentified containers, whose costs are attributed based on the portion of the corresponding type of containers with mail that relates to these containers carrying sacks of the given type.
f. Not handling tallies, to the extent that the costs associated with such tallies are distributed over any of the sack related handling costs described above.

RESPONSE TO TW/USPS-TI7-11.

(a) – (f). The volume-variable costs for the requested data for TW/USPS-T17-11, for TW/USPS-T17-12 and for TW/USPS-T17-13, are contained in the diskette filed in USPS LR-I-234. The data are SAS output tables in text format. There are seven text files in the diskette. The first six text files correspond to the six questions (a) - (f) whereby for each question, the data in each file are shown by subclass and by cost pool, for each type of sack, each type of tray and for pallets. Please note that three cost pools are not included in the first six text files: the LDC15 cost pool (LD15), and the two support cost pools for Function 1 and Function 4 (1SUPPORT_F1 and 1SUPPORT_F4). For these three cost pools, the derivation of the distribution keys (based on dollar-weighted tallies, and then applied to the pool volume-variable costs for

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

RESPONSE TO TW/USPS-TI7-11 (continued).

all cost pools except those three), does not quite fit the steps underlying (a) –(f) (See footnote 10 and section II-B-4 of my testimony). The applicable volume-variable costs for the LDC 15 cost pool are provided as a separate table in the seventh text file. The subclass distribution factor for the 1SUPPORT_F1 cost pool and for the mail processing component of the 1SUPPORT_F4 cost pool can be obtained by: 1) summing the volume-variable costs provided in the diskette for the relevant cost pools (see section II-B-4 of my testimony); and 2) dividing the numbers from 1) by the corresponding pool volume-variable costs from Table 3 of my testimony. The subclass distribution factor for the window service component of the 1SUPPORT_F4 cannot be obtained at the same level of detail underlying questions 11 through 13 (a) – (f), as for the mail processing component of it.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

TW/USPS-TI7-12. Please provide cost information similar to that sought in TW/USPS-TI7-1 1, but for each type of trays, rather than sacks.

RESPONSE TO TW/USPS-TI7-12.

See my response to TW/USPS-T17-11.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

TW/USPS-TI7-13. Please provide cost information similar to that sought in TVVIUSPS-TI 7-1 1, but for pallets instead of sacks.

RESPONSE TO TW/USPS-TI7-13.

See my response to TW/USPS-T17-11.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

TW/USPS-TI7-14. Please consider an employee sampled by an IOCS clerk while using a forklift to move a pallet that is loaded with empty letter trays.

a. Please confirm that under current data collection instructions the IOCS clerk has no way of recording the fact that the observed pallet was used to carry letter trays. See my response to TW/USPS-T17-11.If not confirmed, please describe how such information would be recorded and how it would appear in the IOCS data base.
b. Please confirm that a tally resulting from the type of observation described above would not cause any cost to be associated with letter trays. If not confirmed, please explain.
c. How would the IOCS clerk record the situation described above? Specifically, would he/she record it as: (1) an empty pallet; (2) a pallet whose content could not be determined; or (3) something else (describe)? Are the current instructions clear as to what choice should be made in this situation?
d. Assume that instead of being empty, the trays on the pallet contain letter mail, but the IOCS clerk is unable to determine whether all mail on the pallet is identical and concludes that counting the mail would require removing the shrink wrap or banding on the pallet and would be prohibitively time consuming. What type of tally would result in this case? Would it be recorded as a mixed mail pallet? if not, how?

RESPONSE TO TW/USPS-TI7-14.

a. Redirected to Witness Ramage (USPS-T-2).

b. Not confirmed.

If this is considered an IOCS single item and is recorded as an empty pallet, then the tally cost for the empty pallet is distributed based on the subclass contents of the direct tally pallets. To the extent that some direct tally pallets may be loaded with some letter trays and that all subclass pieces on these pallets are counted and recorded during the IOCS reading, the tally cost for the empty pallet may be distributed to the subclasses in the letter trays on those direct tally pallets, even though the letter trays are not explicitly recorded.

If this is considered an IOCS container, and is recorded either as an empty "j. Other Container", or as "i. Multiple items not in container", then the tally cost for the

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

RESPONSE TO TW/USPS-TI7-14 (continued).

recorded empty or unidentified container is distributed based on the subclasses of the loose piece and item contents of a non-empty identified container of the same type. To the extent that letter trays are recorded as one of the item contents of non-empty identified containers under IOCS option (i) or (j), the tally cost for the empty or unidentified container recorded under IOCS option (i) or (j), is then distributed based on subclasses that include those associated with letter trays for non-empty identified containers of the same type.

(c) – (d). Redirected to Witness Ramage (USPS-T-2).

