

Official Transcript of Proceedings

RECEIVED

Before the MAR 2 9 04 AM '98

POSTAL RATE COMMISSION
OFFICE OF THE SECRETARY
UNITED STATES POSTAL RATE COMMISSION

File

In the Matter of: **POSTAL RATE AND FEE CHANGES**

Docket No. **R97-1**

VOLUME 28

DATE: **Friday, February 27, 1998**

PLACE: **Washington, D.C.**

PAGES: **15255 - 16102**

ANN RILEY & ASSOCIATES, LTD.
1250 I St., N.W., Suite 300
Washington, D.C. 20005
(202) 842-0034

1 APPEARANCES:

2 On behalf of the United States Postal Service:

3 SUSAN DUCHEK, ESQUIRE

4 ERIC KOETTING, ESQUIRE

5 RICHARD COOPER, ESQUIRE

6 MICHAEL TIDWELL, ESQUIRE

7 ANNE REYNOLDS, ESQUIRE

8 DAVID RUBIN, ESQUIRE

9 KENNETH N. HOLLIES, ESQUIRE

10 SCOTT L. REITER, ESQUIRE

11 ANTHONY ALVERNO, ESQUIRE

12 United States Postal Service

13 475 L'Enfant Plaza West, SW

14 Washington, D.C. 20260

15

16 On behalf of American Business Press:

17 DAVID STRAUS, ESQUIRE

18 Thompson Coburn

19 700 14th Street, NW, Suite 900

20 Washington, D.C. 20005

21 (202) 508-1013

22 fax (202) 508-1010

23

24

25

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1250 I Street, N.W., Suite 300
Washington, D.C. 20005
(202) 842-0034

1 APPEARANCES: [continued]

2 On behalf of the Association of Alternate Postal Systems:

3 BONNIE S. BLAIR, ESQUIRE

4 Thompson Coburn

5 700 14th Street, NW, Suite 900

6 Washington, D.C. 20005

7 (202) 508-1003

8 fax (202) 508-1010

9

10 On behalf of Nashua Photo, Inc.; District Photo, Inc.;

11 Mystic Color Lab; Seattle FilmWorks, Inc.; ValPak Direct

12 Marketing Systems, Inc.; ValPak Dealers' Association; Carol

13 Wright Promotions:

14 WILLIAM J. OLSON, ESQUIRE

15 ALAN WOLL, ESQUIRE

16 JOHN S. MILES, ESQUIRE

17 JOHN F. CALLENDER, JR., ESQUIRE

18 William J. Olson, P.C.

19 8180 Greensboro Drive, Suite 1070

20 McLean, VA 22102-3823

21 (703) 356-5070

22 fax (703) 356-5085

23

24

25

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1250 I Street, N.W., Suite 300
Washington, D.C. 20005
(202) 842-0034

1 APPEARANCES: [continued]

2 On behalf of Readers Digest Association, Parcel Shippers
3 Association:

4 TIMOTHY J. MAY, ESQUIRE

5 Patton Boggs, LLP

6 2550 M Street, NW

7 Washington, D.C. 20037

8 (202) 457-6050

9

10 On behalf of Advertising Mail Marketing Association:

11 IAN D. VOLNER, ESQUIRE

12 Venable, Baetjer, Howard & Civiletti

13 1201 New York Avenue, NW

14 Washington, D.C. 20005

15 (202) 962-4814

16 fax (202) 962-8300

17

18 On behalf of the Dow Jones & Company, Inc.:

19 SAM BEHREND, ESQUIRE

20 MICHAEL F. McBRIDE, ESQUIRE

21 LeBoeuf, Lamb, Greene & Macrae

22 1875 Connecticut Avenue, NW

23 Washington, D.C. 20009

24 (202) 986-8018

25 fax (202) 986-8102

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1250 I Street, N.W., Suite 300
Washington, D.C. 20005
(202) 842-0034

1 APPEARANCES: [continued]

2 On behalf of the Major Mailers Association:

3 RICHARD LITTELL, ESQUIRE

4 1220 19th Street, NW, Suite 400

5 Washington, D.C. 20036

6 (202) 466-8260

7

8 On behalf of the Office of Consumer Advocate:

9 SHELLEY S. DREIFUSS, ESQUIRE

10 KENNETH E. RICHARDSON, ESQUIRE

11 Office of the Consumer Advocate

12 Postal Rate Commission

13 1333 H Street, NW, Suite 300

14 Washington, D.C. 20268

15

16 On behalf of the United Parcel Service:

17 JOHN E. MCKEEVER, ESQUIRE

18 Piper & Marbury

19 3400 Two Logan Square

20 18th and Arch Streets

21 Philadelphia, PA 19103

22 (215) 656-3310

23 fax (215) 656-3301

24

25

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1250 I Street, N.W., Suite 300
Washington, D.C. 20005
(202) 842-0034

1 APPEARANCES: [continued]

2 On behalf of Hallmark Cards, Incorporated:

3 DAVID F. STOVER, ESQUIRE

4 2070 S. Columbus Street, Suite 1B

5 Arlington, VA 22206

6 (703) 998-2568

7 fax (703) 998-2987

8

9 On behalf of ADVO, Inc.:

10 JOHN M. BURZIO, ESQUIRE

11 THOMAS W. McLAUGHLIN, ESQUIRE

12 Burzio & McLaughlin

13 1054 31st Street, NW, Suite 540

14 Washington, D.C. 20007

15 (202) 965-4555

16 fax (202) 965-4432

17

18 On behalf of Time Warner, Inc.:

19 JOHN M. BURZIO, ESQUIRE

20 TIMOTHY L. KEEGAN, ESQUIRE

21 1054 31st Street, NW, Suite 540

22 Washington, D.C. 20007

23 (202) 965-4555

24 fax (202) 965-4432

25

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1250 I Street, N.W., Suite 300
Washington, D.C. 20005
(202) 842-0034

1 APPEARANCES: [continued]

2 On behalf of the Direct Marketers Association:

3 DANA T. ACKERLY, II, ESQUIRE

4 MICHAEL D. BERGMAN, ESQUIRE

5 Covington & Burling

6 1201 Pennsylvania Avenue, NW

7 Washington, D.C. 20016

8 (202) 662-5296

9 fax (202) 778-5296

10

11 On behalf of the Newspaper Association of America:

12 WILLIAM B. BAKER, ESQUIRE

13 ALAN R. JENKINS, ESQUIRE

14 MICHAEL YOURSHAW, ESQUIRE

15 Wiley, Rein & Fielding

16 1776 K Street, NW

17 Washington, D.C. 20006

18 (202) 429-7255

19 fax (202) 429-7049

20

21 ROBERT J. BRINKMANN

22 Newspaper Association of America

23 529 14th Street, NW, Suite 440

24 Washington, D.C. 20045-1402

25

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1250 I Street, N.W., Suite 300
Washington, D.C. 20005
(202) 842-0034

1 APPEARANCES: [continued]

2 On behalf of the McGraw-Hill Companies, Inc.:

3 TIMOTHY W. BERGIN, ESQUIRE

4 Squire, Sanders & Dempsey

5 1201 Pennsylvania Avenue, NW, Suite 500

6 P.O. Box 407

7 Washington, D.C. 20044

8 (202) 626-6608

9 fax (202) 626-6780

10

11 On behalf of the Mail Order Association of America:

12 DAVID C. TODD, ESQUIRE

13 Patton Boggs, LLP

14 2550 M Street, NW

15 Washington, D.C. 20037

16 (202) 457-6410

17 fax (202) 457-6513

18

19 On behalf of David B. Popkin:

20 DAVID B. POPKIN

21 P.O. Box 528

22 Englewood, NJ 07631-0528

23 (201) 569-2212

24 fax (201) 569-2864

25

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1250 I Street, N.W., Suite 300
Washington, D.C. 20005
(202) 842-0034

1 APPEARANCES: [continued]

2 On behalf of the Magazine Publishers of America:

3 JAMES R. CREGAN, ESQUIRE

4 Magazine Publishers of America

5 1211 Connecticut Avenue, NW, Suite 610

6 Washington, D.C. 20036

7 (202) 296-7277

8 fax (202) 296-0343

9

10 On behalf of the Alliance of Nonprofit Mailers:

11 JOEL T. THOMAS, ESQUIRE

12 11326 Dockside Circle

13 Reston, VA 20191

14 (703) 476-4646

15 fax (703) 620-2338

16

17 On behalf of the National Newspaper Association:

18 TONDA F. RUSH, ESQUIRE

19 King & Ballou

20 P.O. Box 50301

21 Arlington, VA 22205

22 (703) 534-5750

23 fax (703) 534-5751

24

25

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1250 I Street, N.W., Suite 300
Washington, D.C. 20005
(202) 842-0034

1 APPEARANCES: [continued]

2 On behalf of the National Newspaper Association:

3 [continued]

4 SENNY BOONE

5 National Newspaper Association

6 1525 Wilson Boulevard, Suite 550

7 Arlington, VA 22209

8 (703) 907-7900

9

10 On behalf of the National Federation of Nonprofits:

11 CAROLYN EMIGH, ESQUIRE

12 Nonprofit Service Group

13 815 15th Street, NW, Suite 822

14 Washington, D.C. 20005

15 (202) 628-4380

16

17 On behalf of the Florida Gift Fruit Shippers Association:

18 M.W. WELLS, JR., ESQUIRE

19 Maxwell W. Wells, Jr., P.A.

20 105 E. Robinson Street, Suite 201

21 Orlando, FL 32801

22 (407) 422-8250

23 fax (407) 422-8262

24

25

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1250 I Street, N.W., Suite 300
Washington, D.C. 20005
(202) 842-0034

1 APPEARANCES: [continued]

2 On behalf of the Recording Industry Association of America,
3 and Advertising Mail Marketing Association:

4 N. FRANK WIGGINS, ESQUIRE

5 Venable, Baetjer, Howard & Civiletti, L.L.P.

6 1201 New York Avenue, NW

7 Washington, D.C.

8 (202) 962-4957

9

10 On behalf of Edison Electric Institute:

11 R. BRIAN CORCORAN, ESQUIRE

12 Oliver & Oliver, P.C.

13 1090 Vermont Avenue, NW, Suite 800

14 Washington, D.C. 20005

15 (202) 371-5656

16 fax (202) 289-8113

17

18 On behalf of American Business Press:

19 STEPHEN FELDMAN, ESQUIRE

20 Ramsey, Cook, Looper & Kurlander

21 c/o Thompson Coburn

22 700 14th Street, NW, Suite 900

23 Washington, D.C. 20005

24 (202) 508-1022

25 fax (202) 508-1010

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1250 I Street, N.W., Suite 300
Washington, D.C. 20005
(202) 842-0034

1 APPEARANCES: [continued]

2 On behalf of Douglas F. Carlson:

3 DOUGLAS F. CARLSON

4 P.O. Box 12574

5 Berkeley, CA 94712-3574

6 (510) 597-9995

7

8 On behalf of the Alliance of Non Profit Mailers:

9 DAVID M. LEVY, ESQUIRE

10 Sidley & Austin

11 1722 I Street, NW

12 Washington, D.C. 20006-3704

13 (202) 736-8214

14

15 On behalf of the National Association of Presort Mailers:

16 HENRY HART, ESQUIRE

17 Hazel & Thomas

18 P.O. Box 820

19 Alexandria, VA 22313

20 (703) 838-5153

21 fax (703) 836-8062

22

23

24

25

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1250 I Street, N.W., Suite 300
Washington, D.C. 20005
(202) 842-0034

1 APPEARANCES: [continued]

2 On behalf of Brooklyn Union Gas Company:

3 MICHAEL HALL, ESQUIRE

4 Cullen & Dykman

5 1225 19th Street, NW

6 Washington, D.C. 20036

7 (202) 223-8890

8

9 On behalf of Niagara Telephone Company:

10 TIMOTHY E. WELCH, ESQUIRE

11 Hill & Welch

12 1330 New Hampshire Avenue, NW, Suite 113

13 Washington, D.C. 20036

14 (202) 775-0070

15 fax (202) 775-9026

16

17 On behalf of the Coalition of Religious Press Associations:

18 JOHN STAPERT

19 Associated Church Press

20 18653 N. 41st Place

21 Phoenix, AZ 85024-3759

22 (602) 569-6371

23 fax (602) 569-6180

24

25

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1250 I Street, N.W., Suite 300
Washington, D.C. 20005
(202) 842-0034

1 APPEARANCES: [continued]

2 On behalf of the Greeting Card Association:

3 ALAN R. SWENDIMAN, ESQUIRE

4 Jackson & Campbell, P.C.

5 1120 20th Street, NW, Suite 300 South

6 Washington, D.C. 20036-3437

7 (202) 457-1645

8 fax (202) 457-1617

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1250 I Street, N.W., Suite 300
Washington, D.C. 20005
(202) 842-0034

1		C O N T E N T S			
2	WITNESS	DIRECT	CROSS	REDIRECT	RE CROSS
3	KEITH CRAIN				
4	BY MR. STRAUS	15274			
5	LAWRENCE G. BUC				
6	BY MR. BERGMAN	15353			
7	BY MR. KOETTING		15438		
8	BY MR. BERGMAN			15467	
9	BY MR. KOETTING				15469
10	BY MR. BERGMAN			15472	
11	SANDER GLICK				
12	BY MR. GOLD	15474			
13	WILLIAM B. SHEW				
14	BY MR. McBRIDE	15499			
15	KEVIN NEELS				
16	BY MR. McKEEVER	15582			
17	BY MS. DUCHEK		15758		
18	BY MR. McBRIDE		15797		
19	BY MS. DUCHEK		15805		
20	J. EDWARD SMITH, JR.				
21	BY MR. RICHARDSON	15815			
22	BY MR. KOETTING		15924/15964		
23	BY MR. RICHARDSON			15965	
24					
25					

ANN RILEY & ASSOCIATES, LTD.
 Court Reporters
 1250 I Street, N.W., Suite 300
 Washington, D.C. 20005
 (202) 842-0034

1 C O N T E N T S [continued]

2	WITNESS	DIRECT	CROSS	REDIRECT	RE CROSS
3	CAROLYN A. EMIGH				
4	BY MR. MILLER	15967			
5	BY MR. ALVERNO		16015		
6					
7	DOCUMENTS TRANSCRIBED INTO THE RECORD:				PAGE
8	Declarations of Authenticity for the Direct				
9	Testimony and Exhibits, and Designation of				
10	Written Cross-Examination of Roger Sherman,				
11	OCA-T-300				15272
12	Direct Testimony and Exhibits of Keith				
13	Crain, ABP-T-1				15277
14	Designation of Written Cross-Examination of				
15	Keith Crain, ABP-T-1				15286
16	Direct Testimony and Exhibits of Joyce				
17	McGarvey, ABP-T-2				15296
18	Designation of Written Cross-Examination of				
19	Joyce McGarvey, ABP-T-2				15318
20	Direct Testimony and Exhibits of Nicholas				
21	Cavnar, ABP-T-3				15333
22	Designation of Written Cross-Examination of				
23	Nicholas Cavnar, ABP-T-3				15348
24	Direct Testimony and Exhibits of Lawrence G.				
25	Buc, DMA-T-1				15356

1	DOCUMENTS TRANSCRIBED INTO THE RECORD: [continued]	PAGE
2	Designation of Written Cross-Examination of	
3	Lawrence G. Buc, DMA-T-1	15392
4	Cross-Examination Exhibit USPS/DMA-T1-EX-1	15451
5	Direct Testimony and Exhibits of Sander	
6	Glick, MPA-T-3	15476
7	Designation of Written Cross-Examination of	
8	Sander Glick, MPA-T-3	15491
9	Direct Testimony and Exhibits of William B.	
10	Shew, DJ-T-1	15501
11	Designation of Written Cross-Examination of	
12	William B. Shew, DJ-T-1	15543
13	Direct Testimony and Exhibits of Kevin	
14	Neels, UPS-T-1	15583
15	Supplemental Testimony and Exhibits of	
16	Kevin Neels, UPS-ST-1	15642
17	Designation of Written Cross-Examination of	
18	Kevin Neels, UPS-T-1	15651
19	Additional Designation of Written Cross-	
20	Examination of Kevin Neels, UPS-T-1	15739
21	Additional Designation of Written Cross-	
22	Examination of Kevin Neels, UPS-ST-1	15744
23	Cross-Examination Exhibit PRC/UPS-XE-1	15776
24	Cross-Examination Exhibit PRC/UPS-XE-2	15785
25		

DOCUMENTS TRANSCRIBED INTO THE RECORD: [continued]	PAGE
1 Direct Testimony and Exhibits of J. Edward	
2 Smith, Jr., OCA-T-600	15818
3 Designation of Written Cross-Examination of	
4 J. Edward Smith, Jr., OCA-T-600	15898
5 Cross-examination Exhibit USPS/OCA-T600-EX-1	15931
6 Direct Testimony and Exhibits of Carolyn A.	
7 Emigh, NFN-T-1	15970
8 Designation of Written Cross-Examination of	
9 Carolyn A. Emigh, NFN-T-1	15981
10 Cross-Examination Exhibit USPS/NFN-T-1-XE-1	16031
11 Supplemental Direct Testimony and Exhibits	
12 of Michael D. Bradley, USPS-ST-55	16070
13 Designation of Written Cross-Examination of	
14 Michael D. Bradley, USPS-ST-55	16098

16

17

E X H I B I T S

EXHIBITS AND/OR TESTIMONY	IDENTIFIED	RECEIVED
18 Declarations of Authenticity for		
19 the Direct Testimony and		
20 Exhibits, and Designation of		
21 Written Cross-Examination of		
22 Roger Sherman, OCA-T-300	15271	15271
23 Direct Testimony and Exhibits of		
24 Keith Crain, ABP-T-1	15275	15275

25

E X H I B I T S [continued]			
1	EXHIBITS AND/OR TESTIMONY	IDENTIFIED	RECEIVED
2	Designation of Written Cross-		
3	Examination of Keith Crain,		
4	ABP-T-1	15285	15285
5	Direct Testimony and Exhibits of		
6	Joyce McGarvey, ABP-T-2	15295	15295
7	Designation of Written Cross-		
8	Examination of Joyce McGarvey,		
9	ABP-T-2	15317	15317
10	Direct Testimony and Exhibits of		
11	Nicholas Cavnar, ABP-T-3	15332	15332
12	Designation of Written Cross-		
13	Examination of Nicholas Cavnar,		
14	ABP-T-3	15332	15332
15	Direct Testimony and Exhibits of		
16	Lawrence G. Buc, DMA-T-1	15355	15355
17	Designation of Written Cross-		
18	Examination of Lawrence G.		
19	Buc, DMA-T-1	15391	15391
20	Cross-Examination Exhibit		
21	USPS/DMA-T1-EX-1	15450	15450
22	Direct Testimony and Exhibits of		
23	Sander Glick, MPA-T-3	15475	15475
24			
25			

E X H I B I T S [continued]		IDENTIFIED	RECEIVED
1	EXHIBITS AND/OR TESTIMONY		
2	Designation of Written Cross-		
3	Examination of Sander Glick,		
4	MPA-T-3	15490	15490
5	Direct Testimony and Exhibits of		
6	William B. Shew, DJ-T-1	15500	15500
7	Designation of Written Cross-		
8	Examination of William B. Shew,		
9	DJ-T-1	15542	15542
10	Direct Testimony and Exhibits of		
11	Kevin Neels, UPS-T-1	15582	15582
12	Supplemental Testimony and		
13	Exhibits of Kevin Neels,		
14	UPS-ST-1	15641	15641
15	Designation of Written Cross-		
16	Examination of Kevin Neels,		
17	UPS-T-1	15650	15650
18	Additional Designation of		
19	Written Cross-Examination of		
20	Kevin Neels, UPS-T-1	15737	15737
21	Additional Designation of		
22	Written Cross-Examination of		
23	Kevin Neels, UPS-ST-1	15737	15737
24			
25			

E X H I B I T S [continued]			
	EXHIBITS AND/OR TESTIMONY	IDENTIFIED	RECEIVED
1			
2			
3	Cross-Examination Exhibit		
4	PRC/UPS-XE-1	15775	15775
5	Cross-Examination Exhibit		
6	PRC/UPS-XE-2	15784	15784
7	Direct Testimony and Exhibits of		
8	J. Edward Smith, Jr., OCA-T-600	15817	15817
9	Designation of Written Cross-		
10	Examination of J. Edward Smith,		
11	Jr., OCA-T-600	15897	15897
12	Cross-examination Exhibit		
13	USPS/OCA-T600-EX-1	15930	15930
14	Direct Testimony and Exhibits of		
15	Carolyn A. Emigh, NFN-T-1	15969	15969
16	Designation of Written Cross-		
17	Examination of Carolyn A.		
18	Emigh, NFN-T-1	15980	15980
19	Cross-Examination Exhibit		
20	USPS/NFN-T-1-XE-1	16028	16030
21	Supplemental Direct Testimony		
22	and Exhibits of Michael D.		
23	Bradley, USPS-ST-55	16069	16069
24			
25			

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

E X H I B I T S [continued]

EXHIBITS AND/OR TESTIMONY	IDENTIFIED	RECEIVED
Designation of Written Cross- Examination of Michael D. Bradley, USPS-ST-55	16097	16097

1 CHAIRMAN GLEIMAN: Now --

2 MS. DUCHEK: But we're prepared to do that today.

3 CHAIRMAN GLEIMAN: Mr. McKeever, if your witness
4 is prepared to be cross-examined on that testimony also --

5 MR. MCKEEVER: That's acceptable, Mr. Chairman.

6 CHAIRMAN GLEIMAN: Fine. We'll have to clarify
7 when Mr. Neels is up there what he's being crossed on, so
8 that I can understand what's happening.

9 Does any participant have a procedural matter to
10 raise before we begin this morning?

11 MR. McBRIDE: Yes, Mr. Chairman.

12 Mr. Chairman, Michael McBride for Dow Jones.

13 Yesterday I received a notice of designated
14 written cross-examination by the Postal Service, Dow Jones
15 Interrogatories 1 through 35, and I've had discussions with
16 counsel. The Commission may be aware that we had objected
17 along with answering those interrogatories just to speed the
18 process along and not knowing what relevance they may have
19 had if any to the proceeding.

20 They've indicated to me that they believe they
21 will be relevant to the rebuttal testimony that they're
22 going to offer. I am in no position at this point to
23 dispute that or agree with that until I see that rebuttal,
24 so what we've agreed to is that we would allow both the
25 objections and the answers to go in and let the Commission

1 determine the relevance, if any, of them at the time after
2 the rebuttal is received.

3 CHAIRMAN GLEIMAN: We appreciate your confidence
4 in us.

5 MR. McBRIDE: Thank you.

6 CHAIRMAN GLEIMAN: Thank you, sir.

7 Are there any other procedural matters that anyone
8 wishes to raise?

9 MR. RICHARDSON: Mr. Chairman, I have one minor
10 procedural matter. On Wednesday, February 25, OCA Witness
11 Roger Sherman's testimony was placed into the record with
12 the stipulation that the declaration attesting to the
13 authenticity of the testimony and his interrogatories would
14 be submitted, and I have those available, and I would like
15 to hand those to the reporter.

16 CHAIRMAN GLEIMAN: If you could do that, I'd
17 appreciate it, Mr. Richardson.

18 [Declarations of Authenticity for
19 the Direct Testimony and Exhibits,
20 and Designation of Written
21 Cross-Examination of Roger Sherman,
22 OCA-T-300, was received into
23 evidence and transcribed into the
24 record.]

25

DECLARATION

I, Roger Sherman, declare under penalty of perjury that I prepared the document titled Direct Testimony of Roger Sherman On Behalf of the Office of the Consumer Advocate (OCA-T-300), as revised January 29, 1998, and that my testimony is true and correct, to the best of my knowledge, information and belief.


ROGER SHERMAN

February 25, 1998
Charlottesville, Virginia

DECLARATION

I, Roger Sherman, declare under penalty of perjury that my responses to interrogatories ADVO/OCA-T300-1-5, NAA/OCA-T300-1-6, and USPS/OCA-T300-1-10, are true and correct, to the best of my knowledge, information and belief.



ROGER SHERMAN

February 25, 1998
Charlottesville, Virginia

1 CHAIRMAN GLEIMAN: Inasmuch as the volume from the
2 25th has long been in print, we'll ask the reporter to
3 include those materials in today's volume.

4 Are there any other procedural matters?

5 If not, Mr. Straus, if you could identify your
6 witness so that I can swear him in.

7 MR. STRAUS: Yes. The first witness I'd like to
8 call today, the only actual witness appearing today, is
9 Keith Crain, who's appearing not only on behalf of American
10 Business Press but also on behalf of the Coalition of
11 Religious Press Associations, Dow Jones & Company, the
12 Magazine Publishers of America, the McGraw-Hill Companies,
13 the National Newspaper Association, and Time Warner.

14 CHAIRMAN GLEIMAN: Thank you.

15 Whereupon,

16 KEITH CRAIN,
17 a witness, was called for examination by counsel for the
18 American Business Press, on behalf of Publishing Intervenors
19 and, having been first duly sworn, was examined and
20 testified as follows:

21 CHAIRMAN GLEIMAN: Mr. Straus, if you could
22 proceed to introduce your witness' testimony.

23 DIRECT EXAMINATION

24 BY MR. STRAUS:

25 Q Please state your name and title for the record.

1 A My name is Keith Crain, and I'm chairman of the
2 board of Crain Communications. I'm also chairman of the
3 American Business Press legal committee.

4 Q Are you the same Keith Crain that submitted
5 testimony in this proceeding on December 30, 1997?

6 A Yes, I am.

7 Q If you were to present that testimony here today,
8 would your testimony be the same?

9 A Well, not exactly. My testimony then focused on
10 our concern for the rapidly increasing cost of handling
11 periodicals. Had I known then what I know today, that
12 United Parcel Service was going to suggest a 25-percent
13 increase for periodicals, based on those costs, I would have
14 probably expressed my concern even stronger than I did in
15 that testimony.

16 Q Thank you.

17 MR. STRAUS: Mr. Chairman, I request that Mr.
18 Crain's written testimony be copied into the record and
19 accepted into evidence.

20 CHAIRMAN GLEIMAN: Are there any objections?

21 Hearing none, Mr. Crain's testimony and exhibits
22 are received into evidence, and I direct that the be
23 transcribed into the record at this point.

24 [Direct Testimony and Exhibits of
25 Keith Crain, ABP-T-1, was received

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

into evidence and transcribed into
the record.]

ABP-T-1

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

POSTAL RATE AND FEE CHANGES, 1997)
_____)

Docket No. R97-1

DIRECT TESTIMONY
OF
KEITH CRAIN
ON BEHALF OF
PUBLISHING INTERVENORS

David R. Straus
Thompson Coburn
700 14th Street, N.W.
Suite 900
Washington, D.C.
202-508-1000 (office)
202-508-1010 (facsimile)

Attorney for
Amercian Business Press

December 30, 1997

847251

ABP-T-1

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

POSTAL RATE AND FEE CHANGES, 1997)

) Docket No. R97-1
)

**DIRECT TESTIMONY OF KEITH CRAIN
ON BEHALF OF PUBLISHING INTERVENORS**

1 My name is Keith Crain, and I am Chairman of Crain Communications
2 Inc. I am testifying on behalf of the American Business Press, the Coalition
3 of Religious Press Associations, Dow Jones & Company, Inc., the Magazine
4 Publishers of America, The McGraw-Hill Companies, Inc., the National
5 Newspaper Association and Time Warner.

6 Crain Communications is a publisher of consumer, trade and business
7 publications. It was founded in 1916 and today publishes thirty publications.
8 We publish twenty-seven publications in the United States and publish in six
9 offices in the U.S. We have additional offices in six other U.S. cities.

10 I have been Chairman of this family business since last May,
11 succeeding my late mother, who succeeded my father when he passed away.
12 Our company was founded by my father in 1916. I have worked at Crain
13 Communications since I got out of school and have had a wide variety of

ABP-T-1

1 positions with the company. I am publisher of a couple of our magazines
2 and, additionally, I am editorial director of several others.

3 I am not an expert on postal ratemaking, but I do know a bit about the
4 publishing industry, the impact of postal rates on our industry and the time
5 and money my company and other spend to reduce costs and assist the
6 Postal Service in delivering our publications on time.

7 Even though we at Crain and, I believe, the publishing industry in
8 general are pleased that the Postal Service has proposed only a modest
9 increase for periodicals, we are gravely concerned with the Postal Service's
10 claim that the costs of handling periodicals continue to increase rapidly and
11 with the new methods of assigning costs to classes and subclasses
12 introduced in this docket. This persistent pattern of increasing costs to
13 handle periodicals is enormously frustrating to me as a publisher and a
14 businessman, and to the publishing industry, and that frustration is
15 compounded by the Postal Service's struthious response to years of efforts
16 by the publishing industry to seek the causes of the alleged increases.

17 The sponsors of this testimony are so concerned about the Postal
18 Service's failure to investigate seriously the reasons for periodical costs
19 having increased by, it claims, 87% in ten years (as explained by my
20 colleague Chris Little) that they have decided to put aside, at least for now,
21 their parochial concerns with rate design issues to focus on what we truly

ABP-T-1

1 believe to be a threat to the well-being of our industry. Again, that threat is
2 the Postal Service's seeming inability to control the costs of handling
3 periodicals and its consistent refusal even to recognize that there is a
4 problem, much less to do anything about it.