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

TW/USPS-TI7-16. In today's mail processing plants, including BMC'S, one frequently sees pallets carrying empty trays, empty sacks, trays with letter or flat mail in them, sacks with mail in them, pallets loaded with other empty pallets, as well of course as pallets loaded with flats bundles, parcels, IPP'S, etc.

a. Has there been any recent study to determine the frequency with which each of the above occurs in different types of facilities? If yes, please identify each such study, summarize the results and provide copies of each relevant study report.

b. Please identify all uses the Postal Service itself makes of pallets in today's environment, to transport mail as well as other items (e.g., sacks and trays). Indicate whether each type of usage is part of normal operating procedures or whether it occurs only in unusual circumstances. Please also indicate the types of facilities in which each type of usage occurs, any estimates of how frequently it occurs, and provide copies of any relevant operating instructions.

RESPONSE TO TW/USPS-TI7-16.

a. I am not aware of any such study.

b. Redirected to Witness Kingsley (USPS-T- 10).

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

TW/USPS-TI7-17 There appear to be 453 IOCS tallies for mail processing in MODS offices, with a combined tally dollar value of $22.729 million, that are shown as "not handling" but have assigned activity codes 30, 50, 60 and 90. Such tallies appear in the four "support" pools (I Misc, I Support, LD48-Adm and LD480th) as well as in pools BusReply, Express, Intl, LD48-SSV, and Registry.

a. Please confirm the above figures, or if incorrect please correct them.
b. Why is the "not handling" designation used with activity codes that normally represent direct tallies?

RESPONSE TO TW/USPS-TI7-17.

a. Confirmed.

b. Please see Chapter 11 of Handbook F-45, In-Office Cost System, Field Operating Instructions filed in USPS LR-I-14, Question 20, Option C on p.11-34 and p.11-35).

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

TW/tUSPS-TI7-18. Please refer to Table I and Table 1-4B in LR-1-1 06, and your answer to TW/USPS-TI7-2d and e.

a. Confirm that in order to transform the breakdown of NonMODS mail processing costs into cost pools that is shown in Table 1-4B to the breakdown into eight cost pools shown in part 2 of Table 1, you simply distributed the costs from the ZBREAKS pool, formed from the tallies with activity code 6521 (breaks/personal needs), proportionately among the other eight pools. If not confirmed, which method did you use?
b. Confirm that you did not use any Question I8 or Question 19 data to distribute the ZBREAKS costs. If not confirmed, what information did you use and how?
c. Confirm that the portions of the ZBREAKS costs that are distributed to other pools are as shown below. If not confirmed, please give correct figures.

ALLIED	55,211,285
AUTO/MEC	14,025,832
EXPRESS	1,871,710
MANF	46,806,559
MANL	69,155,339
MANP	12,383,701
MISC	25,256,203
REGISTRY	2,904,047
Total ZBREAKS Costs	227,614,677

d. Assume that instead of a proportional distribution of the NonMODS break time costs you had distributed those costs by applying Question 18 and Question 19 data for the break time tallies in the same way as you did for other tallies. Please show what the distribution of ZBREAKS costs to NonMODS cost pools, and the distribution of NonMODS volume variable costs to subclasses and special services, would be in that case.

RESPONSE TO TW/tUSPS-TI7-18.

a. Confirmed.

b. Confirmed if you mean, as in d. below, that I did not use Questions 18 or 19 for the break time tallies as I did for the other tallies. Please note that because the Non-Mods cost pools are based on Questions 18 or 19, a proportional distribution of the ZBREAKS costs based on these cost pools carries an association with Questions 18 and 19.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

RESPONSE TO TW/tUSPS-TI7-18 (continued).

c. confirmed.

d. The attached Table 1 shows a comparison of the distributed ZBREAKS costs to NonMODS cost pools between between the USPS BY 98 method (where the ZBREAKS costs are proportionately distributed among the other eight pools) and the method described in TW/USPS-T17-18d (where the ZBREAKS costs are distributed based on Questions 18 and 19).

The attached Table 2 provides a comparison of the volume-variable mail processing costs for subclasses and special services between the USPS BY 98 method (where the ZBREAKS costs are proportionately distributed among the other eight pools) and the method described in TW/USPS-T17-18d (where the ZBREAKS costs are distributed based on Questions 18 and 19).