5 The Postal Service often claims that it wants to be free to operate
6 "more like a business." Any business, in my experience, would leave no
7 stone unturned in an effort to find and cure the problems leading to
8 inexplicable costs increases, yet the Postal Service appears content merely
9 to pass them on.

10 As I've already stated, this is not a new problem, and it is not a
11 problem of which the Postal Service is unaware. I will leave to Rita Cohen,
12 appearing for the Magazine Publishers of America, the task of providing the
13 year-by-year, case-by-case history and detail of the industry's efforts to
14 identify and cure the problem, efforts that always seem to run into the
15 marble walls of L'Enfant Plaza. However, I can recount first hand a
16 frustrating meeting I attended at Postal headquarters on June 4 of this year.

17 The meeting was attended by Gordon Hughes, president of ABP and
18 me, in my role as chairman of ABP's Legal Committee, as well as by Don
19 Kummerfeld, president of MPA, Rick Smith, the president of Newsweek and
20 chairman of MPA's board, Jim O'Brien of Time Warner and Dan Austin of Dow
21 Jones from the publishing industry. The Postal Service was represented by

ABP-T-1

1 Postmaster General Marvin Runyon, Deputy Postmaster General Mike
2 Coughlin and Senior Vice President Alan Kane. The industry representatives
3 expressed their growing dismay and frustration at the decline in flat handling
4 productivity and the resulting disproportionate rate and cost increases for
5 periodical mailers. We explained that the cost trend should be downward,
6 not upward, in light of the industry's growing investment of time and money
7 in mail preparation and drop shipping activities, and we presented again our
8 concern that "automation refugees" may contribute significantly to the
9 paradoxical cost increases.

10 As always, the Postal Service response was a general denial that there
11 is a cost incurrence or measurement problem, and a specific denial that
12 there is an "automation refugee" problem. The Postal Service did agree to a
13 joint study with industry to determine how flat processing costs can be
14 reduced, but as Ms. Cohen explains, there has yet to be agreement on the
15 scope or methodology of the study.

16 One of the most troubling aspects of these continuing cost increases is
17 that they hit us at the same time as we are spending more and more money
18 to prepare our mail and to drop ship it. We perform these activities both to
19 improve service and to reduce our postal costs, as well as those of the Postal
20 Service. Yet it seems that no matter how much we "workshare," the Postal

ABP-T-1

1 Service's "share" of the work increases, and despite our efforts, service is
2 bad, to put it charitably.

3 Crain Communications is not a huge company, but it is a sophisticated
4 one that expends considerable resources to minimize its postage costs (and
5 maximize the level of delivery service it obtains). I can certainly speak
6 directly for Crain Communications and, I believe, for nearly all players in this
7 industry when I say that publishers are doing about all they can to reduce
8 their own costs and the Postal Service's costs. Joyce McGarvy, our
9 company's distribution director, is supplying testimony concerning our
10 operations and the service we obtain. I will just summarize it here.

11 We publish both weekly periodicals, such as Auto Week, Automotive
12 News and Advertising Age, as well as fortnightly and monthly periodicals,
13 such as Modern Physician and Business Marketing. We presort as
14 extensively as we can, and we barcode everything that the Postal Service is
15 able to automate (but because we publish a number of tabloid-sized
16 periodicals, we are unable to obtain automation discounts until the Postal
17 Service adds barcode readers to the soon-to-be-deployed FSM 1000s).
18 Crain spent more than \$3,500,000 last year drop shipping our publications,
19 including substantial expenditures on air freight. We know that many other
20 publishers do the same.

ABP-T-1

1 That is why the skyrocketing periodical handling costs are so troubling
2 to us. We are stymied, because there is nothing left for us to do. We must
3 look to the Postal Service to constrain costs.

4 I recognize that the Postal Rate Commission cannot simply order the
5 Postal Service to slow the supposedly rising costs of handling periodicals.
6 But what the Commission can do here is to recognize the problem of rising
7 costs, both those we incur ourselves and those of the Postal Service, and
8 give substantial weight to the "educational, cultural, scientific and
9 informational" value of periodicals when considering the appropriate
10 Periodicals rates. It should also consider that most publications experienced
11 rate increases just last year, as a result of "classification reform."

12 To its credit, the Postal Service appears to have considered these
13 matters in proposing rates, especially when it comes to the markup for
14 periodicals. I understand that it has proposed a "coverage" of 107% for
15 regular rate periodicals, lower than in prior cases. While we agree that,
16 under the circumstances (including the fairly large postal rate increase that
17 Crain and most other publishers experienced in 1996), a relatively low
18 markup is appropriate, we also believe that the rates proposed actually
19 produce a substantially higher markup. I will of course defer to the cost and
20 rate experts appearing for periodical intervenors to explain why and how the
21 Postal Service has in our view overstated the costs of handling periodicals.

ABP-T-1

1 ABP endorses the testimony on these issues of Witnesses Cohen, Shew and
2 Stralberg, as well as the testimony of Michael Hehir. My message is that
3 irrespective of whether or not the Commission is 100% convinced that this
4 overstatement exists, and whether or not it feels that there is sufficient
5 information to permit it to redo all of the numbers, it nevertheless should
6 give weight to this very real problem when considering the proposed rates.

7 Clearly, the publishing industry is no different from any other. It does
8 not like to see any of its costs increase. Nevertheless, I believe that we can
9 live with the proposed rates, although I am not certain that we can live with
10 the long-term implication of rising Postal Service costs and its new method
11 of assigning them. I urge the Commission to recommend rates no higher
12 than the Periodical rates proposed by the Postal Service while, at the same
13 time, refraining from approving the new costing methods that are improper
14 and that, if followed in future cases, will lead to devastating rate increases
15 for periodicals.

16 Thank you for the opportunity to appear.

1 CHAIRMAN GLEIMAN: Mr. Crain, have you had an
2 opportunity to examine what we call the designated written
3 cross-examination? Those are the written answers that you
4 provided to certain questions earlier in the proceeding.

5 THE WITNESS: I believe so; yes.

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

9 THE WITNESS: Yes, they would.

10 CHAIRMAN GLEIMAN: If that is the case, then I'm
11 going to provide two copies of the designated written
12 cross-examination to the reporter and ask that it be
13 accepted into evidence and transcribed into the record at
14 this point.

15 [Designation of Written
16 Cross-Examination of Keith Crain,
17 ABP-T-1, was received into evidence
18 and transcribed into the record.]

19
20
21
22
23
24
25

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, DC 20268-0001

Postal Rate and Fee Changes, 1997

Docket No. R97-1

DESIGNATION OF WRITTEN CROSS-EXAMINATION
OF AMERICAN BUSINESS PRESS
WITNESS KEITH CRAIN
(ABP-T1)

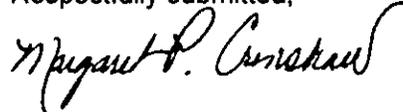
Party

United States Postal Service

Interrogatories

USPS/ABP-T1-3, 35-36

Respectfully submitted,



Margaret P. Crenshaw
Secretary

INTERROGATORY RESPONSES OF
AMERICAN BUSINESS PRESS
WITNESS KEITH CRAIN (T1)
DESIGNATED AS WRITTEN CROSS-EXAMINATION

Interrogatory:

USPS/ABP-T1-3

USPS/ABP-T1-35

USPS/ABP-T1-36

Designating Parties:

USPS

USPS

USPS

ANSWERS OF AMERICAN BUSINESS PRESS WITNESS CRAIN TO USPS/ABP-T1-3
(PARTIAL), 35-36

USPS/ABP-T1-3

For each fiscal year (or calendar year if fiscal year is unavailable) from 1986 to present, please provide the total volumes mailed at second-class regular or periodical rates for each publication listed in response to interrogatory number 1.

Answer

Notwithstanding ABP's objections to questions 1-34, we have compiled a list of our publications in June 1986 and June 1997 showing frequency and circulation. It is attached.

ANSWERS OF AMERICAN BUSINESS PRESS WITNESS CRAIN TO USPS/ABP-T1-3
(PARTIAL), 35-36

USPS/ABP-T1-35

Please refer to your testimony on page 6, lines 10-11. Please provide any quantitative support for your claim that "most publications experienced rate increases just last year, as a result of 'classification reform.'" (emphasis added).

Answer

I have no precise quantitative support. However, because, as I understand it, most publications sort most of their copies to basic, 3-digit or 5-digit levels, it follows that most publications experienced rate increases.

ANSWERS OF AMERICAN BUSINESS PRESS WITNESS CRAIN TO USPS/ABP-T1-3
(PARTIAL), 35-36

USPS/ABP-T1-36

Please refer to your testimony at page 5, lines 13-17. For each of the last 10 years, what proportion of Crain Communications' circulation (for all its publications) is represented by tabloid-sized periodicals)? If figures are not available, do you believe that this proportion has increased or decreased during the last 10 years?

Answer

We do not have this information readily available. I believe, however, that the proportion of tabloid pieces has increased somewhat in the past ten years.

1 CHAIRMAN GLEIMAN: Does any participant have
2 additional written cross-examination for the witness?

3 [No response.]

4 CHAIRMAN GLEIMAN: If not, as I understand it, no
5 one has requested oral cross-examination of Witness Crain.
6 Is there anyone here today who wishes to cross-examine Mr.
7 Crain?

8 [No response.]

9 CHAIRMAN GLEIMAN: If not, questions from the
10 bench?

11 [No response.]

12 CHAIRMAN GLEIMAN: There are no questions.

13 COMMISSIONER HALEY: Mr. Chairman, I have one.

14 CHAIRMAN GLEIMAN: Excuse me.

15 COMMISSIONER HALEY: I have one observation at
16 least to make.

17 CHAIRMAN GLEIMAN: Certainly.

18 COMMISSIONER HALEY: Mr. Crain, good morning.

19 THE WITNESS: Good morning, sir.

20 COMMISSIONER HALEY: The use of the word
21 "struthious" on line 15 of page 2 of your testimony caused
22 some of us at least in the Commission to go to the
23 dictionary for the definition of that word. I interpret it
24 as meaning that you believe that the Postal Service has made
25 no effort or little effort through the years to determine

1 the cause of alleged increases in postal costs, postal
2 industry? Just want to make sure that I understood.

3 THE WITNESS: We all reached for the dictionary.

4 COMMISSIONER HALEY: We all looked into it.

5 THE WITNESS: Of course.

6 COMMISSIONER HALEY: Just wanted you to know we
7 looked into it, too.

8 THE WITNESS: Thank you.

9 COMMISSIONER HALEY: Thank you.

10 CHAIRMAN GLEIMAN: Show of hands. How many people
11 in the audience know what the definition of "struthious" is?

12 [Laughter.]

13 CHAIRMAN GLEIMAN: It's a good word. Everyone has
14 a homework assignment, but we won't ask you on Monday.

15 MR. STRAUS: The symbolism is terrific.

16 CHAIRMAN GLEIMAN: We have everyone scratching
17 their heads now about what that word means.

18 MR. STRAUS: Rather than burying them?

19 [Laughter.]

20 CHAIRMAN GLEIMAN: Just so you'll understand the
21 pun, struthious as I've come to understand it means
22 ostrich-like, as in sticking your head in the sand, which is
23 what prompted Mr. Straus's comment about scratching their
24 heads as opposed to burying them.

25 Is there any follow-up as a consequence of

1 comments from the bench?

2 [No response.]

3 CHAIRMAN GLEIMAN: If not, I take it that you
4 don't feel the need for any redirect at this point?

5 MR. STRAUS: No, I don't.

6 CHAIRMAN GLEIMAN: Mr. Crain, I think by now you
7 know that, at least for your appearance this time around,
8 any fears you may have had were not well founded, because no
9 one wanted to get a piece of you with oral
10 cross-examination. I am not sure how well they would have
11 fared, in any event, having spoke with you several times
12 outside of these proceedings.

13 And I want to thank you, Mr. Crain. We appreciate
14 your appearance here today, and your comments, and your
15 contributions to our record. And if there is nothing
16 further, you are excused.

17 THE WITNESS: I just want to say thank you for
18 allowing me the time and I appreciate your efforts.

19 CHAIRMAN GLEIMAN: Thank you.

20 [Witness excused.]

21 CHAIRMAN GLEIMAN: Our next two scheduled
22 witnesses, Joyce McGarvey and Nicholas Cavnar, have filed
23 testimony on behalf of American Business Press, or American
24 Business Press et al., I don't recall which at this point.

25 MR. STRAUS: These would just be American Business

1 Press.

2 CHAIRMAN GLEIMAN: Business Press, okay. And the
3 Commission received no request for oral cross-examination of
4 these witnesses.

5 As in previous instances when no requests for oral
6 cross have been received, our practice is allow testimony to
7 received into evidence, accompanied by a statement of
8 authenticity. And if you are prepared to do that, Mr.
9 Straus, we can proceed with Witness McGarvey's testimony.

10 MR. STRAUS: Yes. I will hand the reporter two
11 copies of Ms. McGarvey's testimony and a copy of a
12 declaration that was signed yesterday when we found out she
13 would not have to appear, and ask that Ms. McGarvey's
14 testimony be transcribed into the record and admitted into
15 evidence.

16 CHAIRMAN GLEIMAN: Thank you. The testimony and
17 exhibits of Witness McGarvey are received into evidence and
18 I direct that they be transcribed into the record at this
19 point.

20 [Direct Testimony and Exhibits of
21 Joyce McGarvey, ABP-T-2, was
22 received into evidence and
23 transcribed into the record.]

24

25

ABP-T-2

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

))
POSTAL RATE AND FEE CHANGES, 1997))

))

Docket No. R97-1

DIRECT TESTIMONY
OF
JOYCE McGARVY
ON BEHALF OF
AMERICAN BUSINESS PRESS

David R. Straus
Thompson Coburn
700 14th Street, N.W.
Suite 900
Washington, D.C.
202-508-1000 (office)
202-508-1010 (facsimile)

Attorney for
American Business Press

December 30, 1997

ABP-T-2

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

POSTAL RATE AND FEE CHANGES, 1997) Docket No. R97-1
_____)

**DIRECT TESTIMONY OF JOYCE McGARVY
ON BEHALF OF AMERICIAN BUSINESS PRESS**

1 My name is Joyce McGarvy. As Distribution Director for Crain Communications, Inc. I
2 am responsible for distribution of Crain's weekly, biweekly, and monthly publications. I also
3 serve as Industry Co-chair for the Postal Service's Periodicals Focus Group which serves the
4 Great/Lakes and Mid/West areas. I am Chairman of the Executive Committee for Red Tag News
5 Publications Association and Red Tag's representative to MTAC -- the Mailers Technical
6 Advisory Committee to the Postmaster General. I am a member of ABP's Postal and
7 Distribution Committee. I currently chair the Publication Watch MTAC work group and serve
8 on the Service Improvement MTAC work group, which was recently formed because of service
9 deterioration for Periodicals.

10 I have a degree in Transportation from the College of Advanced Traffic, Chicago, IL, a
11 Bachelor's Degree in Business Administration, from Cleary College, and a Master's of Science
12 in Administration degree from Central Michigan University.

13 Crain publishes a variety of weekly, bi-weekly, and monthly business, trade and

ABP-T-2

1 consumer newspapers and magazines. The principal publications produced under the Crain
 2 banner are:

3	<u>Weeklies</u>	<u>Circulation</u>	<u>Size</u>
4	Advertising Age	76,096	Tabloid
5	Automotive News	78,613	Tabloid
6	AutoWeek	293,052	Magazine
7	Business Insurance	51,817	Tabloid
8	Crain's Chicago Business	50,165	Tabloid
9	Crain's Cleveland Business	23,075	Tabloid
10	Crain's Detroit Business	34,723	Tabloid
11	Crain's New York Business	65,792	Tabloid
12	Electronic Media	26,291	Tabloid
13	Investment News	60,000	Tabloid
14	Modern Healthcare	83,608	Magazine
15	Plastics News	60,082	Tabloid
16	Radio Communications Report	31,532	Tabloid
17	Waste News	40,999	Tabloid
18	<u>Bi-Weeklies</u>	<u>Circulation</u>	<u>Size</u>
19	Automotive News Europe	23,625	Tabloid
20	Pensions & Investment	48,705	Tabloid
21	Rubber & Plastics News	15,757	Tabloid

ABP-T-2

1	Tire Business	14,005	Tabloid
2	<u>Monthlies</u>	<u>Circulation</u>	<u>Size</u>
3	Advertising Age's Creativity	22,866	Tabloid
4	Advertising Age's Business Marketing	29,708	Tabloid
5	Modern Physician	29,000	Magazine
6	<u>Bi-Monthlies</u>	<u>Circulation</u>	<u>Size</u>
7	Franchise Times	100,350	Tabloid

8 All these publications are important news vehicles to the industries and to the readers that they
9 serve.

10 My testimony will address two points: the first is the importance to Crain of reliable,
11 consistent delivery and the failure of the USPS to provide that reliable service; the second point
12 is the rate impact that increased per-piece rates for non-automated periodical flats have had on
13 Crain and other publishers because of delay by the USPS in deployment of flats sorters able to
14 sort all of the well known variety of shapes and sizes of periodicals, especially tabloids. Because
15 of poor service actually received by publishers, and because of the heavy per-piece increases
16 suffered by tabloids (including pieces sorted to five digits), I urge the Commission to approve the
17 USPS rate schedule as the best alternative available, and certainly to approve no periodical rates
18 higher than those filed by the USPS.

19 **PERIODICAL DELIVERY**

20 Periodical delivery is inconsistent and does not meet published delivery standards. The

ABP-T-2

1 on-time delivery of our publications is extremely important to Crain Communications.

2 Most of our publications have a very tight editorial close. In the case of the weeklies, the
3 Editorial Department is scheduled to complete the final pages at the close of the business day on
4 Friday. The printers receive the last forms around seven in the evening, and the binding and
5 mailing usually are completed by noon Saturday. The mail is deposited in the destination post
6 office by midnight Saturday. Crain, at its own expense, uses several modes of transportation to
7 as many as 34 post offices in the United States each Saturday to insure that weeklies are received
8 on time. It is expected that the subscriber will receive his or her issue Monday each week.
9 Timely and regular delivery is always important, but quite frequently the publication contains a
10 late breaking news story, and late delivery can have an especially negative impact on the story.

11 Crain understandably puts a great deal of emphasis on the delivery of its weekly
12 publications, but I would add that the news and in-depth analysis our editors create in our bi-
13 weeklies and monthlies is of equal importance and is equally deserving of on time delivery.
14 Because of the importance of service, Crain belongs to the Red Tag News Publications
15 Association, a national trade association that helps its membership obtain the best possible
16 delivery of their paid circulation and requester publications. The Association is well known to
17 USPS management. More than 25 years old, Red Tag operates one of the best known, and
18 perhaps the most sophisticated, delivery monitoring system in the industry. With more than 500
19 monitors, the Red Tag monitoring system tracks the delivery performance of publications
20 delivered through the Postal Service and other transportation and delivery systems. Besides
21 distributing consolidated reports to all its members, Red Tag also distributes its data to key

ABP-T-2

1 officials at Postal Service headquarters and to area representatives during Postal Forums.

2 I would like to share recent delivery results for the sixty-five publications monitored by

3 Red Tag:

4	<u>Monitoring Period</u>	<u>On-Time</u>	<u>1Day Late</u>	<u>2Days Late</u>	<u>3+Days Late</u>
5	1/02/95-12/11/95	45%	28%	14%	12%
6	1/01/96-12/16/96	44%	26%	14%	16%
7	1/06/97-10/27/97	43%	24%	13%	19%

8 I find the data above to be alarming and, to put it mildly, this kind of service is not "high
9 value." Not only is the on-time service eroding year after year, but nearly one out of five copies,
10 many of which try to help themselves and the USPS by using multiple entry points, are 3+ days
11 late. The data show not only that the late copies are increasing in number but also that the extent
12 of lateness is increasing as well. The source documents for the above data are appended to my
13 testimony.

14 I find the Postal Service's failure to maintain any performance evaluation system for
15 periodicals very troubling. USPS witness O'Hara admitted in response to an ABP interrogatory
16 (Transcript, page 111) that the Postal Service has not developed any nationally representative
17 data on the days to delivery for periodicals, even though he set the price periodicals would pay in
18 part on "service actually provided." Indeed, the USPS has no system that tracks in-office or in-
19 home periodical delivery, and so the only information it has about actual service received is
20 whatever monitoring system, like the Red Tag service, publishers maintain at their own expense.

21 In light of the attached data, and because of my frequent discussions with top distribution

ABP-T-2

1 managers for other publishing companies around the country, I am amazed that USPS witness
2 O'Hara thinks that periodicals have a "moderately high" value of service "in terms of intrinsic
3 service characteristics." (O'Hara testimony, pp.29-30.) Since the USPS knows from the Red Tag
4 reports and other input it regularly receives from individual publishers that periodical service is
5 below-par and getting worse, I do not understand the assumption that periodicals should pay
6 more postage for worse service.

7 I suppose that other witnesses using other classes of mail will also be making claims
8 about poor service, and that this hearing record can develop into a "mine is worse than yours"
9 scenario. I do not have statistics on Standard mail performance (and either, as I understand it,
10 does the Postal Service). I would stress, however, that late delivery of periodicals is a most
11 serious concern, because (unlike many other types of mail) most periodicals cannot be prepared
12 well in advance and lose much of their value if delivered even a couple of days late.

13 AUTOMATION

14 The discriminatory way that the USPS has implemented flats automation also calls for
15 restraint with respect to periodical rates in this case.

16 We are aware that mailer preparation along with USPS processing of the mail is vital to
17 timely delivery, and we do what we can given the nature of our product. In January of 1996
18 Crain purchased and implemented new presort software. The main reasons for this purchase
19 were to obtain the best possible presort and to comply with the July 1, 1996 changes in presort,
20 sack and pallet tags rules, changes in postal statement forms and other changes associated with

ABP-T-2

1 "Classification Reform." The new software allows us to presort some of our mail to the carrier
2 route. However, the amount of carrier route sorts is limited, because most of our publications
3 are distributed nationally and have relatively small circulation, like most national publications.

4 We all know that on September 20, 1992, a barcode discount was implemented for flat
5 mailpieces meeting the automation requirement. As the list of our periodicals demonstrates,
6 most of the Crain publications are tabloid size publications. They therefore do not meet the
7 height requirements for automation compatibility on present USPS equipment. An ABP member
8 survey this year indicates that its respondents alone could have barcoded an additional roughly
9 240 million pieces annually, and there would obviously be additional volumes from non-
10 respondents and non-members.

11 Indeed, I understand that a group of associations (including ABP) and companies advised
12 the Postal Service that more than 430 million additional barcoded flats annually could be
13 processed by the yet to be deployed FSM 1000s equipped with barcode readers. I think that even
14 this number must understate the potential added barcoded flats volumes that USPS can expect,
15 since the survey of the mailing industry had relatively few respondents. Automated handling of
16 these volumes will cut postal costs significantly, and ought to prevent USPS from again having
17 to profess disappointment, as witness Moden did when he said that "Participation in flats
18 barcoding has been below expectations." Direct Testimony of USPS Witness Moden,
19 USPS-T-4, p. 11.

20 In contrast, Witness Moden describes the progress the USPS has made in barcoding
21 letters, where approximately 87% of total incoming secondary letters at processing facilities are

ABP-T-2

1 in automated operations, as contrasted with only 28% of non-carrier route flats. Periodicals have
2 had the greatest difficulty with the size limitations imposed by USPS automation preparation
3 rules. For example Witness Moden replied to an ABP interrogatory (transcript, page 5622) that
4 the percentage growth in barcoded flat mail through AP/9, FY 1997, compared with the same
5 period in FY 1996, was 250% for First class, 50.8% for Standard mail, and only 21.6% for
6 Periodicals. I believe this disparity between the classes exists because, unlike First class and
7 Standard mail, a significant number of Periodicals are tabloid sized or newspapers. This is an
8 obvious fact that the USPS should have, but did not, take into account when it purchased the
9 FSM 881 flats sorters, which are incompatible with the sizes of tabloids, newspapers, digest and
10 other kinds of common periodicals.

11 While I am hopeful the FSM 1000 will allow tabloids to become automation compatible,
12 I am concerned that the USPS has not set a time for tabloids to be eligible for the barcode
13 discount, and that the Governors authorized purchase of barcode readers for the FSM 1000 only
14 at their recent December 2, 1997 meeting. In any event, tabloids apparently will be mechanically
15 sorted on the FSM 1000 over the next year, and we hope that their barcodes will soon allow
16 further cost avoidance. We certainly hope that tabloids will be less expensive to handle and will
17 become eligible for a barcode discount by the time the new rates go into effect. However, since
18 USPS has proposed only a partial passthrough of processing savings through the discount, there
19 is an incentive for the USPS to purchase barcode readers promptly and enjoy productivity gains
20 while offering the discount.

ABP-T-2

1 **RATE IMPACT OF AUTOMATION RESTRICTIONS**

2 Because of the rate increases of 1996 (resulting from "Classification Reform"), which
3 impacted especially heavily on non-automated rates, Crain's annual postage increased by 5.5
4 percent, which amounts to nearly \$500,000.

5 In the rate changes since the most recent "general" rate case in 1994, it is the non-
6 automated per-piece rates that have been increased the most, even if those non-automated pieces
7 were sorted to five digits or unique three digit zip codes. The 3/5 digit per piece rate went up
8 10.4% when the reclassification case rates were imposed last year, and USPS would raise rates
9 for these presorted pieces by another 7.4% for 3 digit sorted pieces and 5.9% for five digit sorted
10 pieces if the rates proposed in this case are approved. As for basic pieces (the least presorted
11 pieces), the non-automated per-piece rates went up 3.5% in the reclassification aftermath, and
12 would go up yet another 9.6% under the current USPS proposal. According to its witnesses in
13 this case, USPS considers increases over 10% to cause "rate shock" and strove to keep the
14 overall rate increases well below 10%. Crain and other tabloid publishers have come to know
15 rate shock quite well. We have paid far higher than average increases because of the tardiness in
16 deployment of equipment that could have saved USPS and publishers enormous expense.

17 Crain and other publishers told the USPS as far back as 1992 that we would be willing to
18 barcode tabloids. Because of the poor service received by Periodicals, and because many
19 publishers incurred such a heavy hit as a result of the rate changes caused by Docket MC95-1,
20 the rates proposed by the USPS should be the maximum recommended by the PRC.

Attachment to
Direct Testimony of Joyce McGarvy
Page 1 of 10

(ABP-T-2)

RED TAG NEWS PUBLICATIONS ASSOCIATION
CONSOLIDATED ENTRY STATISTICS
FOR PERIOD 1/01/96 - 12/16/96
DATE RUN 11/13/97
PG # 1

Entry:	Monitors Reports	On		1 Day		2 Day		3 +		1 Day		2 Day		3 +	
		Time	Late	Time	Late	Time	Late	Time	Late	Time	Late	Time	Late	Time	Late
	20	2	5	1	12	101	251	51	601						
Total	20	2	5	1	12	101	251	51	601						
00 Entry: AD NEW YORK, NY	177	157	15	3	2	891	81	21	11						
91 Entry: AD PHILADELPHIA, PA	59	41	8	6	4	591	141	101	71						
00 Entry: AD WASHINGTON, DC	84	51	15	8	10	611	181	101	121						
03 Entry: AD ATLANTA, GA	46	23	21	2	0	501	461	41	01						
00 Entry: AD LOS ANGELES, CA	167	121	21	18	7	721	131	111	41						
41 Entry: AD SAN FRANCISCO, CA	54	5	44	4	1	91	811	71	21						
Total	587	398	124	41	24	661	211	71	61						
00 Entry: MD NEW YORK, NY	188	146	15	14	13	781	81	71	71						
52 Entry: MD PITTSBURGH, PA	49	23	23	1	2	471	471	21	41						
10 Entry: MD BALTIMORE, MD	127	93	21	5	8	731	171	41	61						
41 Entry: MD CLEVELAND, OH	48	25	14	5	4	521	291	101	81						
12 Entry: MD CINCINNATI, OH	27	27	0	0	0	1001	01	01	01						
12 Entry: MD DETROIT, MI	44	40	1	0	3	511	21	01	71						
16 Entry: MD CHICAGO, IL	89	81	3	4	1	911	31	41	11						
'2 Entry: MD PORTLAND, OR	67	45	15	5	2	671	221	71	31						
11 Entry: MD SEATTLE, WA	47	9	13	11	14	191	281	231	301						
Total	686	489	105	45	47	691	181	71	61						
0 Entry: NY WASHINGTON, DC	137	106	14	9	8	771	101	71	61						
Total	137	106	14	9	8	701	171	71	61						
1 Entry: PO SPRINGFIELD, MA	544	268	155	30	91	491	281	61	171						
5 Entry: PO WORCESTER, MA	91	72	13	5	1	791	141	51	11						
1 Entry: PO MIDDLESEX-ESSEX, MA	41	33	7	0	1	801	171	01	21						
1 Entry: PO AMF BOSTON	1877	1681	1164	550	482	431	301	141	121						
1 Entry: PO HARTFORD, CT	600	319	221	35	25	531	371	61	41						
1 Entry: PO NEW HAVEN, CT	98	50	31	6	11	511	321	61	111						
1 Entry: PO STAMFORD, CT	224	163	38	16	7	731	171	71	31						
Total	6913	3582	1881	739	711	521	271	111	101						

RED TAG NEWS PUBLICATIONS ASSOCIATION
CONSOLIDATED ENTRY STATISTICS

FOR PERIOD 1/01/96 - 12/16/96

DATE RUN 11/13/97
PG 2

Entry #	Entry:	State	Months			Total					
			On	2 Day	3 +						
Report #	Time	Report #	Time	Report #	Time	Report #					
070	Entry: PO	NEWARK, NJ	1271	438	486	144	203	348	388	118	168
071	Entry: PO	AMP NEWARK, NJ	217	60	73	38	46	288	348	188	218
075	Entry: PO	PATTERSON, NJ	17	6	7	6	18	168	198	168	498
089	Entry: PO	NEW BRUNSWICK, NJ	118	72	34	8	4	618	298	78	31
100	Entry: PO	NEW YORK, NY	8296	4419	1933	1005	909	538	238	128	138
105	Entry: PO	MT. VERNON, NY	296	296	302	103	97	378	388	138	128
110	Entry: PO	QUEENS, NY	13	8	4	1	0	628	318	88	08
112	Entry: PO	BROOKLYN, NY	13	3	3	1	4	238	238	238	318
113	Entry: PO	FLUSHING, NY	237	136	57	28	16	578	248	128	78
118	Entry: PO	RICKSVILLE, NY	148	118	17	9	4	808	118	68	38
122	Entry: PO	ALBANY, NY	20	8	1	6	5	408	58	308	258
142	Entry: PO	BUFFALO, NY	513	167	109	123	114	338	218	248	228
152	Entry: PO	AMP PITTSBURGH, PA	992	801	156	26	9	818	168	38	18
171	Entry: PO	HARRISBURG, PA	516	249	146	66	55	488	288	138	118
180	Entry: PO	EASTON, PA	1108	231	267	217	392	238	248	208	358
191	Entry: PO	PHILADELPHIA, PA	4379	2079	1097	601	602	478	258	148	148
193	Entry: PO	SOUTHEASTERN PA	146	71	50	10	15	498	348	78	108
198	Entry: PO	WILMINGTON, DE	86	52	25	7	2	608	298	88	28
200	Entry: PO	WASHINGTON, DC	3334	1822	781	339	392	558	238	108	128
208	Entry: PO	GAITHERSBURG, MD	44	4	13	10	17	98	308	238	398
210	Entry: PO	BALTIMORE, MD	431	156	137	82	56	368	328	198	138
220	Entry: PO	NORTHERN VA	1352	792	307	128	125	598	238	98	208
221	Entry: PO	MERRIFIELD, VA	185	51	58	39	37	288	318	218	208
274	Entry: PO	GREENSBORO, NC	170	61	62	18	29	368	368	118	178
276	Entry: PO	RALEIGH, NC	620	287	200	76	57	468	328	128	98
282	Entry: PO	AMP CHARLOTTE, NC	177	38	60	35	44	348	208	258	258
300	Entry: PO	NORTH HERO, GA	302	143	87	32	40	478	298	118	138
303	Entry: PO	ATLANTA, GA	3458	1067	938	531	922	318	278	158	278
322	Entry: PO	AMP JACKSONVILLE, FL	344	193	80	26	45	568	238	88	138
328	Entry: PO	AMP ORLANDO, FL	1522	382	427	304	409	258	288	208	278
331	Entry: PO	AMP MIAMI, FL	1735	435	438	357	525	258	248	218	308
334	Entry: PO	WEST PALM BEACH, FL	25	5	9	2	9	208	368	88	368
336	Entry: PO	TAMPA, FL	414	205	126	44	39	508	308	118	98
344	Entry: PO	OCALA, FL	13	2	6	4	1	158	468	318	88
352	Entry: PO	BIRMINGHAM, AL	285	50	101	74	60	188	358	268	218
372	Entry: PO	HASSELL, TN	530	140	125	128	137	268	248	248	268
TOTAL			40755	18628	10580	5398	6149	461	268	138	158

RED TAG NEWS PUBLICATIONS ASSOCIATION
 CONSOLIDATED ENTRY STATISTICS
 FOR PERIOD 1/01/96 - 12/16/96

DATE RUN 11/13/97
 PG # 3

	Monitors	On	1 Day	2 Day	3 +	On	1 Day	2 Day	3 +
	Reports	Time	Late	Late	Late	Time	Late	Late	Late
91 Entry: PO MEMPHIS, TN	496	185	172	80	59	37%	35%	16%	12%
02 Entry: PO LOUISVILLE, KY	9	3	0	3	3	33%	0%	33%	33%
10 Entry: PO COVINGTON, KY	1125	230	200	209	486	20%	18%	19%	43%
11 Entry: PO AMP CLEVELAND, OH	499	341	113	13	32	68%	23%	3%	6%
32 Entry: PO CINCINNATI, OH	2376	777	669	449	481	33%	28%	19%	20%
52 Entry: PO INDIANAPOLIS, IN	13	1	3	8	7	5%	16%	42%	37%
32 Entry: PO DETROIT, MI	1514	756	352	167	239	50%	23%	11%	16%
31 Entry: PO ELKHORN, WI	681	199	233	104	145	29%	34%	15%	21%
32 Entry: PO AMP MILWAUKEE, WI	169	102	23	18	24	60%	15%	11%	14%
35 Entry: PO WATERLOO, WI	1042	568	312	108	54	55%	30%	10%	5%
31 Entry: PO ST. PAUL, MN	583	222	187	108	68	38%	32%	18%	12%
10 Entry: PO PALATINE, IL	1021	598	213	113	97	59%	21%	11%	10%
11 Entry: PO CAROL STREAM, IL	2970	1045	960	481	484	35%	32%	16%	16%
14 Entry: PO ROUTE SUBURBAN, IL	834	361	206	89	178	43%	25%	11%	21%
16 Entry: PO CHICAGO, IL	13677	4898	3431	2305	3043	36%	25%	17%	22%
11 Entry: PO AMP ST. LOUIS, MO	527	290	135	60	42	55%	26%	11%	8%
11 Entry: PO KANSAS CITY, MO	1486	237	255	281	713	16%	17%	19%	48%
1 Entry: PO AMP NEW ORLEANS, LA	479	138	196	66	79	29%	41%	14%	16%
1 Entry: PO OKLAHOMA CITY, OK	38	10	19	1	8	26%	50%	3%	21%
1 Entry: PO AMP TULSA, OK	414	88	148	80	98	21%	36%	19%	24%
2 Entry: PO DALLAS, TX	3384	899	1169	640	676	27%	35%	19%	20%
0 Entry: PO AMP HOUSTON, TX	1901	795	588	266	252	42%	31%	14%	13%
2 Entry: PO AMP DENVER, CO	2857	1615	723	276	243	57%	25%	10%	9%
1 Entry: PO SALT LAKE CITY, UT	63	14	27	9	13	22%	43%	14%	21%
0 Entry: PO AMP PHOENIX, AZ	829	255	288	147	139	31%	35%	18%	17%
0 Entry: PO AMP LOS ANGELES, CA	6827	1531	1568	864	864	52%	23%	13%	13%
3 Entry: PO INGLEWOOD, CA	467	231	141	49	46	49%	30%	10%	10%
1 Entry: PO LONG BEACH, CA	96	69	19	5	3	72%	20%	5%	3%
Entry: PO PASADENA, CA	180	113	53	7	7	63%	25%	4%	4%
Entry: PO VAN NUYS, CA	391	295	77	11	8	75%	20%	3%	2%
Entry: PO ALHAMBRA, CA	178	147	22	6	3	83%	12%	3%	2%
Entry: PO SAN DIEGO, CA	180	134	41	2	3	74%	23%	1%	2%
Entry: PO SANTA ANA, CA	121	91	20	6	4	75%	17%	5%	3%
Entry: PO AMP SAN FRANCISCO, CA	4801	2762	1166	486	387	58%	24%	10%	8%
Entry: PO OAKLAND, CA	456	266	125	27	32	59%	27%	6%	8%
Entry: PO NORTH BAY, CA	142	116	19	2	5	82%	13%	1%	4%
Total	93590	41012	24454	12244	15180	44%	26%	14%	16%

Attachment to
 Direct Testimony of Joyce McGarvy
 Page 3 of 10

(APP-1-

NOV 18 '97 11:25 FR CRAIN COMMUNICATIONS 313 446 1650 TO 914109929540

P.08

15308

Attachment to
Direct Testimony of Joyce McGarvy
Page 4 of 10

(ABP-T-2)

RED TAG NEWS PUBLICATIONS ASSOCIATION
CONSOLIDATED ENTRY STATISTICS
FOR PERIOD 1/01/96 - 12/16/96
DATE RUN 11/13/97
PC 4

	Entry: PO	Monitors Reports	1 Day		2 Day		3 +		1 Day		2 Day		3 +	
			On Time	Late	On Time	Late	On Time	Late	On Time	Late	On Time	Late	On Time	Late
51	SAN JOSE, CA	447	253	138	38	38	38	38	574	314	94	94	44	44
58	HONOLULU, HI	149	43	36	31	31	39	294	240	210	210	264	264	
72	PORTLAND, OR	225	76	68	40	40	21	344	394	181	181	94	94	
81	AMF SEATTLE, WA	2712	1305	875	331	331	201	484	324	124	124	71	71	
	PO Total	95691	41692	25343	13288	13288	15368	444	264	144	144	164	164	
	Total	97121	42687	25591	13384	13384	15459	444	264	144	144	164	164	

RED TAG NEWS PUBLICATIONS ASSOCIATION
 CONSOLIDATED ENTRY STATISTICS
 FOR PERIOD 1/04/97 - 10/27/97

DATE RUN 11/13/97
 PG # 1

			Monitors	On	1 Day	2 Day	3 +	On	1 Day	2 Day	3 +
			Reports	Time	Late	Late	Late	Time %	Late %	Late %	Late %
Entry:			95	58	20	11	6	61%	21%	12%	6%
	Total		95	58	20	11	6	61%	21%	12%	6%
00	Entry: AD	NEW YORK, NY	117	107	5	2	3	91%	4%	2%	3%
91	Entry: AD	PHILADELPHIA, PA	50	44	5	1	0	88%	10%	2%	0%
00	Entry: AD	WASHINGTON, DC	80	75	4	0	1	94%	5%	0%	1%
03	Entry: AD	ATLANTA, GA	52	45	6	1	0	87%	12%	2%	0%
00	Entry: AD	LOS ANGELES, CA	65	56	4	3	2	86%	6%	5%	3%
	AD	Total	364	327	24	7	6	84%	10%	4%	3%
00	Entry: ND	NEW YORK, NY	144	103	11	17	13	72%	8%	12%	9%
52	Entry: ND	PITTSBURGH, PA	42	19	18	5	0	45%	43%	12%	0%
10	Entry: ND	BALTIMORE, MD	113	75	22	7	9	66%	19%	6%	8%
41	Entry: ND	CLEVELAND, OH	42	13	21	4	4	31%	50%	10%	10%
82	Entry: ND	DETROIT, MI	32	29	2	0	1	91%	6%	0%	3%
06	Entry: ND	CHICAGO, IL	65	61	3	0	1	94%	5%	0%	2%
72	Entry: ND	PORTLAND, OR	57	42	9	3	3	74%	16%	5%	5%
81	Entry: ND	SEATTLE, WA	36	12	9	7	8	33%	25%	19%	22%
	ND	Total	531	354	95	43	39	75%	14%	6%	5%
10	Entry: NW	WASHINGTON, DC	96	73	12	6	5	76%	13%	6%	5%
	NW	Total	96	73	12	6	5	75%	14%	6%	5%
1	Entry: PO	SPRINGFIELD, MA	451	277	103	52	59	56%	21%	11%	12%
6	Entry: PO	WORCESTER, MA	77	71	6	0	0	92%	8%	0%	0%
1	Entry: PO	BOSTON, MA	3063	1323	852	454	434	43%	28%	15%	14%
1	Entry: PO	HARTFORD, CT	572	233	229	79	31	41%	40%	14%	5%
5	Entry: PO	NEW HAVEN, CT	79	62	16	1	0	78%	20%	1%	0%
9	Entry: PO	STAMFORD, CT	299	259	29	5	6	87%	10%	2%	2%
0	Entry: PO	NEWARK, NJ	1312	710	331	113	158	54%	25%	9%	12%
1	Entry: PO	AMP NEWARK, NJ	210	93	67	20	30	44%	32%	10%	14%
9	Entry: PO	NEW BRUNSWICK, NJ	131	74	39	15	3	56%	30%	11%	2%
	Total		7329	3920	1823	807	779	53%	25%	11%	11%

Attachment to
 Direct Testimony of Joyce McGarvy
 Page 5 of 10

(ABP-T-2)

NOV 18 '97 11:26 FR CRAIN COMMUNICATIONS 313 446 1650 TO 914109929540 P.10

15310

Attachment to
Direct Testimony of Joyce McGarvy
Page 6 of 10

(ABP-T

RED TAG NEWS PUBLICATIONS ASSOCIATION
CONSOLIDATED ENTRY STATISTICS
FOR PERIOD 1/06/97 - 10/27/97
DATE RUN 11/13/97
PG 1 2

Entry: PO	Monitors Reports	On Time	1 Day Late	2 Day Late	3 + Late	On Time	1 Day Late	2 Day Late	3 + Late
.00 Entry: PO NEW YORK, NY	6646	3629	1469	743	805	551	221	111	121
.05 Entry: PO MT. VERNON, NY	669	353	195	66	55	531	291	101	81
.11 Entry: PO FLUSHING, NY	217	161	26	14	16	741	121	61	71
.16 Entry: PO HICKSVILLE, NY	160	110	37	11	2	691	231	71	11
.22 Entry: PO ALBANY, NY	40	6	13	11	8	151	231	331	201
.42 Entry: PO BUFFALO, NY	7226	4069	1044	465	840	671	141	61	121
.52 Entry: PO AMF PITTSBURGH, PA	786	555	100	30	13	711	231	51	21
.71 Entry: PO HARRISBURG, PA	377	143	114	61	59	381	301	161	161
.80 Entry: PO EASTON, PA	988	205	158	188	437	211	161	131	441
.91 Entry: PO PHILADELPHIA, PA	3541	1517	938	500	586	431	261	141	171
.93 Entry: PO SOUTHEASTERN PA	81	41	33	6	1	511	411	71	11
.98 Entry: PO WILMINGTON, DE	76	36	32	3	5	471	421	41	71
.00 Entry: PO WASHINGTON, DC	2379	1753	629	250	339	591	211	91	111
.10 Entry: PO BALTIMORE, MD	406	204	96	57	49	501	241	141	121
.20 Entry: PO NORTHERN VA	1206	758	250	91	107	631	211	81	91
.21 Entry: PO HERRIFIELD, VA	146	66	29	29	22	451	201	201	151
.74 Entry: PO GREENSBORO, NC	352	97	87	52	116	281	251	151	331
.76 Entry: PO RALEIGH, NC	610	227	190	87	106	371	311	141	171
.82 Entry: PO AMF CHARLOTTE, NC	238	37	61	51	89	161	261	211	371
.00 Entry: PO NORFOLK METRO, GA	292	114	75	40	63	391	261	141	221
.03 Entry: PO ATLANTA, GA	2368	642	685	505	1136	221	231	171	381
.22 Entry: PO AMF JACKSONVILLE, FL	334	160	81	33	60	481	241	101	181
.28 Entry: PO AMF ORLANDO, FL	980	176	267	210	327	181	271	211	331
.31 Entry: PO MIAMI, FL	1363	262	259	211	631	191	191	151	461
.36 Entry: PO TAMPA, FL	325	107	85	64	65	331	271	201	201
.52 Entry: PO BIRMINGHAM, AL	300	48	65	68	113	161	221	231	401
.72 Entry: PO NASHVILLE, TN	628	160	120	141	207	251	191	221	331
.81 Entry: PO MEMPHIS, TN	578	223	180	100	75	391	311	171	131
.02 Entry: PO LOUISVILLE, KY	36	13	9	6	8	361	251	171	221
.10 Entry: PO COVINGTON, KY	385	60	55	61	209	351	141	161	541
.41 Entry: PO AMF CLEVELAND, OH	488	313	102	28	45	641	211	61	91
.52 Entry: PO CINCINNATI, OH	1950	471	359	362	758	241	181	191	391
.52 Entry: PO INDIANAPOLIS, IN	149	21	37	27	64	141	251	181	431
.92 Entry: PO DETROIT, MI	1476	688	363	188	237	471	251	131	161
.91 Entry: PO ELKHORN, WI	578	211	176	98	93	371	301	171	161
.12 Entry: PO AMF MILWAUKEE, WI	289	160	65	24	40	551	221	81	141
Total	47205	22517	10399	5710	8579	481	221	121	181

RED TAG NEWS PUBLICATIONS ASSOCIATION
 CONSOLIDATED ENTRY STATISTICS
 FOR PERIOD 1/06/97 - 10/27/97

DATE RUN 11/12/97
 PG 3

		Monitors	On	1 Day	2 Day	3 +	On	1 Day	2 Day	3 +		
		Reports	Time	Late	Late	Late	Time	Late	Late	Late		
535	Entry: PO	WATERLOO, WI	892	470	238	103	81	531	271	121	91	
551	Entry: PO	ST. PAUL, MN	723	242	229	131	121	331	321	181	171	
600	Entry: PO	WOODSTOCK, IL	835	375	206	120	134	451	251	141	161	
601	Entry: PO	FOREST PARK, IL	2362	648	740	433	541	271	311	181	231	
604	Entry: PO	SOUTH SUBURBAN, IL	693	311	165	63	154	451	241	91	221	
606	Entry: PO	CHICAGO, IL	10713	3485	2641	1820	2767	331	251	171	261	
631	Entry: PO	AMF ST. LOUIS, MO	559	294	150	45	70	531	271	81	131	
641	Entry: PO	KANSAS CITY, MO	1410	331	220	216	643	211	161	151	461	
671	Entry: PO	ALBUQUERQUE, NM	47	27	15	3	2	571	321	61	41	
701	Entry: PO	NEW ORLEANS, LA	652	173	201	72	201	271	321	111	311	
731	Entry: PO	OKLAHOMA CITY, OK	41	8	16	10	7	201	391	241	171	
741	Entry: PO	AMF TULSA, OK	434	47	158	76	153	111	361	181	351	
752	Entry: PO	DALLAS, TX	2840	698	768	604	770	251	271	211	271	
770	Entry: PO	AMF HOUSTON, TX	1774	665	610	256	243	371	341	141	141	
802	Entry: PO	DENVER, CO	2392	975	744	356	317	411	311	151	131	
841	Entry: PO	SALT LAKE CITY, UT	462	180	133	77	66	391	301	171	141	
850	Entry: PO	PHOENIX, AZ	594	135	151	130	178	231	251	221	301	
900	Entry: PO	LOS ANGELES, CA	5584	2886	1375	611	712	521	251	111	131	
903	Entry: PO	INGLEWOOD, CA	348	184	71	22	71	531	201	61	201	
908	Entry: PO	LONG BEACH, CA	19	10	7	2	0	531	371	111	01	
911	Entry: PO	PASADENA, CA	97	53	31	4	9	551	321	41	91	
913	Entry: PO	SANTA CLARITA, CA	10	6	3	0	1	601	301	01	101	
914	Entry: PO	VAN NUYS, CA	299	209	59	25	6	701	201	81	21	
918	Entry: PO	ALHAMBRA, CA	106	91	12	2	1	861	111	21	11	
921	Entry: PO	SAN DIEGO, CA	187	153	22	9	3	821	121	51	21	
927	Entry: PO	SANTA ANA, CA	49	16	18	9	6	331	371	181	121	
941	Entry: PO	SAN FRANCISCO, CA	3291	1585	889	383	434	481	271	121	131	
946	Entry: PO	OAKLAND, CA	515	291	133	36	55	571	261	71	111	
949	Entry: PO	NORTH BAY, CA	146	97	28	7	14	661	191	51	101	
951	Entry: PO	SAN JOSE, CA	256	96	87	38	35	381	341	151	141	
968	Entry: PO	HONOLULU, HI	176	48	65	34	29	271	371	191	161	
972	Entry: PO	PORTLAND, OR	365	192	112	44	17	531	311	121	51	
81	Entry: PO	SEATTLE, WA	2448	770	843	481	354	311	341	201	141	
		PO	Total	87416	37449	21391	11860	16716	431	241	131	181
			Total	80502	38261	21542	11927	16772	431	241	131	191

Attachment to
 Direct Testimony of Joyce McGarvy
 Page 7 of 10

(ABP-T-2)

NOV 18 '97 11:27 FR CRAIN COMMUNICATIONS 313 446 1650 TO 914109929540 P.12

15312

Attachment to
Direct Testimony of Joyce McGarvy
Page 8 of 10

(ABP-T-2)

AD TAG NEWS PUBLICATIONS ASSOCIATION
DATE RUN 11/13/97
PG 1 1
CONSOLIDATED ENTRY STATISTICS
FOR PERIOD 1/02/95 - 12/11/95

Entry #	Entry	City	Monitors On		1 Day		2 Day		3 +		1 Day		2 Day		3 +		
			Reports	Time	On	Late	On	Late	On	Late	On	Late	On	Late			
100	Entry: AD	NEW YORK, NY	99	02	9	0	0	0	0	0	0	0	0	0	0	0	0
191	Entry: AD	PHILADELPHIA, PA	37	18	9	6	4	498	240	160	110	110	110	110	110	110	110
200	Entry: AD	WASHINGTON, DC	194	94	12	5	3	810	120	50	31	31	31	31	31	31	31
303	Entry: AD	ATLANTA, GA	55	32	18	2	3	508	130	80	51	51	51	51	51	51	51
331	Entry: AD	MIAMI	17	16	1	0	0	348	60	0	0	0	0	0	0	0	0
401	Entry: AD	DETROIT, MI	13	1	3	6	3	80	230	460	230	230	230	230	230	230	230
752	Entry: AD	DALLAS, TX	11	2	4	5	0	188	360	450	0	0	0	0	0	0	0
900	Entry: AD	LOS ANGELES, CA	121	79	22	16	4	650	180	130	31	31	31	31	31	31	31
		AD Total	657	318	78	48	17	690	170	310	41	41	41	41	41	41	41
100	Entry: MD	NEW YORK, NY	327	243	53	18	13	740	160	60	41	41	41	41	41	41	41
152	Entry: MD	PITTSBURGH, PA	88	28	13	7	0	580	270	150	0	0	0	0	0	0	0
210	Entry: MD	BALTIMORE, MD	111	90	15	4	2	810	140	41	20	20	20	20	20	20	20
441	Entry: MD	CLEVELAND, OH	46	33	22	9	2	288	480	200	40	40	40	40	40	40	40
452	Entry: MD	CINCINNATI, OH	43	40	1	2	0	930	20	50	0	0	0	0	0	0	0
482	Entry: MD	DETROIT, MI	49	47	2	0	0	360	40	0	0	0	0	0	0	0	0
606	Entry: MD	CHICAGO, IL	170	116	36	13	3	680	220	80	20	20	20	20	20	20	20
900	Entry: MD	LOS ANGELES, CA	34	20	4	3	3	710	120	90	90	90	90	90	90	90	90
971	Entry: MD	PORTLAND, OR	87	62	19	5	1	710	220	60	10	10	10	10	10	10	10
981	Entry: MD	SEATTLE, WA	1	1	0	0	0	1000	0	0	0	0	0	0	0	0	0
		MD Total	916	664	167	61	24	710	180	80	31	31	31	31	31	31	31
200	Entry: RW	WASHINGTON, DC	138	100	23	6	9	720	170	40	70	70	70	70	70	70	70
		RW Total	138	100	23	6	9	720	170	40	70	70	70	70	70	70	70
011	Entry: PO	SPRINGFIELD, MA	431	243	134	29	23	570	330	70	50	50	50	50	50	50	50
016	Entry: PO	WORCESTER, MA	91	65	22	4	0	710	240	40	0	0	0	0	0	0	0
015	Entry: PO	MIDDLESEX-ESSEX, MA	73	59	10	3	1	810	140	40	10	10	10	10	10	10	10
021	Entry: PO	BOSTON, MA	4723	2027	1334	523	339	480	320	120	80	80	80	80	80	80	80
061	Entry: PO	HARTFORD, CT	483	228	146	68	51	460	300	140	100	100	100	100	100	100	100
063	Entry: PO	NEW HAVEN, CT	106	39	47	12	8	370	440	110	80	80	80	80	80	80	80
069	Entry: PO	STAMFORD, CT	217	172	26	6	13	790	120	30	60	60	60	60	60	60	60
070	Entry: PO	NEWARK, NJ	1273	509	425	174	165	400	330	140	130	130	130	130	130	130	130
		Total	6422	4422	2433	934	653	530	290	310	80	80	80	80	80	80	80

Attachment to
Direct Testimony of Joyce McGarvy
Page 9 of 10

(ABP-T-

DATE RUN 11/13/97
PG 1 2

RED TAG NEWS PUBLICATIONS ASSOCIATION
CONSOLIDATED ENTRY STATISTICS
FOR PERIOD 1/02/95 - 12/11/95

	Entry: PO	Monitors		1 Day		2 Day		3 +		1 Day		2 Day		3 +	
		On	Time	On	Late	On	Late	On	Late	On	Late	On	Late	On	Late
071	Entry: PO	642	253	190	101	101	98	391	301	161	151				
089	Entry: PO	106	47	51	4	4	4	441	481	41	41				
100	Entry: PO	10764	5359	2950	1336	1336	1119	501	271	121	101				
105	Entry: PO	844	353	315	96	96	80	421	371	111	91				
113	Entry: PO	270	196	52	12	12	10	731	191	41	41				
118	Entry: PO	298	145	126	18	18	9	491	421	61	31				
142	Entry: PO	432	160	76	120	120	76	371	181	281	181				
152	Entry: PO	660	518	112	25	25	5	781	171	41	11				
171	Entry: PO	465	175	149	75	75	66	381	321	161	141				
180	Entry: PO	1137	185	283	270	270	399	161	251	241	351				
191	Entry: PO	4754	2379	1284	605	605	486	501	271	131	101				
193	Entry: PO	95	56	30	5	5	4	591	321	51	41				
200	Entry: PO	3266	1803	729	403	403	331	551	221	121	101				
210	Entry: PO	304	126	113	35	35	30	411	371	121	101				
220	Entry: PO	1461	744	431	162	162	124	511	301	111	81				
221	Entry: PO	153	80	36	23	23	14	521	241	151	91				
232	Entry: PO	87	17	28	18	18	24	201	321	211	281				
274	Entry: PO	2593	1935	288	218	218	152	751	111	81	61				
276	Entry: PO	694	362	202	72	72	58	521	291	101	81				
282	Entry: PO	44	11	19	10	10	4	251	431	231	91				
300	Entry: PO	340	152	127	44	44	17	451	371	131	51				
303	Entry: PO	4627	1671	1266	712	712	778	381	291	161	181				
322	Entry: PO	198	81	60	21	21	34	421	301	111	171				
328	Entry: PO	883	330	328	136	136	89	371	371	151	101				
331	Entry: PO	2193	778	677	374	374	364	351	311	171	171				
336	Entry: PO	224	121	63	30	30	10	541	281	131	41				
352	Entry: PO	234	25	70	78	78	61	111	301	331	261				
372	Entry: PO	465	193	167	65	65	40	421	361	141	91				
381	Entry: PO	332	134	76	64	64	58	401	231	191	171				
430	Entry: PO	1113	293	241	201	201	378	261	221	181	341				
441	Entry: PO	861	454	245	92	92	70	531	281	111	81				
452	Entry: PO	2037	774	626	342	342	295	381	311	171	141				
482	Entry: PO	1421	763	356	167	167	135	541	251	121	101				
531	Entry: PO	665	255	224	113	113	74	381	341	171	111				
532	Entry: PO	146	62	27	23	23	34	421	181	161	231				
535	Entry: PO	934	475	287	100	100	72	511	311	111	81				
Total		53965	25891	14717	7105	7105	6252	481	271	131	121				

RED TAG NEWS PUBLICATIONS ASSOCIATION
 CONSOLIDATED ENTRY STATISTICS
 FOR PERIOD 1/02/95 - 12/11/95

DATE RUN 11/13/97
 PG # 3

	Monitors	On	1 Day	2 Day	3 +	On	1 Day	2 Day	3 +		
	Reports	Time	Late	Late	Late	Time	Late	Late	Late		
551	Entry: PO	ST. PAUL, MN	613	237	204	112	60	398	338	188	108
600	Entry: PO	PALATINE, IL	1037	555	251	109	122	548	248	118	128
601	Entry: PO	FOREST PARK, IL	2642	830	898	521	393	318	348	208	158
604	Entry: PO	SOUTH SUBURBAN, IL	813	382	214	105	112	478	268	138	148
606	Entry: PO	CHICAGO, IL	14507	5609	4011	2660	2227	398	288	188	158
631	Entry: PO	ST. LOUIS, MO	623	235	218	95	85	378	348	158	138
641	Entry: PO	KANSAS CITY, MO	1744	277	457	436	574	168	268	258	338
701	Entry: PO	AMF NEW ORLEANS, LA	412	69	188	74	81	178	468	188	208
741	Entry: PO	AMF TULSA, OK	312	79	110	85	38	258	358	278	128
752	Entry: PO	DALLAS, TX	4141	1250	1466	914	531	308	358	228	138
770	Entry: PO	AMF HOUSTON, TX	2267	808	781	405	273	368	348	188	128
802	Entry: PO	DENVER, CO	3098	1427	967	390	314	468	318	138	108
841	Entry: PO	SALT LAKE CITY, UT	103	15	32	39	17	158	318	388	178
850	Entry: PO	AMF PHOENIX, AZ	725	255	284	118	68	358	398	168	98
900	Entry: PO	AMF LOS ANGELES, CA	8308	4198	2180	1092	838	518	268	138	108
903	Entry: PO	INGLEWOOD, CA	472	304	94	34	40	648	208	78	88
908	Entry: PO	LONG BEACH, CA	56	46	6	4	0	828	118	78	08
911	Entry: PO	PASADENA, CA	224	160	39	12	13	718	178	58	68
914	Entry: PO	VAN NUYS, CA	187	141	33	8	5	758	188	48	38
918	Entry: PO	ALHAMBRA, CA	208	187	12	3	6	908	68	18	38
921	Entry: PO	SAN DIEGO, CA	331	232	69	17	13	708	218	58	48
927	Entry: PO	SANTA ANA, CA	183	138	42	1	2	758	238	18	18
941	Entry: PO	AMF SAN FRANCISCO, CA	4506	2559	1236	423	288	578	278	98	68
946	Entry: PO	OAKLAND, CA	588	397	141	24	26	688	248	48	48
949	Entry: PO	NORTH BAY, CA	126	84	33	3	6	678	268	28	58
951	Entry: PO	SAN JOSE, CA	452	335	85	25	7	748	198	68	28
968	Entry: PO	HONOLULU, HI	149	45	51	26	27	308	348	178	188
972	Entry: PO	PORTLAND, OR	225	64	94	45	22	288	428	208	108
981	Entry: PO	AMF SEATTLE, WA	3159	1382	1077	475	225	448	348	158	78
	PO	Total	104671	47111	29701	15244	12615	458	288	148	128

Total 106182 48189 29969 15359 12665 458 288 148 128

Attachment to
 Direct Testimony of Joyce McGarvy
 Page 10 of 10

(ABP-T-2)

NOV 18 '97 11:30 FR GRAIN COMMUNICATIONS 313 446 1650 TO 914109929540

P.15

15315

Declaration

I, Joyce McGarvey, declare under penalty of perjury that the testimony filed by me in this preceding is true and correct to the best of my knowledge, information and believe.