Response to TW/USPS-T17-18d. Table 1				
	Distributed ZBREAKS Costs		Total Pool Costs	
Non-MODS Pools	Proportional Distribution of Zbreaks	Method Described in TW-T17-18d	Proportional Distribution of Zbreaks	Method Described in TW-T17-18d
Allied	55,211	37,743	609,324	591,856
Auto/Mec	14,026	11,035	154,792	151,801
Express	1,872	478	20,657	19,263
Manf	47,509	47,624	516,567	516,682
Manl	69,156	96,855	763,214	790,913
Manp	12,383	15,871	136,669	140,157
Misc	25,256	16,655	278,733	270,132
Registry	2,904	2,056	32,050	31,202
Total	228,317	228,317	2,512,006	2,512,006

Response to TW/USPS-T17-18d. Table 2				
	Non-MODS Volume-Variable Costs			
Subclasses	Proportional Distribution of Zbreaks	Method Described in TW-T17-18d	Difference	Percent
	(a)	(b)	(b) - (a)	(b - a)/a
First-Class Mail:				
Single Piece Letters	979,647	986,656	7,009	0.7%
Presort Letters	257,466	258,457	991	0.4%
Single Piece Cards	32,822	33,579	757	2.3%
Presort Cards	11,583	11,822	239	2.0%
Total First	1,281,518	1,290,514	8,996	0.7%
Priority Mail	118,259	118,355	96	0.1%
Express Mail	14,423	13,685	(738)	-5.4%
Periodicals				
In-County	5,378	5,403	25	0.5%
Outside C. - regular	127,642	126,655	(987)	-0.8%
Outside C. - non Prof	19,261	18,998	(263)	-1.4%
Outside C. - Classrm	1,489	1,483	(6)	-0.4%
Total Second	153,770	152,539	(1,231)	-0.8%
Standard Mail (A)				
Single Piece Rate	16,045	15,868	(177)	-1.1%
Commercial Standard				
Enhanced Carrier Route	78,440	77,230	(1,210)	-1.6%
Regular	452,110	453,604	1,494	0.3%
Total Commercial	530,550	530,834	284	0.1%
Aggregate NonProfit				
Enhanced Carrier Route	8,711	8,642	(69)	-0.8%
NonProfit	82,300	83,269	969	1.2%
Total Non-Profit	91,011	91,911	900	1.0%
Total Standard (A)	637,606	638,613	1,007	0.2%
Standard Mail (B)				
Parcel Zone-Rate	39,931	39,704	(227)	-0.6%
Bound Printed Matter	19,321	19,285	(36)	-0.2%
Special 4th Class	9,548	9,609	61	0.6%
Library Rate	2,054	2,057	3	0.1%
Total Standard (B)	70,854	70,655	(199)	-0.3%
U.S. Postal Service	19,630	19,468	(162)	-0.8%
Free - Blind & Hndc - S	3,059	3,029	(30)	-1.0%
International	10,242	10,306	64	0.6%
Special Services				
Registered	3,988	3,833	(155)	-4.0%
Certified	16,843	15,453	(1,390)	-9.0%
Insured	538	494	(44)	-8.9%
COD	322	296	(26)	-8.8%
Other Services	7,712	7,075	(637)	-9.0%
Total Special services	29,403	27,151	(2,252)	-8.3%
TOTAL	2,338,764	2,344,315	5,551	0.2%

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

TW/USPS-T17-20 The MODS mail processing "not handling" tallies appear to include tallies showing window service activities, represented by activity codes 5020-5195 and 6000-6200, with a total "tally dollar" value of $79.63 million. This includes $12.48 million in Function I cost pools with the rest in Function 4 pools.

a. Please confirm the above numbers.
b. What are the volume variable costs represented by these tallies?
c. What portion of these costs is attributed to each Periodicals subclass under your distribution method?

RESPONSE TO TW/USPS-T17-20.

a. Not confirmed for $79.63 million: it should be $76.63 million in tally dollar for the not-handling tallies with activity codes 5020-5195 and 6000-6200. Confirmed for $12.48 million in Function 1 cost pools.

b. The costs for these tallies are 100% volume-variable in all cost pools where the econometric volume-variability factors were not derived in BY98. For the twelve cost pools where the volume-variability factors were econometrically derived, the not-handling tallies are not considered separately and have no role: the total pool volume-variable cost is multiplied by the pool distribution key, which is based on the handling tallies. If we assume these not-handling tallies to represent a proportion of the total cost in each these twelve cost pools, and if we assume the pool volume-variability factor applies to these costs, then the "volume-variable" costs associated with not-handling tallies with activity codes 5020-5195 and 6000-6200 amount to $69.85 million in total, with $10.28 million in Function I cost pools.

c. The volume-variable costs associated with the not-handling tallies with activity codes 5020-5195 and 6000-6200 are distributed to each Periodicals subclass as follows:

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

RESPONSE TO TW/USPS-TI7-20 (continued).

	(in million)
In-County	$ 0.119
Outside County Regular	$ 2.738
Outside County Non-Profit	$ 0.549
Outside County Classroom	$ 0.021
TOTAL	$ 3.427

For (a)-(c) , please refer to pp. 55-58, Section III A. and B. of witness Degen's testimony (USPS-T-16) for a discussion of the 'migrated' tallies

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

TW/USPS-TI7-21 What are the accrued and volume variable costs associated with not handling tallies with activity codes equal to, respectively, 6220 (Special Delivery), 6230 (Registry) or 6231 (Express Mail)? Please also indicate what portion of these costs is attributed to Periodicals mail under your methodology.