Signature


Date

1 CHAIRMAN GLEIMAN: I have some written --
2 designated written cross-examination. I don't know whether
3 you have any corrections to the material that was
4 designated.

5 MR. STRAUS: I reviewed it and it looks accurate.

6 CHAIRMAN GLEIMAN: Do you have a statement of
7 authenticity with respect to the designated written cross
8 also?

9 MR. STRAUS: No, I don't, but that was submitted
10 with affidavits at the time.

11 CHAIRMAN GLEIMAN: Okay. Well, if it was
12 submitted -- sometimes the affidavits don't show up with the
13 responses. I am going to provide two copies to the reporter
14 and direct that the designated written cross-examination of
15 Witness McGarvey be received into evidence and transcribed
16 into the record at this point.

17 [Designation of Written
18 Cross-Examination of Joyce
19 McGarvey, ABP-T-2, was received
20 into evidence and transcribed into
21 the record.]

22
23
24
25

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, DC 20268-0001

Postal Rate and Fee Changes, 1997

Docket No. R97-1

DESIGNATION OF WRITTEN CROSS-EXAMINATION
OF AMERICAN BUSINESS PRESS
WITNESS JOYCE MCGARVY
(ABP-T2)

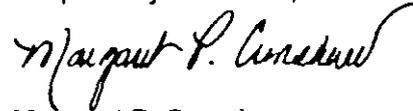
Party

United States Postal Service

Interrogatories

USPS/ABP-T2-1-4
USPS/ABP-T1-37 redirected to T2

Respectfully submitted,



Margaret P. Crenshaw
Secretary

INTERROGATORY RESPONSES OF
AMERICAN BUSINESS PRESS
WITNESS JOYCE MCGARVY (T2)
DESIGNATED AS WRITTEN CROSS-EXAMINATION

Interrogatory:

USPS/ABP-T1-37 rd. to T2

USPS/ABP-T2-1

USPS/ABP-T2-2

USPS/ABP-T2-3

USPS/ABP-T2-4

Designating Parties:

USPS

USPS

USPS

USPS

USPS

ANSWERS OF AMERICAN BUSINESS PRESS WITNESS MCGARVY TO INTERROGATORIES
USPS/ABP-T2-1-4

USPS/ABP.- T2-1

Please refer to your testimony on page 4, lines 6 to 8. Please confirm that "on time" delivery in these instances would be within one business day. If you do not confirm, please explain why not.

Answer

The on-time that I refer to in my testimony for most of the Crain publications is Monday, so that, when we mail on Saturday, that could be said to be within one business day.

ANSWERS OF AMERICAN BUSINESS PRESS WITNESS MCGARVY TO INTERROGATORIES
USPS/ABP-T2-1-4

USPS/ABP.-T2-2

Please refer to your testimony at page 5, lines 2 to 13, and the attachment to your testimony.

- (a) Please explain the data collection procedures used by Red Tag to obtain the data provided in the attachment to your testimony.
- (b) How were the 65 publications selected for monitoring?
- (c) How is "On Time" defined?
- (d) Please define "Monitors Reports" in the heading in the attachment?
- (e) Please provide the annual circulation for each of the 65 publications.
- (f) Are the cities listed in the attachment the entry point or destination for the publications? Please explain.
- (g) Please provide any additional data relating the zone of the mailing to thte data provided in the attachment.
- (h) Please provide any additional data relating the type of the periodical (e.g., newspaper, tabloid, regular magazine) to the data provided in the attachment.

Answer

- (a) The data provided in my testimony is a consolidated report of the publications monitored by Red Tag. To collect the data, a monitor is added to a publisher's subscriber list and the publication is mailed to the monitor each issue. Each monitor is assigned a monitor number and they are asked to call the Red Tag 800# to report the date they receive the publication.
- (b) Red Tag is a nonprofit association. Publishers of titles appearing weekly or more frequently must be full Red Tag Members to use the monitoring service. It is the publisher who decides which publication to monitor.
- (c) The USPS's published service standards are used to calculate on-time.
- (d) It is the actual number of reports used to calculate the consolidated reports.
- (e) Red Tag monitors a total of 65 publications. The publication, circulation figures, and frequency are on the attached document.

ANSWERS OF AMERICAN BUSINESS PRESS WITNESS MCGARVY TO INTERROGATORIES
USPS/ABP-T2-1-4

(f) The cities listed on the consolidated reports are the destination for the publications.

(g) I do not have this information.

(h) Please see the attached document.

USPS/ABP-T2-2 (e) (h)

RED TAG NEWS PUBLICATIONS			
			<i>ANNUAL</i>
<i>DAILY PUBLICATIONS</i>	<i>TRIM SIZE</i>	<i>CIRCULATION</i>	<i>CIRCULATION</i>
American Metal Market	Tabloid	10,299	2,677,740
Daily Total Annual Circulation		10,299	2,677,740
<i>BI - WEEKLY PUBLICATIONS</i>			
PC Magazine	Magazine	1,107,187	115,147,448
Bi-Weekly Total Annual Circulation		1,107,187	115,147,448
<i>WEEKLY PUBLICATIONS</i>			
Advertising Age	Tabloid	76,096	3,956,992
Amusement Business	Tabloid	9,691	503,932
Autoweek	Magazine	29,487	1,533,324
Billboard	Tabloid	30,905	1,607,060
Broadcasting & Cable	Magazine	27,203	1,414,556
Business Insurance	Tabloid	53,642	2,789,384
Chronicle of Higher Education	Tabloid	n/a	0
Communications Week	Tabloid	175,500	9,126,000
Computer Reseller News	Tabloid	103,060	5,359,120
Computerworld	Tabloid	145,415	7,561,580
Economist	Magazine	273,064	14,199,328
Electronic Buyers News	Tabloid	61,670	3,206,840
Electronic Engineering Times	Magazine	45,491	2,365,532
Electronic Media	Tabloid	26,404	1,373,008
Electronic News	Tabloid	26,150	1,359,800
Federal Computer Week	Tabloid	71,627	3,724,604
Footwear News	Tabloid	16,635	865,020
HFN	Tabloid	21,801	1,133,652
Information Week	Magazine	302,500	15,730,000
Infoworld	Tabloid	259,697	13,504,244
Inter@ctive Week	Tabloid	70,101	3,645,252
Macweek	Tabloid	100,107	5,205,564
Modern Healthcare	Magazine	90,110	4,685,720
Multichannel News	Tabloid	22,120	1,150,240
Nations Restaurant News	Tabloid	90,115	4,685,980
Network World	Tabloid	150,210	7,810,920
PC Week	Tabloid	270,858	14,084,616
Publishers Weekly	Magazine	39,737	2,066,324
RCR	Tabloid	28,000	1,456,000

USPS/ABP-T2-2 (e) (h)

SN (Supermarket News)	Tabloid	49,259	2,561,468
Soap Opera Digest	Digest	618,912	32,183,424
Telephony	Magazine	51,110	2,657,720
The National Law Journal	Magazine	n/a	0
The Sporting News	Magazine	600,000	31,200,000
Travel Age - East	Magazine	26,106	1,357,512
Travel Age - Mid.	Magazine	18,816	978,432
Travel Age - West	Magazine	32,558	1,693,016
Travel Agent	Magazine	52,500	2,730,000
Travel Weekly (Mon)	Tabloid	49,628	2,580,656
Variety	Tabloid	32,256	1,677,312
Video Business	Magazine	45,021	2,341,092
Waste News	Tabloid	41,345	2,149,940
Wireless Week	Tabloid	32,000	1,664,000
Weekly Total Annual Circulation		4,266,907	221,879,164
BI-MONTHLY PUBLICATIONS			
OAG N. America	Magazine	16,999	407,976
Bi-Monthly Total Annual Circulation		16,999	407,976
MONTHLY PUBLICATIONS			
AV Video	Magazine	70,000	840,000
Avionics	Magazine	22,500	270,000
Communications Technology	Magazine	24,998	299,976
Film Video	Magazine	28,528	342,336
Imaging Business	Magazine	28,954	347,448
International Cable	Magazine	10,147	121,764
National home Center News	n/a	n/a	0
Nursing Spectrum	n/a	n/a	0
P.C. Computing	Magazine	964,507	11,574,084
Rotor & Wing	Magazine	29,986	359,832
Wireless Business & Technology	Magazine	31,500	378,000
Smithsonian	Magazine	n/a	0
Monthly Total Annual Circulation		1,211,120	14,533,440
GRAND TOTAL			354,645,768

ANSWERS OF AMERICAN BUSINESS PRESS WITNESS MCGARVY TO INTERROGATORIES
USPS/ABP-T2-1-4

USPS/ABP-T2-3

Please provide the complete results of the ABP member survey mentioned in your testimony at page 7, lines 7 to 10.

Answer

The results of that survey were transmitted to the Postal Service by letter of January 21, 1997 from Stephen Feldman to Sheryl Johnson. Another copy of that letter, as well as a listing of the individual member responses (with company names deleted), are attached. I am willing to state that the fifth company listed is Crain Communications.

SPIEGEL & MCDIARMID

USPS/ABP-T2-3

GEORGE SPIEGEL, PC
 ROBERT C. MCDIARMID
 SANDRA J. STREBEL
 ROBERT A. JABLON
 JAMES N. HORWOOD
 ALAN J. ROTH
 FRANCIS E. FRANCIS
 DANIEL I. DAVIDSON
 PETER K. MATT
 DAVID R. STRAUS
 BONNIE S. BLAIR
 THOMAS C. TRAUGER
 JOHN J. CORBETT
 CYNTHIA S. BOGORAD
 DARY J. NEWELL
 SCOTT H. STRAUSS
 BEN FINKELSTEIN
 STEPHEN M. FELDMAN
 LISA G. DOWDEN
 RISE J. PETERS

1350 NEW YORK AVENUE, NW
 WASHINGTON, DC 20005-4798

TELEPHONE (202) 879-4000
 FACSIMILE (202) 393-2866
 EMAIL SPIEGEL@SPIEGEL.BECLTD.COM

DIRECT DIAL (202) 879-4009
 EMAIL FELDMANS@SPIEGEL.BECLTD.COM

January 21, 1997

PETER J. HOPKINS
 DAVID E. POMPER
 MARK S. HEGEDUS
 CAROLYN P. CARMODY
 WENDY B. LADER
 *MATTHEW W. WARD
 *JEFFREY A. SCHWARZ

OF COUNSEL
 LEE C. WHITE
 P. DANIEL BRUNER
 MARGARET A. MCGOLDRICK

PUBLIC AFFAIRS DIRECTOR
 KENNETH A. BROWN
(NOT A MEMBER OF THE BAR)
 GOVERNMENT AFFAIRS DIRECTOR
 *ROBERT L. ROACH

*MEMBER OF VA BAR ONLY
 *MEMBER OF MD BAR ONLY

Via Facsimile to 202-268-4336

Ms. Sheryl Johnson
 Business Mailing Requirements
 U.S. Postal Service
 Room 6801 475 L'Enfant Plaza S.W.
 Washington, D.C. 20260

Re: ABP Barcode Survey

Dear Sheryl:

Thirty-three (out of approximately 100) ABP member companies (which represent well over one-half of the annual circulation) of American Business Press, responded to our survey requesting data about additional automation qualifying periodicals volume that those companies would mail if barcode discounts were available to now non-qualifying copies, e.g. tabloids, polywrap, over one pound.

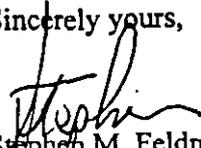
As of today's input, USPS can expect from ABP member periodicals alone 242,197,187 additional quantities of automation-compatible copies, if the discount is available to these now-excluded publications. This represents approximately 30% of all ABP volumes, some of which already qualify for barcode discounts. We believe ABP members generate about 10% of all regular-rate periodicals volume.

There may be additional volumes reported to us today or tomorrow. We will likewise forward that data to you. In the interest of time, however, we wanted you and USPS cost analysts to have this data as soon as we had the majority of responses so that a request to the Governors for funding barcode readers for the FSM-1000 could be made as soon as possible.

Ms. Sheryl Johnson
January 21, 1997
Page 2

Please call for any further clarification that you may need.

Sincerely yours,



Stephen M. Feldman

SMF:bf

cc: Gordon Hughes, President, American Business Press

USPS/ABP-T2-3

SURVEY OF ABP MEMBERS

Name of Company	Number of Copies
1	63,983,615
2	39,093,914
3	29,500,000
4	21,605,740
5	19,992,000
6	10,800,000
7	8,000,000
8	7,803,145
9	6,500,000
10	6,200,000
11	5,609,885
12	4,536,000
13	4,392,894
14	3,787,156
15	3,675,338
16	920,000
17	807,000
18	800,000
19	600,000
20	546,500
21	500,000
22	500,000
23	352,000
24	331,000
25	320,000
26	280,000
27	250,000
28	160,000
29	148,200
30	100,000
31	60,000
32	35,000
33	7,800
TOTAL	242,197,187

ANSWERS OF AMERICAN BUSINESS PRESS WITNESS MCGARVY TO INTERROGATORIES
USPS/ABP-T2-1-4

USPS/ABP-T2-4

Please refer to your testimony on page 9, lines 5 to 12.

- (a) Please confirm that the rates for the 'Carrier route,' 'High Density' and 'Saturation' presort levels are non-automated per piece rates. (See DMM §R200.1.2.) If you do not confirm, please explain why not.
- (b) Please confirm that the 'reclassification aftermath' you refer to (line 11) included a 14.3 percent reduction (from 13.9 cents to 11.9 cents) in the High Density rate, and 22.1 percent reduction (from 12.2 cents to 9.5 cents) in the Saturation rate. If you do not confirm, please explain why not.

Answer

- (a) That is exactly what I say twice on lines 5 and 6: non-automated piece rates.
- (b) I can confirm that the rates you cite, of which Crain and the majority of the country's publishers can take little or no advantage, were indeed lowered in the "aftermath" of the reclassification case. My point, of course, was that a "revenue neutral" change in rates can nevertheless produce rate increases for some mailers, and that those increases are not made easier to absorb – and may be harder to absorb – by the fact that some publishers' rates went down.

**ANSWER OF AMERICAN BUSINESS PRESS TO INTERROGATORY USPS/ABP-T1-37
REDIRECTED TO WITNESS MCGARVY**

USPS/ABP-T1-37. In response to USPS/ABP-T1-3, you provided a list of Crain Communications Inc. publications in June 1986 and June 1997.

- a. Does Crain Communications Inc. know generally how its mailings are prepared and how that preparation has changed for each of the last ten years? If so, please explain fully.
- b. Does Crain Communications Inc. have any general information about its mailings which would indicate, by year, the changes in make-up such as changes in average bundle size, changes in containerization, and the average number of bundles and pieces per container? If so, please explain fully.
- c. Does Crain Communications Inc. have any general information about its mailings which would indicate in percentage terms, what savings, if any, it has experienced in their mail preparation costs (excluding postage) due to changes in the make-up of their mailings. If so, please explain fully.
- d. Even if a percentage cannot be calculated for such savings, as requested in subpart (c) above, please indicate whether or not Crain Communications Inc. has experienced savings.

ANSWER

USPS/ABP-T1-37

- a. The preparation of the mail is extremely important to the on-time delivery of Crain's weekly, bi-weekly and monthly publications. Crain has always complied with the USPS's presort requirements. The preparation of the mail has changed over the past

**ANSWER OF AMERICAN BUSINESS PRESS TO INTERROGATORY USPS/ABP-T1-37
REDIRECTED TO WITNESS MCGARVY**

ten years due primarily to comply with changes in USPS requirements. I do not have knowledge of all of the presort changes that have taken effect during the past ten years.

- b. Crain has always presorted its mail to the finest presort level possible. The minimum package size is 6 copies and the maximum is 20 pounds. The containerization depends upon the publication and its distribution requirements. Crain uses all three methods of containerization: sacks, pallets, and co-pallets. The minimum sack size is always set for 6 pieces and the maximum is set for 50 pounds. Most of the pallets and co-pallets are a 500 pound minimum pallet, however, because of distribution requirements we do make some 250 pound pallets. We do not have available the data that would be responsive to the specific questions you have asked.
- c. I am not aware of any cost savings Crain has experienced in its mail preparation costs due to the changes in mail make-up.
- d. Because of our need to get the publication to the readers on-time we use airfreight to deposit much of our mail closer to its final destination. Ten years ago we deposited our mail in nine destination post offices. Although our circulation has not changed much in the past ten years, we now deposit our mail in 34 destination post offices. For this and other reasons, such as our increased use of pallets (for service reasons), our distribution costs have actually increased substantially in the past ten years.

ABP-T-3

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

) POSTAL RATE AND FEE CHANGES, 1997)
_____)

Docket No. R97-1

DIRECT TESTIMONY
OF
NICHOLAS CAVNAR
ON BEHALF OF
AMERICAN BUSINESS PRESS

David R. Straus
Thompson Coburn
700 14th Street, N.W.
Suite 900
Washington, D.C.
202-508-1000 (office)
202-508-1010 (facsimile)

Attorney for
American Business Press

December 30, 1997

847251

ABP-T-3

1 those positions, I came to my current post with direct working experience with a total of
2 seventy other publications.

3 I am currently a member of the American Business Press (ABP) Washington Legal
4 Committee, which develops postal policy for ABP. I also serve as one of ABP's
5 representatives on the Mailers Technical Advisory Committee (MTAC), and I am a member of
6 the association's Postal and Circulation Subcommittees. I am also a member of the Circulation
7 Management Advisory Committee to BPA International, which provides circulation auditing
8 services for more than 1,600 member periodicals.

9 As Intertec's Vice President, Circulation, my duties include responsibility for all
10 operations involved in maintaining subscriber records and delivering our publications to our
11 subscribers. We operate an in-house subscription fulfillment department serving more than 50
12 of our publications, so we produce our own postal sortation and labels, using Group 1
13 software, and are responsible for ensuring that our magazines meet requirements for
14 Periodicals status.

15 **PURPOSE OF TESTIMONY**

16 The purpose of my testimony is to explain in part ABP's position that the Commission should
17 recommend a periodical rate schedule no higher than that proposed by USPS. (Neither I nor
18 other ABP witnesses are endorsing any particular methodology used by USPS to arrive at those
19 rates however.) The Commission certainly should not adopt rates higher than those proposed
20 for regular-rate periodicals, for reasons expressed below.

ABP-T-3

DISCUSSION1
2
3
4
5
6
7
8

The increases proposed for regular-rate periodicals in this case come on the heels of recent increases paid by those periodicals that (a) cannot for the most part sort to carrier route and (b) do not at present qualify for automation (barcode) discounts. The magnitude of these increases is demonstrated in the comparative chart that follows, in which the R94-1 per-piece periodical regular rates by presort and automation status are compared with the corresponding per-piece charges adopted in the MC95-1 classification case (which for national publishers was a rate case in the end) and with the rates proposed by USPS in the current rate case.

ABP-T-3

TABLE 1¹

	R94-1	MC95-1	R97-1
EFFECTIVE DATE:	1/95	7/96	(Proposed)
NONAUTOMATION			
BASIC	23.2¢	24¢	26.3¢
(LEVEL A)			
3/5 DIGIT	18.3¢	20.2¢	21.7¢
(LEVEL B)	(five digit and selected three digit cities)	(five digit & unique 3 digits)	(three digit) 21.4¢ (five digit)
CARRIER ROUTE			
(LEVEL C)	13.9¢	11.9¢	12.8¢
AUTOMATION			
PER-PIECE RATES			
BASIC	20.6¢	20.9¢	22.1¢
(LEVEL A)			
3/5 DIGIT	16.6¢	17.5¢	18.8¢
(LEVEL B)			(three digit) 18.6¢ (five digit)
CARRIER ROUTE			
(LEVEL C)	13.9¢	11.9¢	12.8¢

2 I believe that even a cursory analysis of the above data shows what USPS Witness
3 O'Hara meant by "significant rate increases" when his testimony stated (at page 31) as
4 follows:

5 "The fact that smaller publications with geographically
6 dispersed circulation had recently experienced significant rate
7 increases as a result of Classification Reform was also taken into

¹ Please note that the 3/5 Digit Presort Category (formerly Level B) was re-named by Docket MC95-1, and that the rates proposed in this case, if approved, will implement rates for all presorted 3-digit packages that are distinct from 5-digit packages. At present, 3 digit packages, except for relatively few "unique" 3-digit codes, do not receive presort discounts and pay the higher "basic" rate.

ABP-T-3

1 account under criterion four."

2 I understand that criterion four, "[T]he effect of rate increases on the general public,
3 business mail users, and enterprises in the private sector of the economy engaged in the
4 delivery of mail matter other than letters," is a factor that must be considered in developing
5 markups that each subclass must bear. The statement by Witness O'Hara, however, is a rather
6 terse description of very significant changes in rates for publishers, changes that did not affect
7 other subclasses in the same way.

8 In our own company, where we can compare magazines of differing size and
9 geographic distribution, we have seen that "Classification Reform" did indeed amount to a rate
10 increase for smaller publications with dispersed circulation. Smaller publications lack the
11 densities needed to achieve a high level of carrier route or even five-digit sortation.
12 Consequently, these publications must mail a high percentage of copies at the basic and 3/5
13 digit rates, whether automation or non-automation, and they received the highest increases
14 under "Classification Reform".

15 In addition, a rule change implemented as part of "Classification Reform" required all
16 publishers to separate addresses without a nine-digit zip code from the automated mailstream.
17 Since no list can currently match 100 percent of addresses to the postal database used to assign
18 nine-digit codes, this rule effectively requires all publishers to mail a portion of their
19 subscriber copies as a separate mailstream, which is typically too small for effective sortation.
20 This change pushed yet more copies out of five-digit and three-digit sortation into an ADC
21 level at the basic rate, causing yet further increases in actual postage cost (even if not in rates).

ABP-T-3

1 Further adding to the cost burden of reclassification for periodicals mailers, the presort
2 requirements implemented from July 1, 1996 through January 1, 1997 were indeed "vastly
3 different," as attested to by Witness Moden (Transcript page 5617). The distribution network
4 was changed, with state distribution centers replaced by Area Distribution Centers (ADC).
5 Optional city package and sack preparation levels were eliminated, as were SCF packages and
6 sacks, and the minimum number of pieces for certain sack levels were increased.

7 These changes required many revisions to sortation software, which could not be
8 completed on time for the implementation dates, forcing publishers and fulfillment operations
9 to scramble for other means to produce labels. USPS did recognize these problems and
10 granted the industry extensions and waivers, but many publishers incurred additional costs
11 during this chaotic time in order to produce labels. My own company had to outsource our
12 mailing label production for five months, due to software problems, at a cost of more than
13 \$150,000.

14 In Intertec's experience, and that of other publishing companies with similar magazines,
15 the net impact of "Classification Reform" (once the dust of the transition had settled) was to
16 raise postal costs by 5 percent to 7 percent for most magazines with a circulation of 100,000 or
17 less. USPS Witness Taufique estimated a 7.8% increase after July, 1996 for a periodical sorted
18 to five digits, mailed to Zone 5, and containing 58% editorial content (the USPS average).
19 (Transcript page 4845). The USPS Marketing Department has estimated that a "national
20 magazine" would receive an additional 6.6% increase if the proposed USPS rates are
21 recommended. I agree with witness O'Hara that, under criterion four, the impact of this recent

ABP-T-3

1 increase should be taken into account in calculating the general effect of any additional increase
2 upon periodical publishers.

3 Witness O'Hara also stated (USPS-T30 at 30) that he took into consideration
4 ratemaking criterion eight--the "educational, cultural, scientific and informational value of the
5 mail" (ECSI) to moderate the cost coverage for periodical mail. However, he did not
6 elaborate upon this point. I believe this point deserves further discussion, especially in light of
7 the fact that publishers have been especially affected adversely by per-piece rate increases and
8 widening gaps between non-automated and automated per-piece rates.

9 Smaller circulation journals and periodicals, like the ones for which I am responsible,
10 carry business, educational, and scientific news that often is not replicated or reported in detail
11 by daily newspapers or by television and radio. This information has extremely high value to
12 the recipients, and to the economic and cultural health of our nation as a whole. My company
13 has come to appreciate the value of this information more than ever in the past year, when we
14 entered negotiations with government agencies in the People's Republic of China to establish
15 industry publications for that country. The Chinese government is extremely eager to offer its
16 developing industries access to the same technical and business information that is distributed
17 in this country through business publications.

18 Given the value of the information these publications provide, and the relatively high
19 increases that many have just experienced under "Classification Reform," I submit that ECSI
20 should be considered as a major factor (along with the factors discussed by other periodical
21 witnesses) in determining the appropriate cost coverage for periodicals in this case, and that the

ABP-T-3

1 cost coverage should not be higher than the 107% proposed by USPS.

2 As further argument to support restraint on cost coverage for periodicals, I would point
3 out that many periodicals continue to be restricted from taking full advantage of automation
4 discounts by limitations of the Postal Service's equipment and address technology. Witness
5 McGarvy and others will discuss the impact of the relatively slow deployment of equipment
6 (i.e. the FSM 1000 flats sorter and barcode readers) on tabloids and other periodical flats mail
7 that continues to pay the higher per-piece rates that apply to non-automated flats. My company
8 publishes six tabloids, including one weekly and three bi-weeklies, that would be able to
9 barcode and mail at automation rates today if the Postal Service had the right equipment
10 available now.

11 I, like Witness McGarvy, attended both MTAC and specially arranged meetings of the
12 ABP Postal Subcommittee with senior USPS operations and marketing managers to urge
13 quicker deployment of flats sorters designed for the real world of publishing. In other words,
14 while most magazines are standard trim, tabloids are an important part of the class, as are
15 magazines and tabloids of all sizes that are mailed in polybags for protection or to enclose
16 supplements. While some kinds of polywrap have now been approved by USPS for use with
17 the current FSM 881, the reality is that the most available and widely used polywrap materials
18 still cannot be accomodated by the FSM 881.

19 We sincerely hope that the FSM 1000 will be the open gateway for automation and
20 mechanized handling of flats that Witness Moden and others have told us that it will be. In the
21 meantime however, USPS' own statistics demonstrate that too few non-carrier route flats are

ABP-T-3

1 receiving mechanized handling, which not only increases our postal rates, but hampers
2 efficiency for the Postal Service.

3 Even for those periodicals without a size-related problem, there are other impediments
4 that prevent publishers from matching a higher percentage of their addresses to a nine-digit zip
5 code in order to receive an automation discount for those pieces. I am currently a member of
6 an MTAC workgroup addressing this problem, in which we have identified 18 major obstacles
7 to improving the coding of addresses. These obstacles include shortcomings in the postal
8 database of addresses, and the lack of a mechanism for local post offices to send correct,
9 codeable addresses back to mailers. Unlike advertising mailers, who may elect not to mail
10 promotions to addresses that cannot be barcoded, periodicals publishers must mail to all
11 subscribers regardless of whether we can obtain an automation discount for their address.

12 As mentioned earlier in my testimony, not only must we forego the automation discount
13 for this portion of our mail, but as of January 1, 1997, these non-automated pieces were
14 required to be mailed as a separate mailstream, which is being sorted at levels that are more
15 expensive for us to mail and less efficient for the post office to handle. If they are not mailed
16 separately, the entire mailing could pay non-automated higher rates, even if, as is common,
17 90% or more of the pieces carry recognized nine digit barcodes.

18 As a final comment on the cost impacts of Classification Reform, I would emphasize
19 that the problems enumerated above not only cause higher postal costs for publishers, but also
20 contribute to higher costs projected by USPS for the handling of flat-sized mail, including
21 periodicals. For example, investigations by another MTAC workgroup have led to the

ABP-T-3

1 conclusion that the move to ADC sortation under classification reform actually increased the
2 amount of handling and re-sacking of flats that the Postal Service must perform, creating
3 service delays and higher costs.

4 The Postal Service is now proposing to restore the SCF sack for periodicals. Other
5 initiatives from the USPS and industry groups such as MTAC are addressing the obstacles to
6 automating tabloids and polywrapped magazines, improving the barcoding of labels, and
7 improving sortation and handling of non-automated copies. As these problems are solved, we
8 should see a much higher volume of periodicals being automated, which should lead to lower
9 periodical costs in the test year than currently projected.

10 For all of these reasons—the recent cost increases incurred by many periodicals under
11 Classification Reform, the information value of these periodicals, and the opportunities to
12 lower current handling costs through further automation—I urge the Commission to use the
13 most conservative markup it can for periodical mail.

14 ABP also supports the new three-digit sortation discount, as proposed by USPS. This
15 proposal is a practical way to offset some of the MC95-1 increases while offering, to a limited
16 extent at least, the possibility of offsetting some of the cost impact of Classification Reform,
17 such as the loss for many pieces of 3/5 digit discounts. I agree with USPS witness Tauflique
18 who said, “This proposed change...provides a fair and equitable allocation of costs based on
19 the work actually done by mailers in presorting their mail.” This new incentive will better
20 conform rates to how USPS now handles all three-digit packages, and eliminates obsolete
21 distinctions between different three-digit make-up schemes.

ABP-T-3

1 In particular, the proposed discount will help the USPS and mailers address one of the
2 problems described in my testimony above: sortation of the non-automatable addresses in
3 periodicals mailings. I am personally working with the Postal Service in an MTAC work
4 group trying to establish sortation rules that would allow these non-automated pieces to be
5 sorted and sacked as part of the automation mailstream, while packaged separately for efficient
6 handling on sorting equipment. This will greatly improve handling of these pieces, which have
7 proven to be very labor intensive when mailed as a small, separate mailstream. One obstacle in
8 our current effort is differences in the rules for three-digit sortation of automated and non-
9 automated mail. The proposed three-digit rate would harmonize those differences, and allow
10 us to implement a sortation change that should lower costs for both publishers and the postal
11 service.

12 I learned recently that the USPS filing in this case did not take into account the
13 migration from basic rate levels of added three-digit volume when projecting the test year costs
14 and revenues. As with automated volumes, the test year may produce more presorted volumes
15 than anticipated, with lower costs to USPS, and thus a higher cost coverage than anticipated
16 for periodicals. Also, the hoped-for resolution of the split mailing problem for non-automated
17 copies could restore the prior presortation levels, and thus result in lower costs and a higher
18 cost coverage as well.

19 Therefore, ABP recommends that the rate schedule proposed by USPS for regular-rate
20 periodicals be approved by the Commission and sent to the USPS governors for final adoption.

Intertec Publishing

Publications by Industry Served

Agriculture

- BEEF
- California-Arizona Farm Press
- Delta Farm Press
- Farm Industry News
- Hay & Forage Grower
- National Hog Farmer
- Southeast Farm Press
- Southwest Farm Press
- Soybean Digest

Apparel & Textiles

- The Press
- Stitches Magazine
- Textile World
- Wearables Business

Automotive & Trucking

- Fleet Owner
- Modern Bulk Transporter
- Refrigerated Transporter
- Trailer/Body Builders
- Ward's Auto World
- Ward's Automotive International
- Ward's Automotive Reports
- Ward's Automotive Yearbook
- Ward's Dealer Business
- Ward's Engine & Vehicle Technology Update

Communications & Entertainment

- BE Radio
- Broadcast Engineering
- Cellular & Mobile International
- Electronic Musician
- Global Telephony
- Lighting Dimensions
- Millimeter
- Mix
- Mobile Radio Technology
- RF Design
- Satellite Communications
- Sound & Video Contractor
- Telephony
- TCI (Theatre Crafts International)
- Video Systems
- Wireless Review
- World Broadcast News

Attachment to
Direct Testimony of Nicholas Cavnar
Page 2 of 2

Electrical

CEE News
EC&M
Electrical Marketing
Electrical Wholesaling

Facilities Management

Access Control & Security Systems Integration
American School & University
Grounds Maintenance

Government, Public Services & Utilities

American City & County
Fire Chief
Transmission & Distribution World
Utility Business
World Wastes

Health & Fitness

Better Nutrition
Club Industry
Health Management Technology
Swimming Pool/Spa Age

Mining & Construction

C&D Debris Recycling
Coal Age
Concrete Products
Engineering & Mining Journal
International Construction
Rock Products
Rock Products Cement Edition

Printing & Packaging

Adhesives Age
American Printer
Boxboard Containers International
Empaque Latinoamericanos
Paper, Film & Foil Converter

Real Estate & Investment

Commercial Real Estate South
National Real Estate Investor
Midwest Real Estate News
Registered Representative
Shopping Center World
Trusts & Estates

DECLARATION

I, Nicholas S. Cavnar, declare under penalty of perjury that the testimony filed by me in this proceeding is true and correct to the best of my knowledge, information and belief.

Nicholas S. Cavnar

Nicholas S. Cavnar

Feb 25, 1998

Date

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, DC 20268-0001

Postal Rate and Fee Changes, 1997

Docket No. R97-1

DESIGNATION OF WRITTEN CROSS-EXAMINATION
OF AMERICAN BUSINESS PRESS
WITNESS NICHOLAS CAVNAR
(ABP-T3)

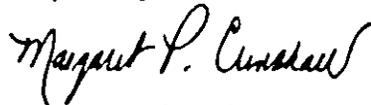
Party

United States Postal Service

Interrogatories

USPS/ABP-T3-35-36

Respectfully submitted,



Margaret P. Crenshaw
Secretary

INTERROGATORY RESPONSES OF
AMERICAN BUSINESS PRESS
WITNESS NICHOLAS CAVNAR (T3)
DESIGNATED AS WRITTEN CROSS-EXAMINATION

Interrogatory:

USPS/ABP-T3-35

USPS/ABP-T3-36

Designating Parties:

USPS

USPS

ANSWERS OF ABP WITNESS CAVNAR TO INTERROGATORIES USPS/ABP-T3-35-36

USPS/ABP-T3-35. Please refer to your testimony at page 1, lines 8 to 10, where you say that the sizes of Intertec's publications are similar to most periodicals with national distribution. Are any of Intertec's publications similar to high circulation national publications like *Time* and *Newsweek*? Please explain your answer.

ANSWER

USPS/ABP-T3-35. Intertec Publishing has no high-circulation publications similar to *Time* and *Newsweek*. Our largest circulation magazine is *Farm Industry News*, with 265,000 copies distributed per issue.

Smaller circulation magazines like ours are much more representative of the periodical class than the few multi-million circulation publications. *Folio*: magazine, which serves the magazine publishing industry, maintains a database of information on 9,556 magazines published in the United States. Of these, 93 percent have total circulation (including newsstand sales) of under 250,000 copies. ABP's witness Kobak in the reclassification case determined that there were only 116 magazines in the country with mailed circulation in excess of one half million.

ANSWERS OF ABP WITNESS CAVNAR TO INTERROGATORIES USPS/ABP-T3-35-36

USPS/ABP-T3-36. Please refer to your testimony at page 8, lines 14 to 16, where you state:

while most magazines are standard trim, tabloids are an important part of the class, as are magazines and tabloids of all sizes that are mailed in polybags for protection or to enclose supplements.

(a) Considering the entire circulation for Second-Class/Periodicals, has the proportion consisting of tabloids increased during the last 10 years? If more general information is not available, you can limit your response to Intertec's publications. Please state the basis for your response.

(b) Considering the entire circulation for Second-Class/Periodicals, has the proportion mailed in polybags increased during the last 10 years? If more general information is not available, you can limit your response to Intertec's publications. Please state the basis for your response.

ANSWER**USPS/ABP-T3-36**

(a) Of 9,556 magazines with detailed information compiled in the *Folio* database, referenced above, 19 percent are tabloid size. The database does not contain historical information on whether the number of tabloids has increased or decreased over the last ten years.

Intertec, which has grown substantially over the last ten years, currently publishes seven tabloids out of seventy magazines. Our tabloids represent approximately 6.1 million copies mailed per year, or 15 percent of our total periodical mail volume of approximately 40 million magazines. This is actually a smaller percentage than in 1988, when we published three tabloids out of fifteen total magazines, and tabloids represented over 25 percent of our total second-class mail volume.

ANSWERS OF ABP WITNESS CAVNAR TO INTERROGATORIES USPS/ABP-T3-35-36

(b) Intertec has no data on industry polybag trends, although I believe that our company's usage has probably increased. The perception among our printers is that, industrywide, the number of magazines mailed in polybags has increased over the past five years, primarily because of automation compatibility.

1 CHAIRMAN GLEIMAN: That, I believe, moves us along
2 to DMA's witness. If you could identify your witness, I
3 will give you a moment to settle in.

4 MR. BERGMAN: Good morning, Mr. Chairman. For the
5 record, I am Michael Bergman, representing the Direct
6 Marketing Association, Incorporated. With me today is Todd
7 Ackerly, also representing the DMA.

8 I would like to call the DMA witness, Lawrence G.
9 Buc, to the stand.

10 Whereupon,

11 LAWRENCE G. BUC,
12 a witness, was called for examination by counsel for the
13 Direct Marketing Association, Inc. and, having been first
14 duly sworn, was examined and testified as follows:

15 CHAIRMAN GLEIMAN: Please be seated.

16 DIRECT EXAMINATION

17 BY MR. BERGMAN:

18 Q Please state your name and occupation for the
19 record?

20 A My name is Lawrence G. Buc. I am the president of
21 Project Performance Corporation and, by training and
22 occupation, an economist.

23 Q Mr. Buc, I am handing you a copy of the document
24 entitled "Testimony of Lawrence G. Buc on Behalf of the
25 Direct Marketing Association, Inc.", which has been marked

1 for identification as DMA-T-1.

2 Mr. Buc, was this document prepared by you or
3 under your supervision and direction?

4 A Yes.

5 Q Does this document reflect revisions that you
6 filed on February 18th and February 20th, 1998?

7 A Yes, it does.

8 Q Would you please summarize briefly, for the
9 record, these two sets of revisions?

10 A There were two revisions. The first one on DMA-2
11 was ^amere typo. We had tried to have a number that said
12 "82302" and it had said "2302" on the first line of not
13 handling tally costs. Somewhere that "8" disappeared and so
14 we corrected that and put the 8 back into that table, and
15 that's the first one.

16 The second one, if people recall, the other
17 morning when Witness Stralberg was on the stand, and then
18 Witness Cohen was on the stand, there was some discussion
19 about where the costs came from, and it turned out at the
20 break, that the change in the Postal Service's discussion
21 with Witness Stralberg about where some of his costs came
22 from were resolved when it turned out that the activity
23 code, international mixed mail, 5461, had been put in the
24 wrong place.

25 That code 5461 had similarly ^{infected} ~~affected~~ my work in

1 some way and when we discovered that we had made a mistake,
2 we re-ran the numbers, re-corrected, and, therefore, revised
3 the ~~Amendment~~ ^{Exhibit} DMA-3. The changes are not material.

4 Q Mr. Buc, do you have any additional corrections or
5 revisions to make to this document?

6 A No.

7 Q With those filed revisions to Exhibits DMA-2 and
8 DMA-3, if you were to testify orally here today, would your
9 testimony be the same as contained in the document?

10 A Yes.

11 MR. BERGMAN: Mr. Chairman, at this time, I
12 respectfully request Mr. Buc's testimony, designated
13 DMA-T-1, and associated exhibits, as revised, be admitted
14 into evidence and transcribed into the record. And I will
15 hand two copies to the reporter.

16 CHAIRMAN GLEIMAN: Are there any objections?

17 [No response.]

18 CHAIRMAN GLEIMAN: Hearing none, Mr. Buc's
19 testimony and exhibits are received into evidence and I
20 direct that they be transcribed into the record at this
21 point.

22 [Direct Testimony and Exhibits of
23 Lawrence G. Buc, DMA-T-1, was
24 received into evidence and
25 transcribed into the record.]

RECEIVED
Dec 9 10 20 AM '97
COMMUNICATIONS SECTION

DMA-T-1

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

POSTAL RATE AND FEE CHANGES, 1997

Docket No. R97-1

TESTIMONY OF
LAWRENCE G. BUC
ON BEHALF OF
THE DIRECT MARKETING ASSOCIATION, INC.

CONTENTS

- I. AUTOBIOGRAPHICAL SKETCH 1
- II. PURPOSE AND SCOPE OF TESTIMONY 2
- PART ONE - REVENUE REQUIREMENT
- III. CORRECTING AN OBVIOUS ERROR IN COST REDUCTIONS FOR SUPERVISORS AND TECHNICIANS WILL REDUCE THE TEST YEAR COST ESTIMATE BY \$51 MILLION 4
- PART TWO - MAIL PROCESSING COSTS
- IV. COMPARING THE POSTAL SERVICE'S FY 96 AND BY 96 METHODS FOR DETERMINING MAIL PROCESSING COSTS, FORMING COST POOLS, DETERMINING VOLUME VARIABILITY, AND DISTRIBUTING VOLUME-VARIABLE MAIL PROCESSING COSTS TO CLASSES AND SUBCLASSES . 7
 - A. Determining Mail Processing Costs and Forming Cost Pools 7
 - B. Determining Volume Variability 8
 - C. Distributing Mail Processing Costs to Classes and Subclasses 9
 - 1. Fiscal Year 1996 Distribution Method 10
 - 2. Base Year 1996 Distribution Method 11
 - a. Direct Tally Costs 12
 - b. Mixed Mail Tally Costs 12
 - c. Not-Handling Mail Tally Costs 14
- V. WITNESS DEGEN'S MAIL PROCESSING COST DISTRIBUTION METHODS ARE FATALLY FLAWED 15
 - A. Witness Degen's Reweighting of Tallies Produces Internal Inconsistencies and Implies Flawed Distribution Keys 17

DMA-T-1

B.	Witness Degen's Untested Assumptions Produce Unreliable Distribution Keys for Mixed Mail with Huge Coefficients of Variation	20
C.	Witness Degen's Distribution of Not-Handling Mail Costs Within Cost Pools Is Unfounded	25
VI.	WITNESS DEGEN'S METHODS IMPROVED	27
	EXHIBIT DMA-1: FY 96 and BY 96 Methods for Distributing Mail Processing Costs to Subclass/Special Service	
	EXHIBIT DMA-2: Ratio of Not-Handling Tally Cost to Direct and Mixed Tally Cost by MODS Cost Pool	
	EXHIBIT DMA-3: DMA's Alternative Methodology and Witness Degen's Proposed Methodology for Distributing Volume-Variable Mail Processing Costs to Subclasses	

DMA-T-1

**DIRECT TESTIMONY
OF
LAWRENCE G. BUC**

1 **I. AUTOBIOGRAPHICAL SKETCH**

2 My name is Lawrence G. Buc. I am the President of Project Performance
3 Corporation (PPC), a consulting firm headquartered in Sterling, Virginia. PPC
4 provides economic, information technology, and environmental consulting services
5 to private and public sector clients. The firm has grown rapidly since our inception
6 in 1991; last year we were number 272 on the *Inc. 500*, a compilation of the fastest
7 growing private companies in America. At the firm, I direct a practice which
8 focuses on economic and cost analysis and performing and reviewing cost
9 estimates. I also manage the finance group of PPC and am directly responsible
10 for the firm's financial performance.

11 I attended Brown University and graduated in 1968 with an AB with honors in
12 mathematics and economics. In 1978 I received a masters degree in economics
13 from the George Washington University of America. While there, I was a member
14 of Omicron Delta Epsilon, the national honorary economics society. I am currently
15 a member of the American Economic Association.

16 I have been involved in Postal Service rate and classification cases for a large
17 part of my professional career. I joined the Revenue and Cost Analysis Division of
18 the United States Postal Service ("Postal Service") in March of 1975 and have
19 analyzed postal costs ever since, working not only for the Postal Service, but also
20 for the United States Postal Rate Commission ("the Commission") and a variety of
21 private clients. I have participated in six previous rate cases: R74-1, R76-1, R77-1,
22 R84-1, R87-1, and R90-1. In these, I have performed analyses on all elements of
23 the case, drafted direct and rebuttal testimony, prepared and drafted responses to
24 interrogatories, and provided support to cost, pricing, revenue requirement, and
25 volume witnesses. In R84-1 and in R90-1, I appeared as a witness before the

DMA-T-1

1 Commission; I also appeared as a witness for the Postal Service in MC76-1 and
2 for the Office of the Consumer Advocate in MC77-2.

3 **II. PURPOSE AND SCOPE OF TESTIMONY**

4 In Part One of this testimony, I review the Postal Service's treatment of cost
5 reduction programs and other programs for supervisors. Because the Postal
6 Service has an obvious flaw in its treatment of this part of the rollforward program, I
7 suggest a correction and calculate savings which better reflect the logic of the
8 rollforward methodology.

9 In Part Two of this testimony, I analyze the Postal Service's proposed method
10 for distributing volume-variable mail processing costs among the classes and
11 subclasses of mail. The mail processing component of Clerks and Mailhandlers,
12 Cost Segment 3, is the single most important component in determining the
13 volume-variable cost for each class and subclass of mail. This component (3.1)
14 has the largest accrued costs of any cost component of the Postal Service. In the
15 Base Year for this proceeding (1996), it comprises more than \$13 billion in costs,
16 or almost 25 percent of the total accrued costs for the entire Postal Service.
17 (Exhibit USPS-5A at 22). In fact, the mail processing component of Cost Segment
18 3 alone is larger than any of the other 18 cost segments. Moreover, the
19 distribution of costs within many other components depends in whole or in part
20 upon the distribution of costs within this component.

21 In this case, the Postal Service employs new and very different approaches for
22 (1) determining mail processing costs, (2) estimating their volume variability, and
23 (3) distributing the volume-variable costs to classes and subclasses of mail. In
24 particular, witness Degen proposes a new method for partitioning the accrued
25 costs of Cost Segment 3 among each of its components: mail processing (3.1),
26 window service (3.2), and administration (3.3). Witness Bradley then uses a new
27 method for estimating the volume variability of mail processing costs. Finally,
28 witness Degen implements a new method for distributing volume-variable mail

DMA-T-1

1 processing costs to classes and subclasses of mail.

2 This part of my testimony focuses on witness Degen's distribution of volume-
3 variable mail processing costs to classes and subclasses. To set the proper
4 context for my discussion, I first briefly describe the current (Fiscal Year 1996, or
5 "FY 96") and proposed (Base Year 1996, or "BY 96") Postal Service methods for
6 the first two steps described above. I then describe in much greater detail the FY
7 96 and BY 96 methods for distributing the Postal Service's volume-variable mail
8 processing costs to classes and subclasses.

9 Following these descriptions, I evaluate witness Degen's distribution method. I
10 find that his method is fatally flawed for two reasons. First, distributing the costs in
11 Management Operating Data System ("MODS") cost pools with In-Office Cost
12 System ("IOCS") distribution keys is inconsistent. Second, notwithstanding witness
13 Degen's assertions that his method improves upon the previous method for
14 distributing these costs, which used IOCS data and the LIOCATT distribution
15 program, I show that his new method is, in fact, based on untested implicit
16 assumptions and unreliable data.

17 In its Opinion and Recommended Decision in Docket No. R94-1 ("Op. R94-1"),
18 the Postal Rate Commission explicitly outlined four substantive issues which
19 caused them concern regarding the Postal Service's use of IOCS/LIOCATT to
20 distribute mail processing costs to classes and subclasses: (1) the lack of
21 resources devoted to IOCS, (2) the increase in the number and proportion of mixed
22 mail tallies, (3) the lack of analysis of the effect on IOCS of a shift to an automated
23 environment, and (4) questions about break time and not-handling time. (Op. R94-
24 1 at III-8). The Commission urged the Postal Service to perform "a careful
25 evaluation of the IOCS, with attention to all the questions outlined above. Such an
26 evaluation is needed to provide assurance that rates are fair and equitable and in
27 the best interests of the mailers and the Nation." (Id. at III-10).

28 Rather than thoroughly addressing the Commission's concerns, witness Degen
29 completely ignored all but the second one, which he treated in a merely superficial

DMA-T-1

1 manner. Unfortunately, his proposed solution to this concern actually exacerbates
2 some of the problems described by the Commission in R94-1 by significantly
3 increasing the number of distribution keys (renamed "distributing sets") as
4 compared with R94-1 and FY 1996. This approach vastly decreases the statistical
5 reliability of his results. Moreover, witness Degen's solution is based on new and
6 untested implicit assumptions which result in extremely speculative cost
7 distributions.

8 Because of the severe shortcomings of witness Degen's new method of
9 distributing mail processing costs to classes and subclasses, I recommend that the
10 Commission reject it and use for this task the method it approved in R94-1. While
11 this method could certainly be improved, it is the best currently available and it is
12 superior to witness Degen's approach. Alternatively, and as a very poor second
13 choice, if the Commission uses any part of witness Degen's approach, it should
14 correct the most obvious flaws. I present an alternative distribution of mail
15 processing costs to classes and subclasses which does so.

16 PART ONE - REVENUE REQUIREMENT

17 III. CORRECTING AN OBVIOUS ERROR IN COST REDUCTIONS FOR 18 SUPERVISORS AND TECHNICIANS WILL REDUCE THE TEST YEAR COST 19 ESTIMATE BY \$51 MILLION

20 The Commission should correct an obvious flaw in the cost reduction portion of
21 the rollforward program as it applies to Cost Segment 2. The rollforward program
22 incorporates a number of upward adjustments in mail volume, nonvolume workload
23 and other programs that increase the costs of supervisors when clerks' and
24 mailhandlers' and carriers' costs increase. However, the cost reduction portion of
25 the rollforward program does not contain a corresponding downward adjustment in
26 supervisors' costs to reflect savings in direct labor when costs for clerks,
27 mailhandlers and carriers decrease. (Exhibit USPS-9B). This is illogical and
28 should be corrected.

DMA-T-1

1 The volume workload and nonvolume workload adjustments in the rollforward
2 program adjust Supervisors and Technicians costs to maintain a constant ratio of
3 supervisors' costs to the cost of the craft supervised. For example, the ratio of
4 supervision of mail processing costs to mail processing costs in the rollforward
5 from FY 1997 to FY 1998 was .07595 before the volume workload and nonvolume
6 workload effects (LR-H-12, Chapter XII, Section D, at 437-438) and .07595 after
7 these adjustments. The purpose of the adjustment to supervisors' costs is to
8 ensure that the number of supervisors is commensurate with the number of
9 workers in the cost component supervised.

10 In the cost reduction programs step, however, the rollforward program does not
11 make a similar adjustment to the supervisors' costs, because "[c]ost reduction
12 amounts are developed by program managers... This development is external to
13 the CRA/Rollforward model..." (Tr. 13/7194). It appears that program managers
14 simply did not realize that they were supposed to adjust supervisors' and
15 technicians' costs downward as they did for the costs for mail processing clerks
16 and mailhandlers and city carriers due to the cost reduction programs. Witness
17 Patelunas confirmed that program managers were not specifically instructed to
18 "determine whether reductions in Clerks and Mailhandlers and City Carrier work
19 hours would reduce the amount of supervisor and technician work hours needed to
20 manage the craft workers when they estimated cost savings." (Tr. 13/7211).
21 However, unlike cost reduction programs, program managers did adjust
22 supervisors' and technicians' costs upward in the other programs step.

23 I recommend that the Commission correct this obvious flaw and reduce
24 supervision of mail processing costs by \$31 million and supervision of city delivery
25 carrier costs by \$20 million so that the ratio of costs for supervisor cost
26 components to the costs of the components supervised after the cost reduction
27 program adjustment is the same as the ratio before the cost reduction program
28 adjustment. Table 1, below, shows how I developed these cost reductions.

DMA-T-1

1 **Table 1. Supervisors Adjustment to Rollforward From FY 1997 to Test Year**
 2 **1998 (000s)**

Calculation of Supervisors Adjustment	Before Cost Reduction Programs		After Cost Reduction Programs	
	Mail Processing [a]	City Carriers [a]	Mail Processing [b]	City Carriers [b]
Rollforward Component Supervised [1]	\$14,310,963 ¹	\$12,341,000 ³	\$13,908,052 ¹	\$11,998,659 ³
Rollforward Supervisor Component [2]	\$1,086,934 ²	\$735,097 ⁴	\$1,086,934 ²	\$735,097 ⁴
Ratio [3] = [1] / [2]	.07595	.05957	.07815	.06126
Adjusted Supervisor Cost to Maintain Ratio [4] = [1b] * [3a]	N.A.	N.A.	\$1,056,332	\$714,705
Adjustment to Supervisor Cost to Maintain Ratio [5] = [4] - [2]	N.A.	N.A.	(\$30,602)	(\$20,392)

14 ¹ LR-H-12, Chapter XII, Section D, page 438, Line "Mail Processing"

15 ² LR-H-12, Chapter XII, Section D, page 437, Line "Supervision of Mail Processing & Window -
 16 Direct Labor & Overhead"

17 ³ LR-H-12, Chapter XII, Section D, page 440, Line "Total," and page 441, Line "Total"

18 ⁴ LR-H-12, Chapter XII, Section D, page 437, Line "Supervision of City Delivery Carriers Total"

DMA-T-1

PART TWO - MAIL PROCESSING COSTS**IV. COMPARING THE POSTAL SERVICE'S FY 96 AND BY 96 METHODS FOR DETERMINING MAIL PROCESSING COSTS, FORMING COST POOLS, DETERMINING VOLUME VARIABILITY, AND DISTRIBUTING VOLUME-VARIABLE MAIL PROCESSING COSTS TO CLASSES AND SUBCLASSES**

This section of my testimony describes the Postal Service's FY 96 and BY 96 methods for calculating mail processing costs, creating cost pools, determining the volume variability of mail processing costs, and distributing volume-variable mail processing costs to classes and subclasses.

A. Determining Mail Processing Costs and Forming Cost Pools

IOCS Question 18 identifies the activity (e.g., platform operations, collection and preparation of mail, distribution and related mail processing, miscellaneous operations, window service, administrative and other activities) that a Postal Service employee is actually performing at the time a tally is taken. (See LR-H-49, In-Office Cost System, Field Operating Instructions, Handbook F-45, January 1995, p.56). In R94-1 and in FY 1996, as well as in previous rate cases, the Postal Service used the responses to Question 18 to partition the accrued costs of Cost Segment 3, Clerks and Mailhandlers, into its three components: mail processing (3.1), window service (3.2), and administration (3.3).

In this case as well, witness Degen used responses to IOCS Question 18 to assign mail processing costs to cost components (3.1, 3.2, 3.3) for BMCs and non-MODS offices. For MODS offices, however, which make up 78 percent of total mail processing costs,¹ and in contrast to previous cases, witness Degen partitioned Base Year 1996 costs for Cost Segment 3 into its three components using cost data from the Payroll Data System, based upon the MODS operation into which employees are clocked. This new method for partitioning costs to

¹Calculated from USPS-T-12, Table 5, at 16-23.

DMA-T-1

1 component has shifted \$792 million of costs to mail processing, of which \$685
2 million came from administrative activities and \$107 million came from window
3 service. (Tr.12/6590-6595).²

4 Witness Degen also used data from the MODS operation into which employees
5 are clocked to disaggregate further mail processing costs among 39 cost pools³ of
6 similar operations at MODS offices. In addition, he used data on the PIRS
7 operation into which employees are clocked to disaggregate mail processing costs
8 among 6 pools of similar operations at BMCs.

9 Using additional information from Question 18, witness Degen assigned IOCS
10 tallies to cost components and cost pools based upon the MODS operation into
11 which employees were clocked when tallied. He used this method despite the
12 well-known fact that workers are sometimes recorded in IOCS tallies working in
13 operations other than those into which they are clocked. (USPS-T-12 at 6-7). In
14 fact, IOCS itself explicitly acknowledges this inconsistency. The instructions to
15 Question 18 state, "At a PSDS (Postal Source Data System) or ETC (Electronic
16 Time Clock) office, enter the MODS (Management Operating Data System) work
17 center that the employee is clocked into at the time of the reading. The MODS
18 work center number may not necessarily match the employees's activity at the time
19 of the reading." (LR-H-49, Handbook F-45, Chapter 11, at 56).⁴

20 **B. Determining Volume Variability**

21 Previously, based on no empirical analysis, the Postal Service assumed that

²Migration of costs at MODS offices from window service and administration to mail processing is due to three primary reasons: (1) clocking error, (2) migration of clocking in and out costs from administration to mail processing, and (3) migration of mail processing administration costs from administration to mail processing.