RESPONSE TO TW/USPS-TI7-21

The MODS accrued costs associated with not-handling tallies with activity codes 6220, 6230, and 6231 are respectively $4.017 million, $60.892 million and $39.997 million. For all cost pools where the volume-variability factors were not econometrically derived, the costs associated with those three activity codes are considered fixed (see USPS-LR-I-106, Part II C, Description of SAS Programs, Section 2, MOD1VARB, p.II-41). For the twelve cost pools where the volume-variability factors were econometrically derived, and given the assumptions stated in my response to TW/USPS-T17-20 b, the "volume-variable" costs associated with activity codes 6220, 6230 and 6231 total to $1.215 million. The portion of these volume-variable costs which is distributed to Periodicals amounts to $0.032 million.

RESPONSE OFUNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTTEROGATORIES

TW/USPS-TI7-22 Please refer to Table 1-4B in LR-106 and your response to TW/USPS-TI7-3 which produced a similar table using FY96 data. The table below lists the accrued FY96 and FY98 cost in each NonMODS cost pool, as well as the percent change in each cost pool.

NonMODS Mail Processing Cost Pools ($1,000's) BY96 & BY98

POOL	BY96	BY98	Change (%)
ALLIED	527,983	554,113	4.95%
AUTO/MEC	66,818	140,766	110.67%
EXPRESS	14,385	18,785	30.59%
MANF	367,736	469,761	27.74%
MANL	778,322	694,058	-10.83%
MANP	96,019	124,286	29.44%
MISC	232,052	253,477	9.23%
REGISTRY	32,330	29,146	-9.85%
Z BREAKS	208,845	227,615	8.99%
TOTAL	2,324,491	2,512	8.07%

a. Please confirm the numbers in the table, or if incorrect please explain, and give corrected figures.
b. Please confirm that the cost of manual flat sorting in NonMODS offices increased by $102 million, not including break time or clocking in\out costs, and that the percentage increase was 27.74%. If not confirmed, please explain, and give corrected figures.
c. Please confirm that in the same period (FY96 through FY98) the combined cost of FSM and manual flat sorting in MODS Function 1 offices increased by $250.485 million, or 20 percent. If not confirmed, please explain, and give corrected figures.

RESPONSE TO TW/USPS-TI7-22.

a. Confirmed.

b. Confirmed for the MANF cost pool in Non-MODS offices.

c. Confirmed, for the Function 1 FSM/ and MANF/ cost pools in MODS offices.

Please note that some changes between BY 96 and BY 98 may have a potential impact on the results seen in (a)-(b): see p.4 of the response of United States Postal Service Witness Smith to Presiding Officer's Information Request No.4 that relates to the IOCS weighting factors.

RESPONSE OFUNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTTEROGATORIES

TW/USPS-TI7-23. Please refer to your answer to TW/USPS-TI7-4, in which you provided a tabular breakdown of Function 4 MODS cost pools into the same type of cost pools that you use to analyze NonMODS costs. The MANF components add up to $109.016 million, excluding break time costs.

a. Please provide a corresponding breakdown of Function 4 cost pools into NonMODS type pools, but using FY96, rather than FY98, data.
b. Apart from the FSM and MANF components of Function 1 costs, the MANF components of the Function 4 cost pools and the MANF component of the NonMODS costs, are there any other pools or parts of pools that represent flat sorting in the postal system? If yes, what are they and what were their combined flat sorting costs in FY96 and FY98?

RESPONSE TO TW/USPS-TI7-23

a. A breakdown of Function 4 cost pools into NonMODS type pools for BY96 data is provided in the attached table.

b. It is my understanding that, other than the cost pools enumerated in the interrogatory, there are no other cost pools that represent the Postal Service's piece sorting operations for flats. See also pp. 35-36 of witness Degen's testimony (USPS-T-16). Of course, flats are handled in many other mail processing operations, notably (but not only) the allied labor cost pools. For details on costs for flat-shaped mail by cost pool and subclass, please see pp. III-12 to III-20 of LR-I-106 filed in Docket No. R2000-1, and pp.III-7 to III-9 of LR-H-146 filed in Docket No. R97-1.

Response to TW/USPS-T17-23a.
Breakdown of Function 4 LDC Costpools and LDC79 Costpool
Into Non-MODS Categories Exhibited in Tables I-4B
of LR-I-106 - based on Cost Pool Dollars

TABLE OF POOL BY COSTPOOL

POOL(Non-MODS Categories) COSTPOOL(MODS Cost Pools)

Frequency Percent Row Pct	LD41	LD43	LD44	LD48	LD49	LD79	Total
Z BREAKS	1804.4 0.13 1.23	70841 4.92 48.31	12202 0.85 8.32	22903 1.59 15.62	32314 2.24 22.04	6564.2 0.46 4.48	146629 10.19
09	0 0.00 0.00	22904 1.59 26.39	6207.3 0.43 7.15	55254 3.84 63.66	204.89 0.01 0.24	2221.3 0.15 2.56	86792 6.03
10	886.84 0.06 0.44	27789 1.93 13.89	6084.8 0.42 3.04	114271 7.94 57.11	7264.8 0.50 3.63	43802 3.04 21.89	200099 13.90
17	0 0.00 0.00	874.33 0.06 11.21	181.83 0.01 2.33	4198.6 0.29 53.82	587.51 0.04 7.53	1959.4 0.14 25.11	7801.7 0.54
24	0 0.00 0.00	1408.4 0.10 16.37	4115.2 0.29 47.85	3077.4 0.21 35.78	0 0.00 0.00	0 0.00 0.00	8601 0.60
25	0 0.00 0.00	1004.1 0.07 22.96	1166.4 0.08 26.67	2153.9 0.15 49.25	0 0.00 0.00	48.922 0.00 1.12	4373.3 0.30
26	0 0.00 0.00	402.9 0.03 14.77	445.06 0.03 16.32	1879.7 0.13 68.91	0 0.00 0.00	0 0.00 0.00	2727.6 0.19
6522	341.8 0.02 1.47	9563.5 0.66 41.25	1875 0.13 8.09	4856.1 0.34 20.95	4470.5 0.31 19.28	2076 0.14 8.95	23183 1.61
Total	18541.6 1.29	521570 36.23	126758 8.81	385579 26.78	252327 17.53	134835 9.37	1439610 100.00

Response to TW/USPS-T17-23a
Breakdown of Function 4 LDC Costpools and LDC79 Costpool
Into Non-MODS Categories Exhibited in Tables I-4B
of LR-I-106 - based on Cost Pool Dollars

TABLE OF POOL BY COSTPOOL

POOL(Non-MODS Categories) COSTPOOL(MODS Cost Pools)

Frequency Percent Row Pct	LD41	LD43	LD44	LD48	LD49	LD79	Total
ALLIED	1143.1 0.08 0.46	97355 6.76 39.38	35956 2.50 14.55	33428 2.32 13.52	8616 0.60 3.49	70698 4.91 28.60	247196 17.17
AUTO/MEC	14000 0.97 43.19	13370 0.93 41.25	209.6 0.01 0.65	1306.8 0.09 4.03	1916.5 0.13 5.91	1612 0.11 4.97	32416 2.25
EXPRESS	0 0.00 0.00	2041.3 0.14 21.03	299.91 0.02 3.09	7117.4 0.49 73.33	0 0.00 0.00	246.8 0.02 2.54	9705.4 0.67
MANF	66.293 0.00 0.08	64907 4.51 80.72	8429 0.59 10.48	6428.5 0.45 7.99	414.33 0.03 0.52	164.47 0.01 0.20	80410 5.59
MANL	298.75 0.02 0.15	135565 9.42 66.67	43607 3.03 21.44	21446 1.49 10.55	664.78 0.05 0.33	1767 0.12 0.87	203348 14.13
MANP	0 0.00 0.00	43397 3.01 87.87	1348.4 0.09 2.73	4323.2 0.30 8.75	0 0.00 0.00	316.55 0.02 0.64	49385 3.43
MISC	0 0.00 0.00	27154 1.89 8.51	4262.3 0.30 1.34	88730 6.16 27.80	195873 13.61 61.38	3106.3 0.22 0.97	319126 22.17
REGISTRY	0 0.00 0.00	2993.5 0.21 16.80	368.09 0.03 2.07	14205 0.99 79.72	0 0.00 0.00	251.68 0.02 1.41	17819 1.24
Total	18541.6 1.29	521570 36.23	126758 8.81	385579 26.78	252327 17.53	134835 9.37	1439610 100.00

(Continued)

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

TW/USPS-TI7-26 Please refer to your answer to TW/USPS-TI7-20b, in which you say, referring to the window service related not handling costs in mail processing related costs pools:

"The costs for these tallies are 100% volume-variable in all cost pools where the econometric volume-variability factors were not derived in BY98."

a. Please confirm that the mail processing cost pools with the largest number of window service related not handling tallies are LD48-ADM, LD48 OTH, LD44 and L043, in that order. If not confirmed, please explain.

b. Please confirm that none of the pools listed in part a above have econometrically determined volume variability factors in this docket, but that the IOCS based volume variability factor is less than 100% for each pool.

c. Does your statement quoted above mean that in assigning IOCS based volume variability factors for the pools without econometrically determined factors, you assumed 100% variability for the portion in each pool that consists of window service related tallies? If not, please explain.