³Witness Degen later created a 40th MODS cost pool, LDC15. I generally exclude LDC 15 as a cost pool because IOCS contains no subclass information for LDC 15.

⁴I will refer to the situation where an employee is clocked into an operation in which he is not working as "clocking error" or "misclocking."

DMA-T-1

1 mail processing costs were completely volume variable. In this case, much to its
2 credit, the Postal Service has relied on sophisticated econometric analysis to
3 estimate volume variability, rather than continuing to rely on an old untested
4 assumption. Witness Bradley used regression analysis on 25 of the cost pools
5 developed by witness Degen, above, to determine their volume variability. For the
6 remaining pools, he developed volume variability estimates through analogy to the
7 pools he analyzed. His analysis yielded an average volume variability for mail
8 processing costs of 76.4 percent in Base Year 1996. (USPS-T-12, Table 4).
9 Volume variability in individual operations ranged from 0.0 percent for LDC 48 -
10 Customer Service/Admin to 100.5 percent for LDC 15. My testimony does not
11 address the merits of witness Bradley's methodology.

12 **C. Distributing Mail Processing Costs to Classes and Subclasses**

13 Section 3622(b)(3) of the Postal Reorganization Act requires that "each class
14 of mail or type of mail service bear the direct and indirect postal costs attributable
15 to that class or type." With more than \$13 billion of accrued costs in BY 1996,
16 more than 409 million hours of clerk and mailhandler time, and more than 180
17 billion pieces of mail,⁵ determining the mail processing cost by class and subclass
18 is a formidable task.

19 Given the scope and nature of mail processing, it would be impractical for
20 clerks and mailhandlers to fill out time sheets identifying the amount of time they
21 spend processing mail by subclass or special service. Further, even if clerks and
22 mailhandlers did fill out these time sheets, much of their time would still be difficult
23 to associate with any particular class or subclass of mail because much of the time
24 clerks and mailhandlers do not handle individual pieces of mail. Rather, they

⁵Calculated from the Postal Service's response to DMA/USPS-T4-24(c)-(e) and FY 1996
Cost Revenue and Analysis report at 3.

DMA-T-1

1 handle mixed mail⁶ or do not handle mail at all.⁷ Any costing methodology must
 2 address the issue of how to treat the costs of the time clerks and mailhandlers
 3 spend handling mixed mail and the time they spend not handling mail at all. In the
 4 Base Year, more than 50 percent of the time spent by clerks and mailhandlers is
 5 spent handling mixed mail or not handling mail at all. (USPS-T-12, Table 6, at 24).

6 **1. Fiscal Year 1996 Distribution Method**

7 The Postal Service traditionally has used the IOCS to measure the amount of
 8 time that clerks and mailhandlers spend processing particular pieces of individual
 9 classes and subclasses of mail, the amount of time they are handling mixed mail,
 10 and the amount of time they are not handling mail at all. The Postal Service then
 11 has used the LIOCATT distribution program, which makes a small number of
 12 simple assumptions, to distribute the mixed mail and not-handling costs to
 13 subclasses of mail.

14 The IOCS system is based on two basic principles. First, it is based on the
 15 proposition that the sample reflects the universe, which means that the random
 16 instants in time when the tallies are taken are representative of all instants in time.
 17 Thus, within a CAG and craft,⁸ if 10 percent of the tallies are for a particular class
 18 of mail, then 10 percent of all mail processing time for the craft in the CAG is spent
 19 on that class of mail. Second, the IOCS system is based on the proposition that
 20 cost is directly proportional to time. Thus, within a CAG and craft, for example, if
 21 10 percent of the tallies are for a particular class of mail, then 10 percent of mail

⁶In general, "mixed mail" is non-identical mail in items (e.g., bundles, sacks, trays) or containers (e.g., BMC-OTRs, hampers, wiretainers). For more complete definitions of the types of mixed mail, see Exhibit DMA-1.

⁷In general, not-handling activities include breaks, clocking in and out of operations at MODS offices, moving empty equipment, working at windows, and other activities such as training.

⁸To make the sampling system more efficient, sampling is stratified by CAG and craft. For any sample size, stratification produces more accurate estimates by dividing the population into subgroups that are internally more homogenous. (George W. Snedecor & William G. Cochran, *Statistical Methods* 434 (7th ed. 1982)).

DMA-T-1

1 processing costs are deemed to be caused by that class of mail.

2 In R94-1 and FY 1996, the weighted cost for direct tallies (about 50 percent of
3 mail processing costs in FY 1996)⁹ was assigned to the subclass of mail that the
4 employee was observed to be handling by the IOCS data collector.¹⁰

5 The costs for mixed mail tallies (tallies where the employee was handling mail
6 of various classes but for which the IOCS data collector could not determine the
7 subclass of mail being handled) - about 22 percent of mail processing costs in FY
8 1996¹¹ - were then distributed to subclasses of mail in proportion to corresponding
9 direct tally costs within CAG and basic function (e.g., incoming, outgoing). For
10 example, the cost for a mixed flat outgoing tally was distributed to classes and
11 subclasses based on all direct tallies where the employee was observed to be
12 handling a flat piece of mail in an outgoing mail processing operation. If fifty
13 percent of direct tallies where the employee was seen handling a flat piece of mail
14 in an outgoing operation were for the Standard A Regular subclass, fifty percent of
15 the cost for a mixed flat tally was distributed to the Standard A Regular subclass.

16 Finally, mail processing overhead costs (e.g., breaks/personal needs, clocking
17 in and out, moving empty equipment) - about 27 percent of total mail processing
18 costs in FY 1996¹² - were distributed to subclasses in proportion to the distribution
19 of all other mail processing costs.

20 **2. Base Year 1996 Distribution Method**

21 Witness Degen's analysis changed the distribution keys substantially for Base
22 Year 1996. The changes were not, however, based on additional information.
23 They were based simply on a large number of new and untested implicit

⁹USPS-T-12, Table 2, at 13.

¹⁰The dollar weighted cost, or "weighted cost," of a tally is equal to the accrued costs for a CAG and craft divided by the number of tallies for that CAG and craft.

¹¹USPS-T-12, Table 2, at 13.

¹²Id. These costs also include some window service and administrative/support costs.

DMA-T-1

1 assumptions pertaining to the subclass composition of mixed mail and the
2 causality and resulting distribution of not-handling costs.

3 **a. Direct Tally Costs**

4 In Base Year 1996, witness Degen again assigned the cost for direct tallies to
5 the subclass of mail that the employee was observed to be handling by the IOCS
6 data collector.¹³ He also assigned tallies to subclass for which the class, but not
7 the subclass, was known. This assignment was made in proportion to direct tally
8 costs for subclasses within that class. For BY 1996, weighted direct tally costs
9 comprised approximately 46 percent of total weighted tally costs.¹⁴

10 Witness Degen, however, made two adjustments to the cost assigned by each
11 tally. He first reweighted the cost for a tally so that the sum of all weighted tally
12 costs within a cost pool was equal to the total accrued cost for the cost pool
13 derived from the Payroll Data System. He then multiplied this new tally cost by the
14 pool-specific volume variability factor developed by witness Bradley to determine
15 what I refer to as the "volume-variable MODS pool cost."¹⁵

16 **b. Mixed Mail Tally Costs**

17 Witness Degen then made a long series of implicit assumptions which allowed
18 him to distribute mixed mail costs (approximately 11 percent of weighted tally
19 costs)¹⁶ to subclass using a three-step process.¹⁷ He first assumed that the

¹³Direct tallies are tallies where the IOCS data collector records the subclass of mail being handled. These include tallies for direct piece handlings, counted items, top-piece rule items, and identical items and containers. See Exhibit DMA-1 for more complete descriptions of the various types of direct tallies.

¹⁴Calculated from LR-H-23.

¹⁵Because these adjustments are different for each cost pool, the volume-variable tally cost for a tally for a specific CAG and craft will differ across cost pools.

¹⁶Calculated from LR-H-23.

¹⁷Witness Degen has redefined mixed mail and mixed mail tallies. His definition of mixed mail shifts the activity of moving empty items or containers from overhead (now termed "not-handling" mail) to mixed mail.

DMA-T-1

1 subclass composition of mixed items by item type and cost pool is the same as the
2 subclass composition of direct items of the same item type and cost pool.¹⁸
3 Consequently, within each pool, witness Degen distributed costs for mixed items to
4 subclasses in proportion to direct tally costs of the same cost pool (of which there
5 are 49, excluding LDC 15) and item type (of which there are 16); he, therefore,
6 used 784 distinct distribution keys to perform this distribution.¹⁹ For example, if ten
7 percent of direct tallies where an employee was observed to be handling a flat tray
8 and was clocked into a Letter Sorting Machine MODS operation were assigned to
9 the Standard A Regular subclass, then witness Degen assigned ten percent of
10 costs for mixed mail tallies where the employee was handling a flat tray and was
11 clocked into a Letter Sorting Machine MODS operation to the Standard A Regular
12 subclass.

13 After distributing the costs for mixed items, witness Degen distributed the costs
14 for identified mixed containers. Identified mixed containers are containers where
15 the IOCS data collector observed the employee handling a container of
16 nonidentical mail and identified the percentage of container volume taken up by
17 specific types of items and loose shapes of mail. Witness Degen disaggregated
18 the tally cost by item or loose shape using this information, replacing each
19 identified mixed container tally with a number of new, pro-rated item tallies equal to
20 the number of unique item types and loose shapes observed within the container.
21 By doing so, witness Degen used 1,029 distinct direct tally keys to distribute

¹⁸Mixed item tallies occur when an employee is observed handling either (1) an item consisting of nonidentical mail and the item is neither top-pieced nor counted, or (2) an empty item.

¹⁹ The 49 cost pools include 39 at MODS offices, six at BMCs, and four at non-MODS offices (which Degen developed by disaggregating non-MODS costs by basic function). When there were no direct tallies for a specific item type (e.g., letter tray) within a cost pool, witness Degen used direct volume-variable tally costs for the item type across all cost pools within the facility type (e.g., MODS 1 and 2 facilities) as his distribution key.

DMA-T-1

1 identified mixed container tally costs to subclasses.²⁰ Thus, he assumed that the
2 subclass composition of items in identified mixed containers by item type and cost
3 pool is the same as the composition of items outside of such containers by item
4 type and cost pool. He also assumed that the subclass composition of loose
5 shapes inside identified mixed containers by cost pool was the same as the
6 subclass composition of loose shapes outside of these containers by cost pool.
7 For example, if 25 percent of the filled space within a container is taken up by letter
8 trays, witness Degen assigned 25 percent of the volume-variable MODS pool cost
9 for the identified mixed container to a new letter tray item tally within the same cost
10 pool. The new tallies thus created were then assigned to subclass or special
11 service in the manner described above for mixed items.

12 After distributing the costs for identified mixed containers, witness Degen
13 distributed the costs for unidentified and empty mixed containers.²¹ For these
14 containers, the Postal Service has no data regarding container contents.
15 Therefore, witness Degen assumed that the distribution of their contents by
16 subclass is the same as the distribution of the contents of identical and identified
17 containers of the same container type in the same cost pool. In so doing, witness
18 Degen developed another 490 distribution keys (10 container types and 49 cost
19 pools) to distribute unidentified and empty containers to subclasses.

20 **c. Not-Handling Mail Tally Costs**

21 Finally, witness Degen defined all other tallies, which account for approximately

²⁰Note that if the new tally developed through this method is for a loose shape (e.g., loose card, letter, flat, parcel, or IPP), the tally will be distributed based upon direct tallies of the same shape within cost pool. This results in the creation of 245 additional distribution keys (5 loose shapes x 49 cost pools). The 1029 direct tally keys consist of the 245 distribution keys for loose shapes plus the 784 distribution keys for items.

²¹These are tallies where the data collector observed the employee handling (1) a container of non-identical mail for which the data collector did not identify container contents or (2) an empty container.

DMA-T-1

1 43 percent of total weighted tally costs,²² as "not-handling mail" tallies and
 2 distributed their volume-variable MODS pool costs to subclasses in proportion to
 3 the distribution of all other mail processing costs (direct and mixed mail) within
 4 each cost pool.²³ This distribution implicitly assumed that not-handling costs in
 5 each of the 50 cost pools are caused by, and are directly proportional to, the direct
 6 and distributed mixed mail costs within each cost pool. Exhibit DMA-1 summarizes
 7 the Postal Service's mail processing cost distribution methods for FY 96 and BY 96
 8 and shows costs distributed by each method.

9 **V. WITNESS DEGEN'S MAIL PROCESSING COST DISTRIBUTION**
 10 **METHODS ARE FATALLY FLAWED**

11 This section of my testimony describes several fatal flaws in witness Degen's
 12 methods for distributing mail processing costs to classes and subclasses. Any one
 13 of these flaws is serious enough to warrant discarding his entire method.

14 In Op. R94-1, the Commission expressed its concerns about (1) the lack of
 15 resources devoted to IOCS, (2) the increase in the number and proportion of mixed
 16 mail tallies, (3) the lack of analysis about the effect on IOCS of a shift to an

²²Calculated from LR-H-23.

²³There are several exceptions to witness Degen's method for distributing mixed mail and not-handling mail costs to subclasses or special service:

- For the MODS Platform cost pool, all MODS Allied labor cost pools are used to distribute mixed items in containers to subclass/special service.
- For the MODS 1MISC and 1Support cost pools, all function 1 cost pools are used to distribute not-handling mail costs to subclass/special service.
- For the MODS 1EEQPT (Empty Equipment) cost pool, all MODS mail processing cost pools are used to distribute not-handling mail costs to subclass/special service.
- For the MODS LDC48OTH cost pool, all MODS function 4 cost pools are used to distribute not-handling mail costs to subclass/special service.
- For the BMC Platform cost pool, all BMC cost pools are used to distribute mixed item costs to subclass/special service.
- For non-MODS cost pools, activity codes 6XXX (except 6521-23) are distributed by IOCS operation code.
- For several cost pools, not-handling mail costs are assigned to subclasses of mail but not types of special services.

DMA-T-1

1 automated environment, and (4) questions about break time and not-handling time
2 (Op. R94-1 at III-8). Although more than three years have passed since the
3 decision in R94-1, witness Degen has not addressed the first, third, and fourth
4 concerns and has addressed the second in a very superficial way.

5 Under the circumstances, one might have expected the Postal Service to
6 address the Commission's concerns in a serious manner. One might have
7 expected them to increase significantly the number of tallies and improve training
8 to satisfy the first concern. To satisfy the second concern, one might have
9 expected the Postal Service to count much of the uncounted mail and investigate
10 whether the kinds of tallies that are counted are representative of those that are
11 not counted. To address the third concern, one might have expected a study on
12 "automation refugees," employees displaced by the increase in the use of
13 automated equipment. Finally, to satisfy the fourth concern, one might have
14 expected a study on why break time and not-handling time continue to increase
15 and how to distribute this time to reflect causal relationships.

16 Although witness Degen's complex methods and distribution keys make it
17 appear as if he has addressed the Commission's second concern with additional
18 information regarding the activities being performed by clerks and mailhandlers
19 and the subclasses of mail which cause the clerks and mailhandlers to perform
20 these activities, he actually has no more information than the Postal Service had in
21 R94-1. In both R94-1 and this case, the only information available to the Postal
22 Service concerning mail processing cost distribution are the tallies that can be
23 directly associated with a particular class, subclass, or special service. In this
24 case, only 88,000 of the total 201,000 mail processing tallies can be so associated.
25 (Tr.12/6226-6228).

26 The difference between witness Degen's methods and those used in R94-1 is
27 that, as described above, witness Degen's methods make a large number of
28 unsubstantiated adjustments reweighting tally costs, and unsupported implicit
29 assumptions regarding the subclasses of mail comprising mixed mail and the

DMA-T-1

1 subclasses of mail causing not-handling mail costs. In R94-1, the Postal Service
2 made simple assumptions, consistent with the common-sense notion that, in the
3 absence of information, simpler assumptions are better.²⁴ The remainder of this
4 section outlines the implications of the major adjustments and assumptions made
5 by witness Degen in this case.

6 **A. Witness Degen's Reweighting of Tallies Produces Internal**
7 **Inconsistencies and Implies Flawed Distribution Keys**

8 As described in Section IV above, witness Degen formed cost pools using
9 MODS data and the Payroll Data System and then generally distributed the
10 accrued costs within each pool using the IOCS tallies in the pool. Because the
11 weighted tally costs in each pool do not sum up to the accrued costs within each
12 pool, witness Degen's distribution within each pool reweighted (sometimes
13 substantially) the value of a tally. For example, in the Bulk Presort cost pool,
14 weighted IOCS tally costs are \$16,345,000 and MODS pool costs are
15 \$11,667,000. Thus, a reweighted tally in BY 96 is "worth" only 71 percent of the
16 value of an original IOCS weighted tally in FY 96. This not only is illogical, but also
17 violates a basic underpinning of the entire IOCS sampling system: that cost (within
18 a CAG and craft) for an activity is directly proportional to the number of tallies for
19 that activity.

20 Excluding LDC15, Degen's reweighting changed the weighted tally cost for
21 individual MODS operations by an average of about 13 percent and an average of
22 about 7 percent if each cost pool is weighted by its respective cost in calculating
23 the average. (Tr.17/8134-8135). There is, however, substantial variation around
24 these averages. Figure 1 shows the distribution of the ratio of accrued cost in a
25 cost pool to the weighted IOCS cost in the cost pool. This ratio is the factor by

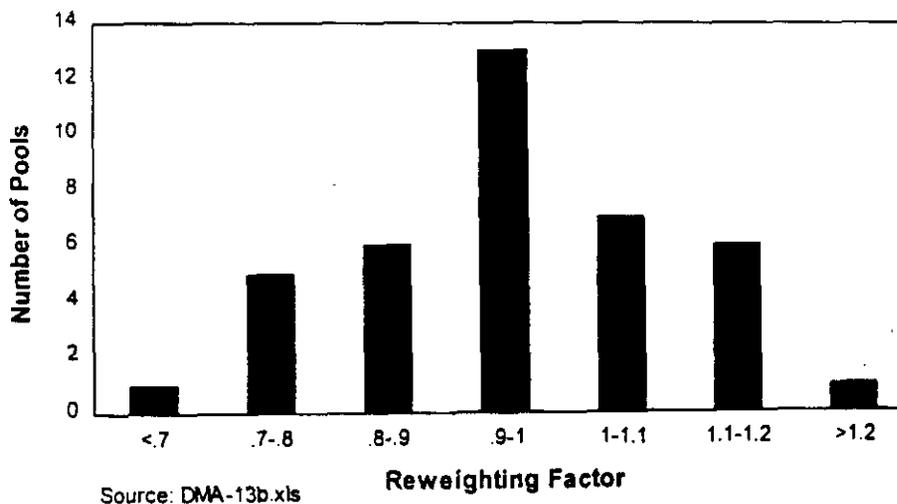
²⁴This principle, known to philosophers of science as "Ockham's Razor" after the famous 14th century philosopher and theologian William of Ockham, holds that simpler explanations are preferable to complicated ones.

DMA-T-1

1 which the IOCS tally cost within a MODS pool must be multiplied so that the sum
 2 of all weighted tally costs within the pool equals the accrued cost. As the figure
 3 shows, there is a wide variation in the reweighting factors, with almost half of them
 4 (19 out of 39) less than .9 or greater than 1.1.

5 An implication of this reweighting is that the weighted tally cost for two tallies for
 6 the same craft and activity taken in the same CAG can be very different if the
 7 observed employees are clocked into different MODS operations. For example, if
 8 during the course of a year the same clerk were sampled twice while sorting flats at
 9 a CAG A office, but once was clocked into a MODS manual letter sorting operation
 10 and once into a MODS parcel sorting operation, the weighted tally cost, for each,
 11 before applying witness Bradley's volume variability, would be different. As Figure
 12 1 shows, in six cost pools under witness Degen's method, a dollar of IOCS tally
 13 cost is worth less than 80 cents while in seven other cost pools a dollar of tally cost
 14 is worth more than 110 cents.

15 Figure 1: Ratio of MODS Pool Cost to IOCS Weighted Tally Cost (Reweighting
 16 Factor) by Number of MODS Pools



DMA-T-1

1 There are at least three reasons for the need to reweight tallies, none of which
 2 witness Degen can quantify: (1) clocking error, (2) sampling error, and (3) implicit
 3 wage rate differences between workers in the same craft. (Tr. 17/8154-8159).
 4 Clocking error is known to occur²⁵ and causes a discrepancy between data based
 5 on operations being performed and data based on operations into which the
 6 worker is clocked. Witness Degen confirmed that clocking error could contribute to
 7 the need for reweighting and has conceded that sampling error alone, or in
 8 combination with the implicit differences in wage rates, is probably not large
 9 enough to explain the extent to which IOCS tally costs must be reweighted within
 10 MODS cost pools. (Tr. 17/8154-8159).

11 Clocking error not only will result in the need to reweight, but also causes
 12 inappropriate distribution keys. For example, assume that an employee is clocked
 13 into an FSM operation, but is actually working in an LSM operation. If an IOCS
 14 data collector tallies this employee, records his MODS number as FSM (which is
 15 the correct number to record), and indicates that the tally is a direct tally, mixed
 16 mail and not-handling costs in the FSM cost pool will be at least partly distributed
 17 based on work actually performed in an LSM operation. Because of misclocking,
 18 there are direct tallies and hence distributing sets with, for example, flats and

²⁵Page 19 of the Inspection Service report "ALLIED WORKHOURS", which was filed as part of LR-H-236, indicates that Clerks and Mailhandlers systematically clocked into the wrong operation for many reasons. For example, "Supervisors had employees clock into a non-distribution operation at the beginning of their tour until the supervisor made individual work assignments. Employees then were supposed to report in their work area and initiate a 'move' to the correct operation number. Many employees did not make this 'move.' Employees used any timeclock and operation number that was convenient. In order to get 'on the clock' as soon as possible, employees used the first timeclock they came to when beginning their tour and returning from lunch..." Also, because the MODS operation number on the IOCS tally has never before been used for ratemaking purposes and IOCS data collectors may not have known the prevalence of employees working in a MODS operation different than the one into which they were clocked, the logical presumption should be that IOCS data collectors did not always record the operation into which the employee was clocked as opposed to the MODS operation which the employee was actually performing.

Witness Degen provides further proof of misclocking where he shows that there are costs for clerks performing window service activities while clocked into mail processing operations. He also indicates that there are mixed mail tallies for flats and IPPs and parcels in manual letter operations and tallies for flats and parcels in letter sorting machine operations. (Tr. 12/6400-6413).

DMA-T-1

1 parcels in letter operations and parcels in flat operations.²⁶

2 **B. Witness Degen's Untested Assumptions Produce Unreliable**
3 **Distribution Keys for Mixed Mail with Huge Coefficients of Variation**

4 Witness Degen's approach used a very large number of distributing sets to
5 perform the distributions of mixed mail and not-handling costs. Because he has
6 used so many distributing sets, a large number of them contain only a small
7 number of tallies. The resulting "thinness" of the distributing sets renders them
8 unreliable and unsuitable for ratemaking purposes.

9 To examine the thinness of the distributing sets, I first analyzed uncounted and
10 empty item mixed tallies. Excluding LDC 15, there are 49 cost pools and 16 item
11 types; if each possible combination were populated with uncounted or empty item
12 mixed mail tallies, there would be 784 distributing and 784 distributed sets.
13 Because only 467 of these 784 possible combinations are populated with costs to
14 be distributed, witness Degen needed only 467 distributing sets. Of these 467
15 distributing sets, 111 contained no direct tallies.²⁷ With a few exceptions, witness
16 Degen distributed the remaining 356 distributed sets using distributing sets within
17 the appropriate cost pool. (Tr.17/8151-8153).

18 Figure 2 shows the cumulative percentage of the costs distributed and the
19 number of distributing sets by the number of tallies in the distributing set for empty
20 and uncounted items. Over ten percent of the distributing sets contain only one
21 direct tally, almost 30 percent contain five or fewer tallies, and almost 40 percent
22 contain 10 or fewer tallies. Even more disturbing, over three percent of the tally
23 cost is distributed on the basis of one tally, almost ten percent of the cost is

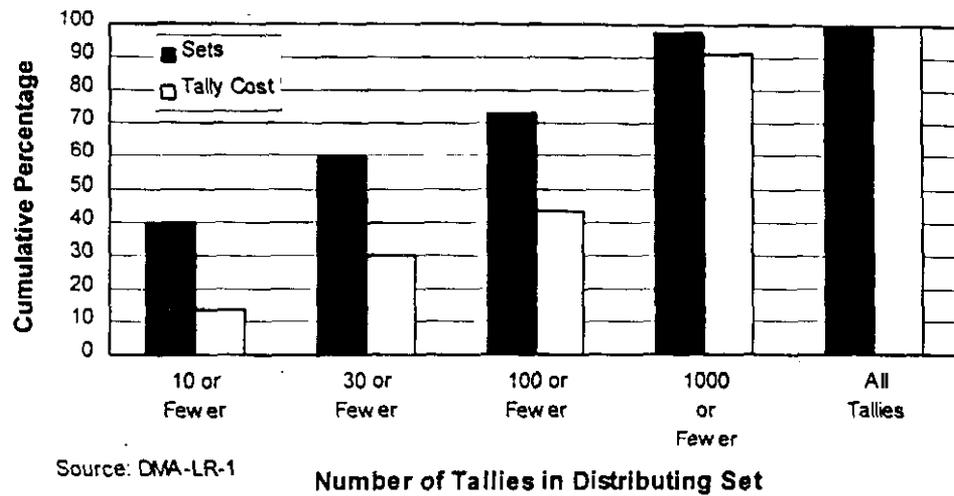
²⁶See LR-H-305, dma17.xls

²⁷ Although witness Degen distributed mixed mail uncounted/empty item tallies based on distributing sets comprising only one direct tally, no possible assumption would allow him to distribute uncounted or empty items within a pool without at least one direct tally. Consequently, when what would be the distributing set was empty, he performed the distribution across all pools by item type rather than within pool.

DMA-T-1

1 distributed on five or fewer tallies, and over 13 percent of the cost is distributed on
 2 10 or fewer tallies. Finally, almost 30 percent of the cost is distributed on the basis
 3 of 30 or fewer tallies. (See DMA-LR-1).

4 Figure 2: Cumulative Percentage of the Number of Distributing Sets and the Costs
 5 Distributed by the Number of Tallies in the Distributing Set:
 6 Empty/Uncounted Items

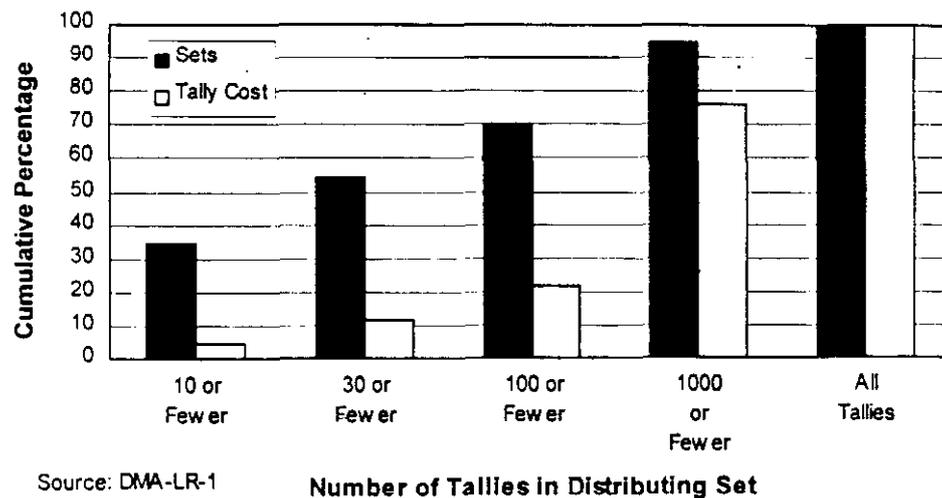


7 I next examined the thinness of data for identified mixed mail containers. What
 8 is true for items is also generally true for these containers. As described earlier,
 9 witness Degen assumed that the subclass composition of items and loose shapes
 10 in identified mixed containers by cost pool was the same as the subclass
 11 composition of these items and loose shapes outside of containers by cost pool.
 12 Therefore, he distributed the costs for items in identified mixed containers using
 13 the same distribution keys that he used to distribute the costs for uncounted and
 14 empty items to subclasses. For this reason, they are subject to the same
 15 uncertainties as the distributing sets for uncounted and empty items. Figure 3
 16 shows the cumulative percentage of the costs distributed and the number of

DMA-T-1

1 distributing sets by the number of tallies in the distributing set for identified mixed
 2 mail containers. About nine percent of the distributing sets for identified mixed
 3 containers contain only one tally, more than 25 percent contain five or fewer tallies,
 4 and almost 35 percent contain 10 or fewer tallies. Also, almost five percent of the
 5 cost is distributed on ten or fewer tallies and about ten percent of the cost is
 6 distributed on 25 or fewer tallies. (See DMA-LR-1). Moreover, not only are the
 7 data thin, but there is also reason to question their precision. Witness Degen
 8 himself confirmed that data collectors merely "eyeball" identified mixed containers
 9 to record their contents. (Tr. 12/6297-6299).