d. If, for example, the LD48 - ADM pool has a volume variability factor of 0.534, and the window service related component within that pool is considered 100% volume variable, does it then follow that the average variability for the remaining components within the pool must be less than 0.534? If not, please explain.

e. Is the determination of IOCS based volume variability factors for pools without econometrically determined factors based on the activity codes for the costs within each pool? If not, please explain precisely what these factors are based on. If so, is any other information besides activity codes used to determine this variability?

f. Please specify, for each IOCS activity code, how tallies with that code contribute to the IOCS based volume variability of the pools the tallies are in. In particular, which activity codes are assumed to correspond to fixed costs, which are assumed to represent 100% volume variable costs, etc.?

g. Are break time and clocking in/out tallies in fact ignored in the process of assigning IOCS based volume variability factors to individual pools? If not, what role do they play in determining volume variability? Which other types of tallies (by activity code) are ignored in determining IOCS based variability factors?

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

RESPONSE TO TW/USPS-TI7-26

a. Confirmed - see the dollar-weighted tallies for these cost pools relative to all other cost pools in the attached table to this question. It is my understanding that the presence of a relatively large number of tallies with window-related activity codes in LDC 48 is symptomatic of the operational basis for including window service costs in the Function 4 Support distribution key described by witness Degen at pp.57-58 (USPS-T-16).

b. Confirmed.

c. Yes, I made the 100% variability assumption when I applied the pre-R97-1 method without adjusting for the so-called "migrated" costs at MODS offices, consistently with witness Degen's treatment of the "migrated" tallies (see pp. 55-58 of his testimony). In following this procedure, tallies with activity codes 5020-5195 and 6000-6200 are neither "overhead" nor "fixed" tallies. Consequently, they are included in the 100% volume-variable category of activity codes.

d. Yes, if we were to remove the tallies with activity codes 5020-5195 and 6000-6200 from the cost pool.

e. *In response to the first part of your question,* yes, the volume variability factors are based on the activity codes (see section II.B.2 of my testimony. and my response to AAP/USPS-T17-6c).

In response to the second part of your question, no, no other information besides activity codes are used to determine the volume-variability factor.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES

RESPONSE TO TW/USPS-T17-26 (continued)

f. Please refer to USPS-LR-H 1 filed in Docket No. 97-1 and my response to e. above.

g. In response to the first part of your question, yes, the overhead tallies are ignored in the computation of the volume-variability factor for the cost pool. But they are not ignored in the pool volume-variable costs. When the pool cost (which includes the overhead costs) is multiplied by the volume-variability factor, the volume-variable portion of the overhead costs is included in the resulting pool volume-variable costs that get distributed to the subclasses. Note that the same pool volume-variable costs can be obtained by adding the total pool costs associated with the 100 percent volume-variable activity codes, and the pool volume-variable overhead costs obtained by multiplying the pool total overhead costs by the pool volume-variability factor.

In response to the second part of your question, no tallies, other than the overhead tallies, are excluded from the computation of the IOCS based variability factors.

Table Provided in Response to TW/USPS-T17-26a.

Dollar-weighted Tallies by Pool and for actv=5020-5195, 6000-6200 within each Pool