10 Figure 3: Cumulative Percentage of the Number of Distributing Sets and the Costs
 11 Distributed by the Number of Tallies in the Distributing Set:
 12 Identified Mixed Containers

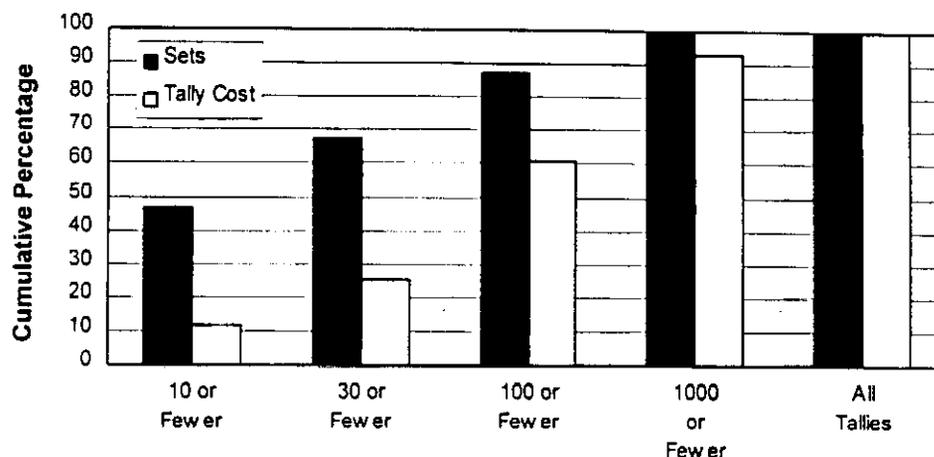


13 Finally, I examined the thinness of data for unidentified and empty containers.
 14 Figure 4 shows the cumulative percentage of the costs distributed and the number
 15 of distributing sets by the number of tallies in the distributing set for unidentified
 16 and empty containers. About nine percent of the distributing sets contain only one
 17 tally, almost 30 percent contain five or fewer tallies, and almost 47 percent contain

DMA-T-1

1 10 or fewer tallies. Even more disturbing, almost six percent of the cost for
 2 unidentified and empty containers is distributed on five or fewer tallies and over 11
 3 percent of the cost is distributed on 10 or fewer tallies. Finally, more than 25
 4 percent of the cost is distributed on the basis of 30 or fewer tallies. (See DMA-LR-
 5 1).

6 Figure 4: Cumulative Percentage of the Number of Distributing Sets and the Costs
 7 Distributed by the Number of Tallies in the Distributing Set:
 8 Unidentified/Empty Containers



Source: DMA-LR-1

Number of Tallies in Distributing Set

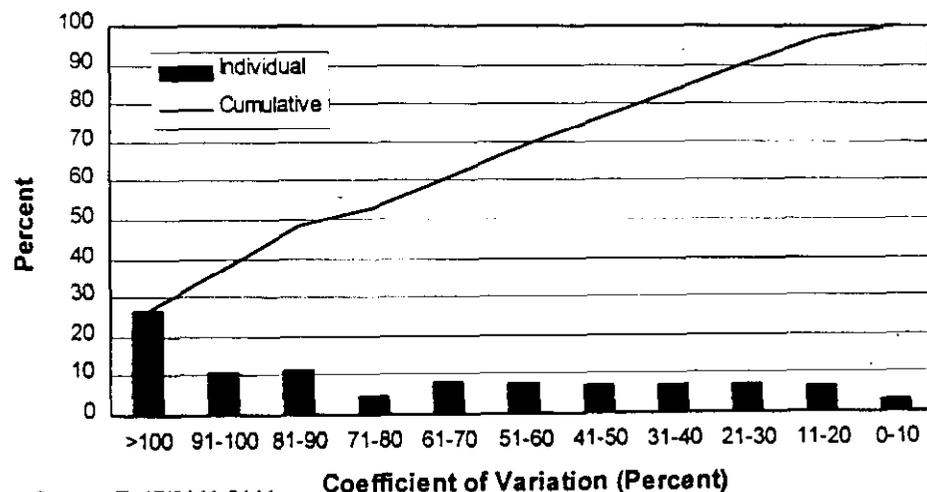
9 The "data thinness" problem described above yields distribution keys with a
 10 significant amount of sampling error; all else being equal, distribution keys based
 11 on a smaller number of direct mail tallies have larger sampling errors than those
 12 based upon a larger number of direct mail tallies. Witness Degen provided a
 13 measure of sampling error: the coefficients of variation (CV) around subclass costs
 14 by item type/loose shape and cost pool, which constitute the subclass costs
 15 underlying most of witness Degen's distribution keys for mixed mail costs. (Tr.
 16 17/8141-8144).

17 The coefficient of variation expresses the standard deviation as a percentage of

DMA-T-1

1 the mean; it is often used as a measure of the precision of the estimate.²⁸ A
 2 coefficient of variation of 50 percent or more indicates that the 95 percent
 3 confidence interval for a normal distribution overlaps zero. With a coefficient of
 4 variation this large, the estimate consequently does not differ significantly from
 5 zero. Figure 5 shows the distribution of the subclass costs of the distributing sets
 6 with respect to the coefficient of variation. As the bar graph shows, most have a
 7 large coefficient of variation; in fact, almost 25 percent of them have a CV greater
 8 than 100 percent. The line graph in the figure is the cumulative graph of the bar
 9 graph. Thus, it shows the total percentage of subclass costs with coefficients of
 10 variation below any given percentage. As the graph shows, 70 percent of the
 11 subclass costs have CVs greater than 50 percent. A CV this large indicates that
 12 the underlying cost data are too uncertain to be used as a basis for distributing
 13 costs to subclasses.

14 Figure 5: Distribution and Cumulative Distribution of Subclass Costs Underlying
 15 Distributing Sets for Items and Identified Mixed Containers by Coefficient of
 16 Variation



Source: Tr.17/8141-8144

²⁸George W. Snedecor and William G. Cochran, Statistical Methods 37 (7th ed. 1982).

DMA-T-1

1 **C. Witness Degen's Distribution of Not-Handling Mail Costs Within Cost**
2 **Pools Is Unfounded**

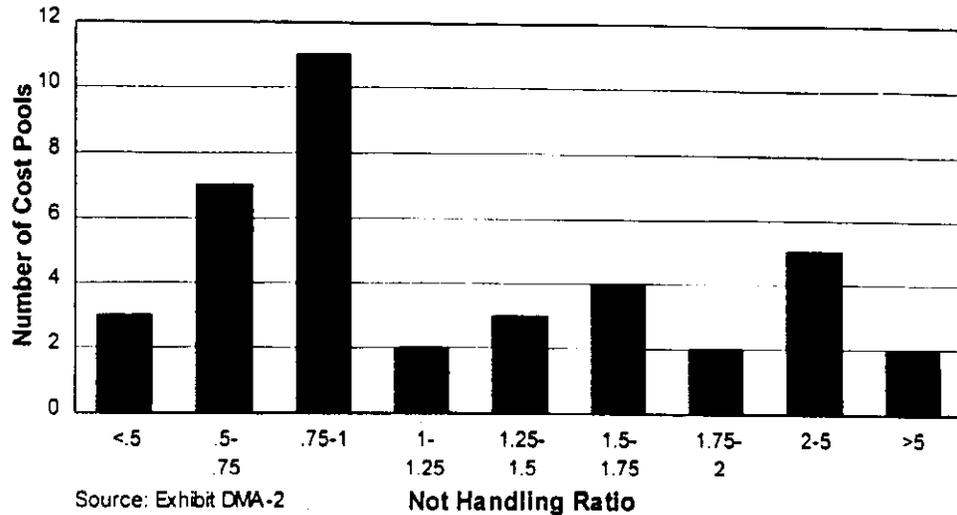
3 Almost 43 percent of all mail processing cost in the base year (\$5.4 billion) is
4 not-handling mail cost. The majority of this cost is for breaks and personal needs,
5 clocking in and out of operations, and handling empty equipment other than items
6 and containers. The remainder of the costs are for training, window service, and
7 general administration services. Unfortunately, witness Degen's distribution of
8 these costs within cost pools is grounded neither in economic theory nor in postal
9 operational logic.

10 Witness Degen's distribution of not-handling costs implicitly assumes that not-
11 handling costs within each of 50 different cost pools are "caused" by the amount of
12 mail processed within the pool and that they are directly proportional to the direct
13 and distributed mixed mail costs in each of the 50 pools. He has not tested the
14 validity of this assumption of causality, (Tr.12/6666), but only speculates that such
15 a causal relationship exists.

16 Not-handling mail costs as a percentage of the sum of direct plus mixed mail
17 costs varies widely across MODS cost pools. Figure 6 shows the distribution of
18 these percentages across MODS pools. As the figure shows, 36 of the 39 MODS
19 pools have a not-handling cost percentage of over 50 percent and two have a
20 percentage of over 500 percent. Only three of the MODS pools have a not-
21 handling percentage of under 50 percent. Indeed, not-handling costs are over half
22 the costs in 18 of the 39 MODS cost pools. Given that the Postal Service has yet
23 to develop a fully satisfactory explanation of why not-handling costs are so large
24 and why they differ so dramatically across operations, there is insufficient proof to
25 support the assumption that they are caused by activities within individual cost
26 pools.

DMA-T-1

1 Figure 6: Distribution of Not-Handling Costs to the Sum of Direct Plus Mixed Mail
 2 Costs, by MODS Cost Pool



3 An alternate, and equally plausible, hypothesis of why not-handling mail costs
 4 are higher in some operations than in others is that the Postal Service assigns
 5 excess labor to specific operations, for example, where productivity is not
 6 measured or where there is little marketplace competition for the mail being
 7 handled (or not handled) in the operation.²⁹ This implies that there will be higher
 8 not-handling mail costs for those operations. If this hypothesis were true, then
 9 witness Degen's methodology would unfairly assign high not-handling mail costs to
 10 certain cost pools while assigning low not-handling mail costs to other cost pools.
 11 In this case, a less speculative distribution method would distribute not-handling
 12 mail costs across all cost pools as was done in R94-1 and as witness Degen does
 13 for certain exceptions to his methods.

²⁹The Inspection Service report "ALLIED WORKHOURS" described above concludes that there is excess labor in allied operations where productivity is not measured. By increasing productivity, allied work hours would decrease by nearly 13 percent. (LR-H-234, Executive Summary, at 2).

DMA-T-1

VI. WITNESS DEGEN'S METHODS IMPROVED

1
2 Because witness Degen's reweighting of tallies violates the principles of
3 statistical sampling, because he has not sufficiently addressed the four areas of
4 concern articulated by the Commission with respect to IOCS, because he bases
5 the distribution of mixed mail on unsupported implicit assumptions and thin data,
6 and because his distribution of not-handling costs is not grounded in causality, I
7 recommend that the Postal Rate Commission reject his approach. In the absence
8 of a better alternative, I further recommend that the Commission use the method
9 applied in R94-1. This approach is not perfect; there is no reason why the Postal
10 Service cannot count more of the mixed mail; there is no reason why the Postal
11 Service cannot design and implement a study to determine the best distribution
12 keys for what is currently uncounted mixed mail; there is no reason why the Postal
13 Service cannot examine the number and ramifications of employees displaced by
14 the increase in automation; and there is no reason why the Postal Service cannot
15 address the distribution and level of not-handling costs. All of these measures
16 would improve the method the Commission approved in R94-1.

17 If the Commission decides, however, to accept part of witness Degen's
18 approach - which, I believe, would be a serious mistake - it should correct his most
19 egregious flaws. I propose improvements to his mail processing distribution
20 methodology which would distribute volume-variable IOCS weighted tally costs
21 rather than volume-variable MODS pool costs, distribute mixed mail costs across
22 pools and item or container types rather than within them, and distribute not-
23 handling costs across MODS pools rather than within them.

24 Distributing IOCS weighted tally costs would obviate the need for reweighting.
25 Thus, in my system, a dollar of cost is always a dollar of cost. Distributing mixed
26 mail costs across pools and item and container types necessitates fewer and
27 simpler assumptions regarding unknown subclass composition. It also produces
28 distributing sets with significantly larger numbers of tallies, resulting in cost
29 distributions of greater reliability. Finally, distributing not-handling costs across

DMA-T-1

1 cost pools requires fewer and simpler assumptions about causality within these
2 pools. Because the Postal Service has not yet performed a study exploring the
3 high level and growth of not-handling costs and has provided no information
4 concerning the causality of these costs, there is no reason to distribute them within
5 cost pools.

6 I have performed the computations to support the distributions I recommend
7 above. My results appear in Exhibit DMA-3, which compares witness Degen's and
8 my proposed mail processing cost distributions for MODS offices, non-MODS
9 offices, BMCs, and in total.³⁰ The SAS program underlying the computations is
10 filed in DMA-LR-2.

³⁰Note that Exhibit DMA-3 presents the mail processing cost distribution of witness Buc and witness Degen before the premium pay adjustment and the redistribution of clocking in and out costs for BMCs and non-MODS facilities from C/S 3.3 to C/S 3.1.

DMA-T-1

EXHIBIT DMA-1

FY 96 and BY 96 Methods for Distributing Mail Processing Costs to Subclass/Special Service

Tally Type	FY 96 ¹	BY 96 ²
<p>Direct. (\$5.8 billion) Tallies where IOCS data collector recorded subclass/special service and shape of mail being handled.</p> <p>Piece Handlings – Tallies where data collector observed employee handling single piece of mail.</p> <p>Counted Items – Tallies where data collector counted all subclasses and shapes of mail in item (e.g., bundle, tray, con-con, pallet, or sack).</p> <p>Top-Piece Rule Items – Tallies where employee was handling nonidentical mail that is loose, in a bundle, or in a tray, and data collector applied top-piece rule.</p> <p>Identical Items and Containers – Tallies where employee was handling an item or container (e.g., wiretainer) containing identical mail.</p>	Distributed to subclass/special service based upon subclass information recorded by IOCS data collector.	Distributed to subclass/special service based upon subclass information recorded by IOCS data collector.
<p>Direct - Class Specific. (Costs included above)</p> <p>Tallies where employee was observed handling specific class of mail but where the subclass of the mail was not recorded.</p>	Distributed to subclass/special service in proportion to direct tally costs of same class.	Distributed to subclass/special service in proportion to direct tally costs of same class.
<p>Mixed – Uncounted/Empty Items. (\$400 million) Tallies where employee was observed handling item containing nonidentical mail, and for which data collector did not record any information regarding the subclasses of mail in the item. This category also includes tallies where the employee was handling empty items.</p>	Mixed shape tallies (e.g., mixed letter tallies) in the old method include costs for activity codes 5600-5750. They are distributed to subclass/special service in proportion to direct tally costs of the same shape.	Distributed to subclass/special service in proportion to direct item tally costs of the same item type (16 item types).
<p>Mixed – Identified Containers. (\$600 million) Tallies where data collector observed an employee handling a container of nonidentical mail, and for which the data collector identified the contents (e.g., items and loose shapes) of the container.</p>	See "Mixed – Uncounted/Empty Items."	<ol style="list-style-type: none"> 1. Distributed to 21 item types/loose shapes based upon identified container contents. 2. Distributed to subclass/special service in proportion to direct item tally costs of same item type/loose shape.
<p>Mixed – Unidentified/Empty Containers. (\$500 million) Tallies where data collector observed employee handling (1) a container of nonidentical mail but container contents were not identified or (2) an empty container.</p>	See "Mixed – Uncounted/Empty Items."	Distributed to subclass/special service in proportion to identical and identified container tally costs of the same container type (10 types).
<p>Not-Handling. (\$5.4 billion) Tallies where employee was not-handling pieces of mail, items, or containers.</p>	Distributed to subclass/special service in proportion to distribution of all other mail processing costs across all basic functions and CAGs. In old method, this category only included overhead costs (6521-23).	Distributed to subclass/special service in proportion to distribution of all other mail processing costs.

¹Except where noted, distributions are within CAG and basic function.

²With a few exceptions, distributions are within cost pool unless there are no direct tallies within the cost pool to be used as a distribution key, in which case distributions are made across cost pools. The exceptions are listed on page 15, note 23.

DMA-T-1

EXHIBIT DMA-2 (revised 2/20/98)

Ratio of Not-Handling Tally Cost to Direct and Mixed Tally Cost by MODS Cost Pool³¹

Cost Pool	Cost Pool Name	Not Handling Tally Cost	Direct & Mixed Tally Cost	Ratio of Not Handling Costs to Direct/Mixed Costs
OCR/	OCR	82,302	156,411	0.53
BCS/	BCS, BCS on OCR	248,067	456,017	0.54
LSW/	LSM, MPLSM, & SPLSM w/BCR	165,721	466,926	0.35
FSM/	SPFSM, FSM, & FSM/BCR	216,459	452,096	0.48
MECPARC	Mechanized Parcels	4,846	6,616	0.73
SPBS OTH	SPBS - Non Priority	83,868	103,251	0.81
SPBSPRIO	SPBS - Priority	26,389	28,675	0.92
1SACKS_M	Mechanical Sort - Sack Outside	30,027	19,189	1.56
MANL	Manual Letters	426,102	937,849	0.45
MANF	Manual Flats	179,480	347,505	0.52
MANP	Manual Parcels	29,584	37,204	0.80
PRIORITY	Manual Priority	80,708	99,928	0.81
1CANCMP	Cancellation & Mail Preparation - metered	126,646	189,584	0.67
1OPBULK	Opening Unit - BBM	132,519	140,398	0.94
1OPPREF	Opening Unit - Preferred Mail	342,981	363,247	0.94
1POUCHNG	Pouching Operations	210,272	217,138	0.97
1BULK PR	Bulk Presort	8,721	7,624	1.14
1SCAN	Air Contract DCS and Incoming	35,468	26,375	1.34
1SACKS_H	Manual Sort - Sack Outside	87,702	64,750	1.35
1PLATFRM	Platform	561,192	328,558	1.71
INTL	International	56,899	76,664	0.74
BUSREPLY	Business Reply/Postage Due	13,980	18,489	0.76
REGISTRY	Registry	80,785	63,016	1.28
1EEQMT	Empty Equipment	26,203	15,577	1.68
EXPRESS	Express Mail	55,888	32,760	1.71
REWRAP	Damaged Parcel Rewrap	9,166	4,998	1.83
MAILGRAM	Mailgram	379	140	2.71
1MISC	Miscellaneous Activity	91,895	21,512	4.27
1SUPPORT	Mail Processing Support	171,495	12,743	13.46
LD44	LDC 44 - Post-Office Box Distribution	51,321	81,429	0.63
LD49	LDC 49 - Computerized Forwarding Syst.	116,318	151,896	0.77
LD42	LDC 42 - Unit Distribution - Mechanized	4,544	5,428	0.84
LD43	LDC 43 - Unit Distribution - Manual	269,073	316,278	0.85
LD41	LDC 41 - Unit Distribution - Automated	13,396	11,551	1.16
LD48_SSV	LDC 48 - Customer Service / Spec. Svc.	65,074	34,428	1.89
LD48 OTH	LDC 48 - Customer Service / Other	84,609	40,636	2.08
LD48 EXP	LDC 48 - Customer Service / Express	3,513	1,058	3.32
LD79	LDC 79 - Mailing Req' & Bus. Mail Entry	116,641	24,760	4.71
LD48_ADM	LDC 48 - Customer Service / Admin	139,438	23,184	6.01
Total		4,449,671	5,385,888	0.83

³¹Source: LR-H-23.

DMA-T-1

EXHIBIT DMA-3 (Revised 2/18/98)

DMA's Alternative Methodology and Witness Degen's Proposed Methodology Distributing Volume-Variable Mail Processing Costs by Subclass (\$000s)

Class	Subclass	DMA Alternative BY 96 Cost Distribution				Degen Total	Difference Total
		MODS	Non-MODS	BMC	Total		
		[1]	[2]	[3]	[4]	[5]	[6]
First Class	Letters & Parcels	3,854,655	783,002	4,806	4,642,463	4,651,746	-9,283
First Class	Presort Letters & Parcels	807,532	212,044	538	1,020,114	1,063,109	-42,995
First Class	Single Piece Cards	123,957	26,170	87	150,214	139,939	10,275
First Class	Presort Private Cards	30,909	7,707	0	38,616	36,425	2,191
Priority		256,368	57,074	1,588	315,031	477,897	-162,866
Express		40,555	10,853	17	51,424	84,169	-32,745
Mailgrams		110	0	0	110	74	36
Periodicals	Within County	9,438	5,058	68	14,564	15,161	-597
Periodicals	Regular	303,568	82,934	13,163	399,665	461,712	-62,047
Periodicals	Nonprofit	55,451	14,009	3,097	72,557	80,739	-8,182
Periodicals	Classroom	2,266	1,132	586	3,983	5,684	-1,701
Standard (A)	Single Piece Rate	52,148	11,376	12,175	75,699	78,662	-2,963
Standard (A)	ECR	137,715	68,017	15,225	220,957	266,254	-45,297
Standard (A)	Regular	1,035,527	290,569	140,491	1,466,586	1,545,319	-78,733
Standard (A)	Nonprofit ECR	17,844	5,309	1,357	24,510	28,948	-4,438
Standard (A)	Nonprofit Regular	278,678	58,339	19,998	357,015	367,512	-10,497
Standard (B)	Parcels - Zone Rate	39,636	14,378	71,863	125,876	159,880	-34,004
Standard (B)	Bound Printed Matter	21,269	10,655	35,196	67,120	74,506	-7,386
Standard (B)	Special Rate	16,694	7,525	45,917	70,136	68,491	1,645
Standard (B)	Library Rate	4,884	1,390	9,203	15,477	16,350	-873
USPS		54,904	14,424	3,479	72,807	77,658	-4,851
Free for Blind/Handicapped		5,923	744	2,105	8,772	10,100	-1,329
International		164,813	5,252	27,232	197,297	209,018	-11,721
Special Services	Registry	34,634	8,884	330	43,848	42,162	1,686
Special Services	Certified	8,776	15,837		24,613	18,473	6,140
Special Services	Insurance	304	609	29	942	771	171
Special Services	COD	1,091	1,782		2,873	1,815	1,058
Special Services	Special Delivery	300			300	243	57
Special Services	Money Orders				0		0
Special Services	Stamped Envelopes				0		0
Special Services	Special Handling	165	157		322	200	122
Special Services	Post Office Box				0		0
Special Services	Other	68,847	25,001	395	94,243	76,063	18,180
Total Volume-Variable		7,428,960	1,740,229	408,946	9,578,135	10,059,080	-480,945

[1] DMA-LR-2 at page 84 adjusted to reflect activity code 5461 in the direct tally set. See USPS/DMA-T-1-23.

[2] DMA-LR-2 at page 119.

[3] DMA-LR-2 at page 38.

[4] = [1] + [2] + [3].

[5] USPS-T-12, Table 5, page 23, Column "Total."

[6] = [4] - [5].

1 CHAIRMAN GLEIMAN: Mr. Buc, have you had an
2 opportunity to examine the packet of designated written
3 cross-examination that was made available earlier today?

4 THE WITNESS: I have.

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

8 THE WITNESS: They would be.

9 CHAIRMAN GLEIMAN: That being the case, I am going
10 to provide two copies of the designated written
11 cross-examination of Witness Buc to the reporter.

12 THE WITNESS: Mr. Chairman, excuse me, with one
13 exception. We noticed that one of the errata that we had
14 filed was not reflected in the package. We had cited
15 incorrectly to a series, to a BLS series in my response to
16 DMA-T-1-18, and the footnote at the bottom, that cited to
17 series MPU 300003, should have read MPU 3000703, and so we
18 took the liberty of putting the correct pages into these two
19 copies and --

20 CHAIRMAN GLEIMAN: Mr. Reporter?

21 THE WITNESS: Excuse me for not having said that
22 earlier.

23 CHAIRMAN GLEIMAN: All right. That's okay. That
24 is the least of our problems, I can assure you.

25 THE REPORTER: What kind of series, a BLS series?

1 THE WITNESS: BLS series.

2 CHAIRMAN GLEIMAN: The reporter now has the
3 corrected designated written cross-examination of the
4 witness and I will direct that it be accepted into evidence
5 and transcribed into the record at this point.

6 [Designation of Written
7 Cross-Examination of Lawrence G.
8 Buc, DMA-T-1, was received into
9 evidence and transcribed into the
10 record.]

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, DC 20268-0001

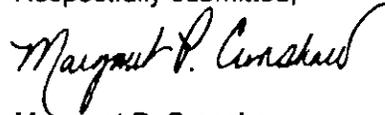
Postal Rate and Fee Changes, 1997

Docket No. R97-1

DESIGNATION OF WRITTEN CROSS-EXAMINATION
OF DIRECT MARKETING ASSOCIATION, INC.
WITNESS LAWRENCE G. BUC
(DMA-T1)

<u>Party</u>	<u>Interrogatories</u>
Office of the Consumer Advocate	UPS/DMA-T1-1 USPS/DMA-T1-1-23
United Parcel Service	USPS/DMA-T1-10-11, 14
United States Postal Service	UPS/DMA-T1-1 USPS/DMA-T1-1-23

Respectfully submitted,



Margaret P. Crenshaw
Secretary

UPS/DMA-T1-1. Please refer to page 20 of your testimony.

- (a) Please confirm that your analysis of distribution key "thinness" includes distribution keys which would be "thin" under the LIOCATT system (e.g., Nonmods Outgoing, Incoming, Transit, and Other pools). If not confirmed, please explain.
- (b) Please confirm that LIOCATT uses distribution keys with fewer than five tallies in the distributing set. If not confirmed, please explain.
- (c) Please confirm that your distribution analysis would result in distribution keys with fewer than five tallies. If not confirmed, please explain.

UPS/DMA-T1-1 Response:

- (a) I have not counted the number of elements in the distributing sets in LIOCATT. However, given that LIOCATT distributes 6 shape-specific mixed mail codes (excluding mixed all shapes because its key is comprised of the key of the other mixed mail codes) across 4 basic functions in 8 CAGs and 5 uniform operations, there are consequently 960 possible distributing sets. Note, however, that these distributing sets comprise all 90,000 direct tallies. In contrast, witness Degen uses 1540 possible distributing sets for mixed mail, and these sets are almost solely based on direct item tallies which comprise only about 21,000 tallies. Thus, witness Degen bases more keys on far fewer tallies.

Please note that my recommendation that the Commission use the IOCS/LIOCATT system for distributing mixed mail does not constitute an enthusiastic endorsement of that system. If the Postal Service responded to the Commission's concern regarding the lack of resources devoted to IOCS, they would increase the number of tallies in IOCS and the distributing sets would consequently be thicker. This would increase the statistical reliability of the system. If the Postal Service responded to the Commission's concern about the increase in the number and

3

proportion of mixed mail tallies, they would count more of the mixed mail, leaving fewer tallies to be distributed through the use of distribution keys. Both of these would improve the IOCS/LIOCATT system. Further, I believe that the Postal Service could combine smaller CAGs to produce thicker keys. On balance, however, even the current IOCS/LIOCATT system is substantially better than the alternative witness Degen proposes for distributing mixed mail costs.

- (b) I have not counted the number of tallies in the distribution keys in LIOCATT.
- (c) Not confirmed. If you are referring to my "modified" Degen approach (see my direct testimony at 27-28), there are 70,751 tallies in the distributing set for MODS offices, 12,221 for non-MODS offices, and 4,525 for BMCs.

- 2 -

USPS/DMA-T1-1. Please refer to Library Reference H-10, Exhibits A, B, and C. Please confirm that the detailed personnel cost reduction and other program dollar amounts for supervisors, clerks, mail handlers, and city carriers listed by program equal the amounts reflected in the rollforward model runs used in this Docket for cost segments two, three, and six and seven. If you do not confirm please list any differences and the amounts.

USPS/DMA-T1-1 Response:

The totals for Library Reference H-10, Exhibit A, Summary of FY 1997 Other Program Changes from Prior Year, match the totals shown in Witness Tayman's Table 11, Other Programs for FY 1997. Similarly, the totals for Library Reference H-10, Exhibit B, Summary of FY 1998 Other Program Changes from Prior Year, also match the totals shown in Witness Tayman's Table 11 for FY 1998. With the exception of a difference in sign, the totals for Library Reference H-10, Exhibit C match the total for Witness Tayman's Table 10, Cost Reductions.

- 3 -

USPS/DMA-T1-2. On page 4 lines 24-27 of your testimony you state "the rollforward program incorporates a number of upward adjustments in mail volume, non-volume workload and other programs that increase the costs of supervisors when clerks' and mailhandlers' and carriers' costs increase. However, the cost reduction portion of the rollforward program does not contain a corresponding downward adjustment in supervisors' costs to reflect savings in direct labor when costs for clerks, mailhandlers and carriers decrease."

- (a) Please confirm that a majority of the other programs listed on Exhibits A and B of LR H-10 which reflect increases in clerk, mailhandler, and city carrier costs do not reflect increases in supervisor costs. If you do not confirm please explain fully.
- (b) In your opinion should all other programs which result in cost increases to clerks, mailhandlers, or city carriers result in corresponding cost increases in supervisors? If your answer is no, please explain which ones should result in increases and which ones should not and why. Include in any negative answer an explanation of how these other programs differ conceptually from the cost reductions which you have argued should have corresponding decreases in supervisors.