SAS code	MODS 1 & 2 Facilities Cost Pool title	Total Pool Dollar-Weighted Tallies (a)	Percent (c) / (a)	Dollar-Weighted Tallies for actv= 5020-5195, & 6000-6200 (c)
	Automated Equipment			
BCS/	BCS, BCS on OCR	1,075,041	0.0%	41
OCR/	OCR	230,236	0.1%	117
	Mechanized, Letters & Flats			
FSM/	SPFSM, FSM & FSM/BCR	948,037	0.1%	809
LSM/	LSM,MPLSM & SPLSM W/BCR	78,093	0.1%	52
	Mechanized, Other			
1SACKS_M	Mechanical Sort - Sack Outside	55,885	0.0%	-
MECPARC	Mechanized Parcels	13,946	0.5%	70
SPBS OTH	SPBS - Non Priority	296,736	0.1%	246
SPBSPRIO	SPBS - Priority	78,593	0.1%	86
	Manual Distribution Operations			
MANF	Manual Flats	460,877	0.1%	419
MANL	Manual Letters	1,538,123	0.2%	3,677
MANP	Manual Parcels	73,211	0.1%	52
PRIORITY	Manual Priority	187,612	0.2%	321
LD15	**LDC 15 - RBCS**	23,608	0.0%	-
	Allied Operations			
1SCAN	Air Contract DCS and Incoming	55,589	0.0%	15
1BULKPR	Bulk Presort	15,060	1.4%	213
1CANCMPP	Cancellation & Mail Preparation - metered	311,888	0.2%	616
1SACKS_H	Manual Sort - Sack Outside	155,581	0.0%	67
1OPPREF	Opening Unit - Preferred Mail	686,360	0.1%	666
1OPBULK	Opening Unit - BBM	267,930	0.1%	184
1PLATFRM	Platform	1,060,393	0.0%	237
1POUCHG	Pouching Operations	424,928	0.0%	124
	Other Operations			
BUSREPLY	Business Reply / Postage Due	37,754	0.0%	-
REWRAP	Damaged Parcel Rewrap	15,862	0.0%	-
1EEQMT	Empty Equipment	49,363	0.0%	-
EXPRESS	Express Mail	94,035	1.0%	943
MAILGRAM	Mailgram	334	15.6%	52
1SUPPORT	Mail Processing Support	212,943	0.6%	1,323
1MISC	Miscellaneous Activity	142,997	0.8%	1,202
REGISTRY	Registry	158,703	0.3%	425
INTL	International	130,155	0.4%	526
LD41	LDC 41 - Unit Distribution - Automated	46,336	0.5%	219
LD42	LDC 42 - Unit Distribution - Mechanized	9,168	3.2%	290
LD43	LDC 43 - Unit Distribution - Manual	615,671	1.3%	7,801
LD44	LDC 44 - Post-Office Box Distribution	153,598	5.3%	8,100
LD48 EXP	LDC 48 - Customer Service / Express	4,400	5.3%	231
LD48_ADM	LDC 48 - Customer Service / Admin	175,576	12.7%	22,358
LD48_SSV	LDC 48 - Customer Service / Spec.Servc.	94,741	5.4%	5,158
LD48 OTH	LDC 48 - Customer Service / Other .	151,047	11.9%	18,034
LD49	LDC 49 - Computerized Forwarding Syst.	293,963	0.0%	-
LD79	LDC 79 - Mailing Req' & Bus. Mail Entry	153,370	1.3%	1,957
	MODS 1 & 2 Subtotal	10,577,743	0.7%	76,631

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO TW INTERROGATORIES
(Redirected from Witness Ramage, USPS-T-2)

TW/USPS-T2-3. Please refer to your answers to TW/USPS-T17-14a, c and d, to TW/USPS-T17-15 and to TW/USPS-T2-1-2. Please confirm each of the following or, if not confirmed, please explain.

* * *

* * *

c. All volume variable costs associated with tallies showing handling of empty pallets will be distributed to subclasses, under the current USPS methodology, based on the direct costs from direct tallies showing the handling of pallets.

d. No volume variable costs associated with tallies showing handling of empty pallets will be distributed to subclasses, under the current USPS methodology, based on the direct costs from direct tallies showing the handling of "multiple items not in a container" or of postal paks.

RESPONSE TO TW/USPS-T2-3.

c. Confirmed.

d. Confirmed.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO UPS INTERROGATORIES

UPS/USPS-T17-1. Identify all instances in which you have relied on or used in your testimony in any way any FY 1999 cost, revenue, volume, or other data, and state in each such instance why you used FY 1999 data instead of data for BY 1998.

RESPONSE TO UPS/USPS-T17-1.

There were no such instances, to the best of my knowledge.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS VAN-TY-SMITH TO UPS INTERROGATORIES
Redirected from Witness Degen (USPS-T16)

UPS/USPS-T16-8. Refer to your response to interrogatory UPS/USPS-T16-7.

a. With respect to your reference to witness Van-Ty-Smith's response to TW/USPS-T17-4, provide all SAS programs used to create the tables referenced in response to TW/USPS-T17-4 in hard copy and electronic format.

b. Describe in detail how the LDC cost pools were separated into the non-MODS cost pool classifications.

* * *

RESPONSE TO UPS/USPS-T16-8.

a. The tables provided in response to TW/USPS-T17-4 can be generated by the following SAS programs:

1) MBC
2) MOD1POOL
3) a modified version of NONMOD1 – which is applied to the MODS Function 4 LDC cost pools created by program MOD1POOL
4) DOLWGT – which is invoked in the modified program cited in 3) above.

Programs MBC, MOD1POOL DOLWGT and NONMOD1 are already available from one of the two diskettes filed in USPS-LR-I-106. The attachment to this response provides a hard copy of the modified version of NONMOD1 where irrelevant SAS codes are deleted and new ones are added. The SAS code additions or modifications are in italic. For an example of the JCL set up, see my response to UPS/USPS-T17-3.

b. The LDC cost pools are separated into the non-MODS cost pool classifications by using the dollar-weighted tallies for the IOCS uniform operation codes in F260 and Questions 18 and 19 (see my response to a. above and the SAS codes in the attachment).

Attachment
UPS/USPS-T16-8
PAGE 1 OF 2

*Modified PROGRAM NONMOD1 provided in response to UPS/USPS-T16-8a;

```
  DATA MAILP ADWNMOD ;
   set out1.mods;

    if substr(pool,1,4)='LD48'
    or pool='LD41' or pool='LD43' or pool='LD44'
    or pool='LD49' or  pool='LD79';
    actv   = f9806;
    %include  'xxxxxx.xxxxxxxx.xxxxxxxx(dolwgt)' /source2;
    dol=wgt*factor;
    costpool = pool ;
    if substr(pool,1,4)='LD48' then costpool = 'LD48';
    pool='        ';

  * .. establish mail processing operations based on iocs;

    IF '00'<=F260<='08'
    OR '11'<=F260<='16'
    OR '18'<=F260<='23'
    OR '27'<=F260<='29' THEN DO;

  * .. establish cost pools based on q.19 and q.18;

    IF F9806='6521'      THEN POOL  ='Z BREAKS ';
    ELSE IF F128='A' THEN DO;
       IF F9211='A'       THEN POOL='MANL    ';
       ELSE IF F9211='B' THEN POOL='MANF    ';
       ELSE IF F9211='C' THEN POOL='MANP    ';
       ELSE                   POOL='ALLIED  ';
                          END;
    ELSE IF 'B'<=F128<='F' THEN POOL='AUTO/MEC';
    ELSE IF 'G'<=F128<='I' THEN POOL='ALLIED  ';
    ELSE IF 'J'<=F128<='M' THEN POOL='AUTO/MEC';
    ELSE IF 'N'<=F128<='R' THEN POOL='ALLIED  ';
    ELSE IF      F128 ='S' THEN POOL='AUTO/MEC';
    ELSE IF 'T'<=F128<='U' THEN POOL='ALLIED  ';
    ELSE IF 'A'<=F116<='H' OR 'A'<=F118<='K' OR F121='Y'
                           THEN POOL='ALLIED  ';
    ELSE IF F260='18' THEN POOL='REGISTRY';
    ELSE IF F260='22' THEN POOL='EXPRESS ';
    ELSE                   POOL='MISC    ';

                            END;

IF   POOL = '     ' THEN   POOL = F260;
    IF   ACTV = '6522' THEN   POOL = '6522';

    IF   POOL > '0'  THEN OUTPUT ADWNMOD ;
                     ELSE OUTPUT MAILP  ;

  *.......Cost Pools , based on $Tallies and Cost Pool$.............;

 DATA COSTPOOL;
   SET ADWNMOD MAILP;
   DOL   =WGT*FACTOR;
   attrib pool label = 'Non-MODS Categories';
```

Attachment
UPS/USPS-T16-8
Page 2 of 2

```
attrib costpool label = 'MODS Cost Pools';
PROC FREQ;
tables pool*costpool/nocol missing;
WEIGHT WGT;
TITLE1 '  ';
TITLE2 'Response to TW/USPS-T17-4 ';
TITLE3 'Breakdown of MODS 1&2 Costpools ';
TITLE4 'Into Non-MODS Categories Exhibited in Tables I-4A';
TITLE5 'of LR-I-106 - based on IOCS Tally Dollars';
FOOTNOTE 'BY 98 USPS VERSION - MODS';
PROC FREQ;
tables pool*costpool/nocol missing;
WEIGHT DOL;
TITLE1 '  ';
TITLE2 'Response to TW/USPS-T17-4 ';
TITLE3 'Breakdown of MODS 1&2 Costpools ';
TITLE4 'Into Non-MODS Categories Exhibited in Tables I-4B';
TITLE5 'of LR-I-106 - based on Cost Pool Dollars';
```

CHAIRMAN GLEIMAN: Is there any Additional Designated Written Cross Examination for the witness?

[No response.]

CHAIRMAN GLEIMAN: If not, that brings us to oral cross examination, and the only request we've had is from Time Warner, which indicated that it might want to conduct followup.

Is there anyone else who wishes to cross examine this witness?

[No response.]

CHAIRMAN GLEIMAN: Are there any questions for this witness from the Bench?

[No response.]

CHAIRMAN GLEIMAN: If there are not, then Ms. Van-Ty-Smith, that completes your testimony here today. We appreciate your appearance, your contributions to our record. We want to thank you, and you're excused.

[Witness excused.]

THE WITNESS: Thank you.

CHAIRMAN GLEIMAN: Most amazingly, that concludes today's hearing. We'll reconvene tomorrow at 9:30.

Last week, I rescheduled the appearance of witnesses Baron and Raymond from tomorrow until May the 9th, and as a result, we will receive testimony from Postal Service witness ~~Harahugh~~ Harahush tomorrow.

So, thank you, and you have a good day.

[Whereupon, at 11:11 a.m., the hearing was recessed, to be reconvened on Tuesday, May 2, 2000, at 9:30 a.m.]