USPS/DMA-T1-2 Response:

- (a) While a majority of the other programs listed on Exhibits A and B of LR-H-10, which reflect increases in clerk, mailhandler, and city carrier costs do not reflect increases in supervisor costs, some do. Significantly, in both Exhibit A and Exhibit B, supervisors' costs increased approximately 10 percent of the increase of the components supervised.
- (b) Not all programs which have increases in clerks, mailhandlers, or city carriers will necessarily have corresponding increases in supervisors. I would find it curious if none of the programs with increases in clerks, mailhandlers, or city

- 4 -

carriers had corresponding increases in supervisors. However, the point is that, unlike programs where there was a cost increase to clerks, mailhandlers or city carriers, for FY 1997 and FY 1998 program managers never adjusted supervisors' costs downward when savings for the component supervised were realized from cost reduction programs. (See LR-H-12 at 93-96; Tr. 13/7221). Because managers apparently never considered adjustments in supervisors' costs, it is only reasonable to decrease supervisors' costs proportional to the decrease in the related craft workers' costs.

- 5 -

USPS/DMA-T1-3. Please refer to page 5, line 13 of your testimony where you state that "it appears that program managers simply did not realize that they were supposed to adjust supervisors' and technicians' costs downward as they did for the costs for mail processing clerks and mailhandlers and city carriers due to the cost reduction programs." Also refer to the responses of witness Patelunas to DMA/USPS-T15-1b. and DMA/USPS-T15-5e.i).

- (a) Please confirm that the responses to the two interrogatories cited above explain that program managers used "their own understanding of the relationships between craft employees and supervisors when they determined these cost reduction estimates" and that "it would not be realistic to conclude from your arithmetic that program managers did not analyze the effect on supervisor and technician workyears". If you do not confirm please explain fully.
- (b) Please explain how you determined that program managers "simply did not realize that they were supposed to adjust supervisors' and technicians' costs downward as they did for the costs for mail processing clerks and mailhandlers and city carriers due to the cost reduction programs". Include in your answer how you interpreted the two interrogatory responses cited above in making your determination.
- (c) Isn't it possible that program managers considered the viability of supervisor savings related to cost reduction programs and determined that they were not viable? If your answer is other than an unqualified yes, please explain the basis for your conclusion.

USPS/DMA-T1-3 Response:

- (a) Witness Patelunas's responses speak for themselves.
- (b) There are two reasons for my referenced statement. First, witness Patelunas responded that the program managers who estimated savings from personnel-related cost reduction programs for Clerks and Mailhandlers and for City Carriers were not instructed to determine whether these savings

- 6 -

reduce the number of supervisors' hours. (Tr. 13/7211). Second, although Exhibit C of Library Reference H-10 lists 30 cost reduction program changes and their accompanying cost and workload savings for clerks, 12 for mailhandlers, and 10 for carriers, none of these changes resulted in corresponding savings for supervisors.

With regard to witness Patelunas's response to DMA/USPS-T15-1.b, I think that program managers primarily consider direct craft labor costs because direct labor costs are ten times higher than supervisors' costs. I doubt that program managers spend much time contemplating the relationship between craft employees and supervisors. For this reason and based upon my second point above, I think program managers ignored this relationship when estimating cost savings. With regard to witness Patelunas' response to DMA/USPS-T15-5e.i., the fact that no program manager estimated supervisor cost savings when the costs for the component supervised decreased suggests that witness Patelunas is incorrect.

(c) Although it is possible that program managers did consider the viability of cost savings even though they weren't instructed to do so, it appears much more likely that they simply didn't consider the issue.

- 7 -

USPS/DMA-T1-4. Please refer to page 3 of LR H-10 which explains how the cost reduction and other program cost impacts used in this Docket were estimated and evaluated.

- (a) Confirm that the last paragraph on the page states that "major program plans and assumptions are subjected to an intensive review and validation by our investment review and approval process. During the formulation phase of the budget process, an additional reality check is performed on all major program assumptions. This step utilizes a team of field operational and financial managers to review the program savings/cost targets and resolve issues with the program managers or sponsors. These steps ensure planning assumptions used in formulating program expectations are reasonable and accurately portray the impact a program will have on the Postal Service's financial position." If you do not confirm please explain your answer fully.
- (b) Please confirm that the process described above indicates that cost reduction and other programs receive more than more than [sic] cost reduction and other programs receive more than one level of review. If you do not confirm please explain your answer fully.
- (c) Confirm that a process with multiple levels of review would tend to lessen the likelihood that supervisor savings related to cost reduction programs would be overlooked as opposed to consciously determined not to result from the cost reduction programs reflected in the revenue requirement and the rollforward model runs used in this Docket. If you do not confirm please explain your answer fully.

USPS/DMA-T1-⁴~~3~~ Response:

- (a) Confirmed.
- (b) Confirmed, if the process described in subpart (a) actually takes place.
- (c) Not confirmed. In my experience in both the public and private sectors, I have found that budget reviews most often focus on changes from the previous year.

- 8 -

In other words, reviewers generally focus on changes from the past more than they focus on cost estimates for programs unchanged from past practices. Because program managers did not change supervisors' costs, I think that the implicit assumption that supervisors' costs do not change when costs for the components supervised change most likely went unnoticed in the budget review. In addition, such costs may have been overlooked because supervisors' costs are a small percentage of the costs of the components supervised. Alternatively, if supervisors' costs were considered at all, given the Postal Service's interest in restoring equity and given their position as a regulated cost of service monopolist, I believe that their incentives to overestimate their revenue needs are stronger than their incentives to underestimate them.

- 9 -

USPS/DMA-T1-5. Assume that supervisor cost savings related to cost reduction programs were evaluated and consciously determined by Postal Service program managers and program reviewers not to be viable for the development of budgets and the revenue requirement for this Docket.

- (a) Under such a scenario, should supervisor cost reduction savings not recognized by Postal management as viable for budget and revenue requirement purposes be artificially reflected in the revenue requirement using the mechanical calculation method you have proposed? Please explain your answer fully.**
- (b) In your opinion, will the additional supervisor savings you are recommending for inclusion in the revenue requirement be achieved (captured) if they are not reflected in Postal Service Budgets? Please explain your answer fully?**

USPS/DMA-T1-5 Response:

- (a) Postal Service revenue requirements should reflect the Postal Service's best estimates. If the Postal Service does not believe cost savings or increases will materialize, they should not estimate that they will.**
- (b) Regulated cost-of-service monopolists without shareholders (like the Postal Service) are not widely known for being efficient producers. Thus, even cost savings that are estimated in budgets are sometimes hard to capture. I believe it is less likely that savings will accrue that are not estimated in the budget. Savings that are not estimated in either revenue requirements or budgets are even less likely to accrue.**

USPS/DMA-T1-6.

- (a) Please confirm that the IOCS tally cost weight (field F9250) is the ratio of the cost associated with a craft/IOCS CAG stratum combination to the number of tallies in the craft/IOCS CAG stratum combination. If you do not confirm, please explain.
- (b) Please confirm that the IOCS tally cost weight field (F9250) assumes that each unit of time (tally) in a craft/IOCS CAG stratum combination has the same associated cost. If you do not confirm, please explain.
- (c) If there is wage dispersion within a craft/IOCS CAG stratum combination, will the IOCS tally cost weight (field F9250) overstate the cost associated with observations of lower-wage employees and understate the cost associated with higher-wage employees? Please explain your response fully.
- (d) If lower-wage employees are more likely to be found in a specific operation, will the total IOCS tally cost weight (field F9250) for tallies associated with that operation tend to overstate the true cost of the operation? Please explain your response fully.
- (e) If higher-wage employees are more likely to be found in a specific operation, will the total IOCS tally cost weight (field F9250) for tallies associated with that operation tend to understate the true cost of the operation? Please explain your response fully.
- (f) Would wage dispersion within craft/IOCS CAG stratum combinations be a reason to modify the IOCS tally cost weights? Please explain fully and reconcile your answer with your responses to parts c-e of this interrogatory.

USPS/DMA-T1-6 Response:

(a) Confirmed

(b) Confirmed

(c) Yes. To the extent the tally weight is the same for each employee, it overstates the cost of a tally associated with a lower wage employee and understates the cost of a tally associated with a higher wage employee. Note, however, that IOCS/LIOCATT was designed to find the cost of mail processing by class and subclass and not the cost of single observations.

(d) I do not believe that the sampling frame in IOCS is designed to find the cost of specific mail processing operations. If it is used to do so, it will likely produce estimates with high variance. If the sampling frame is used for an unintended purpose (to find the cost of a particular operation) and if lower wage employees are more likely to be found in this particular operation, using the tallies and their associated costs will tend to overstate the true costs of the operation. If the Postal Service is interested in determining the costs for a specific purpose, it must design a sampling scheme for that purpose.

(e) I do not believe that the sampling frame in IOCS is designed to find the cost of specific mail processing operations. If it is used to do so, it will likely produce estimates with high variance. If the sampling frame is used for an unintended purpose (to find the cost of a particular operation) and if higher wage employees are more likely to be found in a specific operation, using the tallies and their associated costs will tend to understate the true costs of the operation. If the Postal Service is interested in determining the costs for a specific purpose, it must design a sampling scheme for that purpose.

(f) No. Given that within a craft/IOCS CAG strata, each employee has an equal probability of being selected, the fact that wage rates are different will not bias the estimate.

USPS/DMA-T1-7. Please refer to DMA-T-1, page 17. Is the principle "that cost (within a CAG and craft) for an activity is directly proportional to the number of tallies for that activity" a "basic underpinning of the... IOCS sampling system" or an assumption of the tally cost weighting procedure? Please provide a detailed justification of your response.

USPS/DMA-T1-7 Response:

As I stated in my direct testimony, the principal "that cost is proportional (within a CAG and craft) for an activity is directly proportional to the number of tallies for that activity" is a "basic underpinning of the ...IOCS sampling system". Given how IOCS tally weight costs are computed (see USPS/DMA-T1-6(a)), it is true by definition rather than assumption.

USPS/DMA-T1-8. Please refer to your testimony at page 27, line 25. You state that "in my system, a dollar of cost is always a dollar of cost."

- (a) Please confirm that by this, you mean that you propose not to reweight IOCS tally dollar values in response to any of the issues raised by witness Degen at Tr. 17/8134-8139, including the within-craft wage dispersion issue. If you do not confirm, please explain what your statement means.
- (b) Please confirm that your "dollar of cost", like witness Degen's, is an allocation of cost to tallies which is based on assumptions not integral to the sampling system. If you [do] not confirm, please explain fully your understanding of the IOCS tally cost weights.

USPS/DMA-T1-8 Response:

- (a) Not confirmed. Please recall that I recommend that the Commission use the method it approved in R94-1. In this method, MODS pool costs play no role so there is no reason to reweight, since reweighting in Degen's method only occurs to make IOCS tally cost equal to MODS pool costs. If the Commission decides to accept any part of witness Degen's proposals, which I believe would be a serious mistake, I have suggested that they fix several of his most egregious flaws. Among these is reweighting. See DMA-T-1 at 27.
- (b) Not confirmed. The IOCS tally cost weight is by definition the ratio of the cost associated with a craft/IOCS CAG stratum combination to the number of tallies in the craft/IOCS CAG stratum combination.

USPS/DMA-T1-9. Please refer to DMA-T-1, page 12, in which you describe the process whereby "volume-variable MODS pool cost" is computed.

- (a) For MODS 1&2 cost pools, is the tally reweighting step necessary to produce "volume-variable MODS pool cost"? Please explain fully.
- (b) In witness Degen's proposed methodology, can the "volume-variable MODS pool cost" be derived without the use of IOCS data form MODS 1&2 cost pools? Please explain fully.

USPS/DMA-T1-9 Response:

- (a) No. The tally reweighting step is not necessary to produce volume-variable MODS pool costs. Rather, the reweighting of IOCS tally costs is a necessary consequence of the process used to produce volume-variable MODS pool costs.
- (b) Yes. The volume variable MODS pool cost, however, cannot be distributed without the use of IOCS tallies.

USPS/DMA-T1-10. Please refer to DMA-T-1, page 17, especially footnote 24. Is a simple but false assumption to be preferred over a complex but correct assumption? Please explain.

USPS/DMA-T1-10 Response:

Correct complex assumptions are preferred over simple false ones. Determining whether assumptions are correct or false, however, is important. As witness Shew described in his testimony, the best way to determine whether an assumption is false or correct is to gather data and statistically test its validity. Witness Degen admitted that he did not statistically test the validity or correctness of the assumptions he made when distributing mail processing costs. (See Tr. 12/6666-66). In the absence of information on whether a set of complicated assumptions is correct, I have recommended using simple assumptions instead of complicated ones.

USPS/DMA-T1-11 - Please refer to programs DMA_mods.sas, DMA_bmcs.sas, and DMA_nmod.sas, DMA-LR-1.

- (a) Please confirm that the mixed-mail distribution method implemented by this program ignores all information on the characteristics of mixed-mail recorded in IOCS other than the office group. If you do not confirm, please describe what the programs do.
- (b) Is the mixed mail distribution method you propose designed primarily to maximize the number of distributing tallies, and therefore minimize the variance of the distributed costs? Please explain.
- (c) In designing the mixed-mail distribution method you propose, did you consider the tradeoff between bias and variance? If so, please explain how your proposed distribution method addresses this issue. If not, why not?
- (d) If the mixed-mail characteristics recorded in IOCS (activity code, item type, etc.) contain information that the subclass distribution of certain types of mixed-mail differs from that of direct mail, under what conditions will your distribution method result in an unbiased distribution of mixed-mail cost? Please explain fully.

USPS/DMA-T1-11 Response:

- (a) Confirmed that the program does not use any IOCS data other than office group to distribute mixed mail costs.
- (b) No. As I stated in my testimony, I recommend that the Commission use the IOCS/LIOCATT distribution procedure which, among other attributes, uses distributing sets with many more tallies than witness Degen's method. The SAS programs to which you refer are a second best, and much worse, method for distributing mixed mail and not handling costs to subclass. This method was designed to solve three major problems I have with the Postal Service-proposed distribution method: (1) data thinness in distributing sets; (2) distribution of mixed mail costs by item type and cost pool and distribution of not handling mail costs within cost pool; and (3) reweighting of tally dollars. The IOCS/LIOCATT procedure also solves these problems.
- (c) Yes. A good distribution method will minimize bias and variance subject to a budget constraint. As compared to witness Degen's method, there was no tradeoff. I believe that my method is less biased than that proposed by witness Degen. As I stated in my testimony, witness Degen's distribution method uses distributing sets that are fraught with sampling error. Also, his distribution methods for not handling

costs are biased because Postal Service managers sometimes assign excess labor to allied operations where productivity cannot be calculated. This results in high not handling costs at allied operations. Witness Degen's method then unfairly assigns these high not handling costs to classes of mail that receive a large percentage of the handlings in allied operations. Because not handling costs comprise more than 40 percent of mail processing costs, this bias has a significant effect on the distribution of mail processing costs to subclass. The mixed mail and not handling mail distribution methods presented in my testimony correct these problems, therefore reducing bias and variance. Please note that adopting my recommended method, the IOCS/LIOCATT procedure, for distributing mail processing costs also solves these problems.

(d) All methods for identifying the subclass composition of mixed and not handling tallies for which the IOCS data collector did not record subclass information will contain some bias. Therefore, the probability that the method presented in my testimony is unbiased is zero. However, the method proposed by witness Degen contains significantly greater bias, as described in subpart (c) above.

The reason that the probability is zero in my method is that IOCS does not contain any information regarding the subclass composition of mixed items and containers and the subclasses of mail that cause not handling mail costs. One can reduce bias by testing the assumptions underlying a mixed mail distribution method and using "more correct" assumptions. Witness Shew described some ways to test the assumptions underlying witness Degen's distribution method.

Because using proxies to determine subclass information introduces a great deal of uncertainty into any mail processing costing methodology, I think that the Postal Service should make every reasonable effort to record subclass composition for all mixed items and containers and analyze whether there is a link between not handling costs and subclass or whether they are caused by inefficiency.

USPS/DMA-T1-12. Consider the ratio of two random numbers which are positively correlated. Can the variance of the ratio be lower than that of the numerator and/or the denominator individually? Please explain.

USPS/DMA-T1-12 Response:

Strictly speaking, random *numbers* have neither nonzero variances nor nonzero covariances, since they are the individual realizations of random *variables*, not the variates themselves. That is, suppose X and Y are random variables with joint probability density function $f(x,y)$ where f is a scalar function such that $f(x,y) \geq 0$ and $\int_{-\infty}^{\infty} \int_{-\infty}^{\infty} f(x,y) dy dx = 1$. While the expectations, variances, and covariances of X and Y are given by:

$$E(X) = \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} x \cdot f(x,y) dy dx$$

$$E(Y) = \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} y \cdot f(x,y) dy dx$$

$$V(X) = E[X - E(X)]^2,$$

$$V(Y) = E[Y - E(Y)]^2, \text{ and}$$

$$C(X,Y) = E\{[X - E(X)][Y - E(Y)]\},$$

respectively, the variances and covariances of $X=x$ and $Y=y$, where x and y are specific numeric values, are uniformly zero because they are numbers and therefore fixed. Obviously, the variance of x/y would also equal zero (assuming $y \neq 0$).

From the context of your question, however, I assume you meant to ask whether the variance of the ratio of two random *variables* which are positively correlated can be lower than that of the numerator and/or the denominator individually. The answer to that question is yes, it is possible for the variance of the ratio to be smaller than that of either of its components. Consider the simple three-point distribution, where (X,Y) is a discrete, jointly distributed pair with $f(x,y) = 1/3$ at each of three mass points, namely $(-1,-1)$, $(2,2)$, and $(3,3)$, and $f(x,y) = 0$ everywhere else. Now define $Z = X/Y$. Clearly, X and Y have a correlation of unity and positive variances, yet the variance of Z is zero.

On the other hand, possibility does not imply necessity: if X and Y are instead joint standard normal, then Z would be a standard Cauchy, which has no defined expectation but an infinite variance.

USPS/DMA-T1-13.

- (a) Are the coefficients of variation discussed at pages 20-23 of your testimony derived from the data provided by witness Degen in USPS-LR-H-305? If not, please provide a detailed description of the methods and assumptions you used to produce the coefficients of variation.
- (b) If you confirm in part a, have you applied any mathematical transformations to the data in USPS-LR-H-305? If so, please describe in detail any such transformations.

USPS/DMA-T1-13 Response:

(a) Yes.

(b) No.

USPS/DMA-T1-14. Please refer to your testimony at pages 20-23.

- (a) When you state that "over three percent of the tally cost [for empty and uncounted items] is distributed on the basis of one tally" (page 20, lines 22-23), do you mean that between 96 and 97 percent of empty and uncounted item cost is distributed using more than one tally? What fraction of total mail processing costs does this represent? Please also provide your result and any intermediate calculations in electronic spreadsheet format.
- (b) When you state that "nine percent of the distributing sets for identified mixed containers contain only one tally" (page 22, lines 2-3), what fraction of identified mixed container cost does this represent? What fraction of total mail processing cost does this represent? Please also provide your result and any intermediate calculations in electronic spreadsheet format.
- (c) What fraction of unidentified/empty container cost is distributed using one tally? What fraction of total mail processing cost does this represent? Please also provide your result and any intermediate calculations in electronic spreadsheet format.

USPS/DMA-T1-14 Response:

- (a) Yes. This represents approximately 0.1 percent of total mail processing costs. The requested spreadsheet will be filed as DMA-LR-3, spreadsheet USPS14.xls.
- (b) This represents approximately 0.9 percent of identified mixed containers costs and 0.04 percent of total mail processing costs. The requested spreadsheet will be filed as DMA-LR-3, spreadsheet USPS14.xls.
- (c) This represents 1.3 percent of unidentified and empty container costs and 0.05 percent of total mail processing costs. The requested spreadsheet will be filed as DMA-LR-3, spreadsheet USPS14.xls.

USPS/DMA-T1-15. Please refer to your testimony at pages 19-20, and Attachment 1 to this interrogatory.

- (a) Is it your testimony that the observations of letters being handled in flats operations, and so on, are the result of "misclocking"? If your answer is negative, please explain fully.
- (b) Please confirm that the table in Attachment 1 provides a breakdown of the tally count data in spreadsheet DMA17.xls (USPS-LR-H-305) by the activity the employee is observed performing, as recorded in IOCS question 19.
- (c) Please confirm that the table in Attachment 1 indicates that there are observations of letters being handled in flat operations, and so on, based on the employee's sampled (as opposed to clocked in) activity.
- (d) Please confirm that the observations of letters being handled at flat cases, reported in Attachment 1, are not the result of "misclocking."
- (e) If you do not confirm part (d), please explain your theory of how "misclocking" affects the employee's sampled activity. Please also explain, as necessary, whether your theory is simpler than alternate explanations for the data (e.g., that there are some letters in the flats mailstream since the dimensions of pieces are not individually measured when the letter and flat mailstreams are separated).

USPS/DMA-T1-15 Response:

- (a) No. First, I believe that letters are sometimes handled in flat operations. For example, letters are sometimes cased with flats in flat cases. My testimony actually stated: "Because of misclocking, there are direct tallies and hence distributing sets with, for example, flats and parcels in letter operations and parcels in flat operations." (DMA-T-1 at 19-20). I believe that misclocking can result in certain anomalous observations, such as flat tallies in letter operations.

Your interrogatory seems to suggest that if there are reasonable explanations for the presence of flats and parcels at letter operations and parcels at flat operations, then the amount of misclocking would necessarily be small. I do not agree. Misclocking does not necessarily yield anomalous shape information. First,

as I stated in my testimony, a recent Inspection Service report suggested that misclocking is most prevalent for employees clocked into allied operations where all shapes of mail are handled, but where the employee is working in another operation. Second, misclocking can occur within flat operations or letter operations. An analysis of shape information can not identify, for example, how much time employees spend working on flat sorting machines while clocked into the manual flat sorting operation. In either event, misclocking will produce flawed distribution keys.

(b) I can only confirm that the numbers in the Total row are consistent with the numbers in the Total row of spreadsheet DMA17.xls.

(c) Confirmed.

(d) Confirmed.

(e) Not applicable.

USPS/DMA-T1-16. Please refer to your testimony at page 20 and to Tr. 17/8143-8144. Please confirm that you have not calculated the variance of witness Degen's distribution key entries (the ratio of IOCS costs for a particular subclass in a distribution key to total IOCS costs for the distribution key) or of distributed volume variable costs. If you do not confirm, please provide complete results of your analysis, along with complete documentation of statistical formulas and assumptions.

USPS/DMA-T1-16 Response:

Confirmed.

USPS/DMA-T1-17. Please refer to your testimony at pages [sic] 25.

- (a) Is it your testimony that "not handling costs" are not causally related to mail handlings in the same cost pool? If not, please explain fully.
- (b) Is it your testimony that witness Degen's not-handling distribution is incorrect primarily because you believe that "not handling costs" are not causally related to mail handlings in the same cost pool? If not, please explain fully.
- (c) Suppose it is correct to assume that "not handling costs" are causally related to mail handlings in the same cost pool. Would it then be appropriate to distribute the "not handling costs" within the same cost pool? Please explain fully.

USPS/DMA-T1-17 Response:

(a) As I state on page 25 of my direct testimony ". . . Given that the Postal Service has yet to develop a fully satisfactory explanation of why not-handling cost are so large and why they differ so dramatically across operations, there is insufficient proof to support the assumption that they are caused by activities within individual cost pools." Furthermore, as I state on page 26 of my testimony, ". . . An alternative, and equally plausible, hypothesis of why not-handling mail costs are higher in some operations than in others is that the Postal Service assigns excess labor to specific operations, for example, where productivity is not measured or where there is little marketplace competition of the mail being handled (or not handled) in the operation . . . In this case, a less speculative distribution method would distribute not-handling mail costs across all cost pools as was done in R94-1 . . ."

(b) Although witness Degen has asserted that not-handling costs within a cost pool are caused by the handling costs, he has no evidence to support this assumption. Moreover, the distribution keys he uses to distribute the costs within pools are thin

and prone to clocking error. For all these reasons, I object to his within-pool distributions.

(c) It is never correct to assume the truth of propositions that can be tested when the costs at issue are as large as they are for not handling costs. With that qualification, if not handling costs were causally related to mail handlings in the same cost pool, and the distribution keys consisted of a sufficient number of tallies, then it would be appropriate to distribute these costs within pools, using the appropriate distribution key.

USPS/DMA-T1-18. Please refer to your testimony at page 25.

- (a) Please provide the quantitative analysis of variability and/or cost causality, including all statistical tests that demonstrate the causal relationship between your cost driver(s) and "not handling costs," upon which your "not handling cost" distribution is based.
- (b) If your answer to part (a) indicates that you have performed no quantitative analysis of variability or cost causality, please confirm that your proposed "not handling cost" distribution is based on untested assumptions regarding patterns of cost causality.
- (c) If your answer to part (a) indicates that you have performed no quantitative analysis of variability or cost causality, please confirm that your own proposed "not handling cost" distribution is "unfounded" by the standards you apply to witness Degen's methodology. If you do not confirm, please explain fully.

USPS/DMA-T1-18 Response:

- (a) Like the Postal Service, I did not perform quantitative analysis of variability for the relationship of not handling costs to cost drivers. This analysis could be done with sufficient time (two or three years), unlimited access to Postal facilities and data, and a large budget. Unlike the Postal Service, however, I examined both economic theory and performed quantitative analysis in deciding how to distribute not handling costs. My review of theory and analysis of the data showing the inefficiency and low levels of productivity of the Postal Service indicates that there is excess mail processing labor. Moreover, the data further shows that break time and time spent clocking in and out are very unevenly distributed across operations; this indicates that excess labor is most likely placed in operations where productivity is not measured and is not necessarily caused by the mail handled in that operation. Finally, the Postal Service has not analyzed the causes of not handling costs. For these reasons, I believe that the distribution of not handling costs within cost pools is unfounded and the better method is to distribute such costs across cost pools.

Economic theory indicates that cost-of-service providers are almost always inefficient. The Postal Service, itself, realized this in its Five Year Strategic Plan FY 1998-2002, at 14: "The existing Postal Service ratemaking process is a form of cost-of-service regulation. Over the last 25 years, this regulatory framework has been characterized as stifling innovation, promoting inefficiency, and shifting the focus of management away from the customer." Economic theory also tells us that monopolists are also almost always inefficient. Thus, given that the Postal Service is a cost-of-service monopolist, theory led me to believe strongly that it is extremely likely that the Postal Service is inefficient.

Having looked at theory, I next examined more quantitative measures. The two largest components of not-handling costs are break time and time spent clocking in and out of operations. Increasing break time and time spent clocking in and out of operations is a manifestation of declining productivity. As labor productivity has declined, personnel break time for clerks and mailhandlers has increased - from 8.6 percent of the workday in 1980 (Op. R90-1, App. J, at 4) to 13.83 percent in FY 1996 according to data furnished by the Postal Service. (Tr. 12/6205). This means that the average clerk or mailhandler now spends 1 hour and six minutes out of each 8 hour working day on breaks, up from 41 minutes a day in 1980. Furthermore, the same data show that the typical clerk or mailhandler now spends an average of 1 hour and 55 minutes in overhead activities (FY 1996 Cost Segments & Components), up from 1 hour and 19 minutes in 1980 (Op. R94-1, at III-9, Table III-1).

Productivity is the ratio of outputs to inputs. Increasing productivity can result

from learning, from adoption of new technologies, or from better management. Productivity increases have been low in the Postal Service. Witness Tayman provided total factor productivity indices for the United States Postal Service since 1971 in response to DMA/USPS-T9-28 (Tr. 9/4441-42). Total factor productivity takes account of changes in both capital and labor inputs. With an index of 1.00 in 1972, total factor productivity in the Postal Service increased to 1.0838 by 1996, or about one third of a percent annually. In contrast, multifactor productivity for the manufacturing segment of the economy increased by 20.9 percent, or nearly one percent per year, from 1972 to 1993, the last year for which the Bureau of Labor Statistics has released their estimates. Further, the Total Factor Productivity of the Postal Service has actually declined in each of the last three years. In contrast, witness Degen confirmed on oral cross examination that productivity increases in the railroad industry, a service industry, averaged 5 percent a year from 1991 to 1996. (Tr. 12/6648-49). Table 1, below, compares the productivity of the Postal Service and the manufacturing sector of the U.S. economy.

Labor productivity (output per labor hour) for the Postal Service has also been less than impressive. Witness Tayman provided labor productivity in response to DMA/USPS-T9-34 (Tr. 9/4452). While private sector manufacturing productivity increased by 83 percent from 1972 to 1996, Postal Service labor productivity has increased by only 20 percent over the same period.

Table 1. USPS and Private Sector Manufacturing Productivity Indices

Year	Total Factor/Multifactor Productivity		Labor Productivity	
	USPS	Manufacturing (1972=1)	USPS	Manufacturing ² (1972=1)
1971	.9883	.9626	.9918	.9639
1972	1.0000	1.0000	1.0000	1.0000
1973	1.0420	1.0257	1.0441	1.0279
1974	1.0230	.9778	1.0230	1.0394
1975	1.0141	.9544	1.0188	1.0722
1976	1.0092	.9907	1.0152	1.1149
1977	1.0299	1.0105	1.0453	1.1527
1978	1.0658	1.0269	1.0770	1.1658
1979	1.0440	1.0234	1.0557	1.1593
1980	1.0493	1.0093	1.0683	1.1658
1981	1.0557	1.0234	1.0640	1.1806
1982	1.0414	1.0374	1.0580	1.2430
1983	1.0355	1.0643	1.0623	1.2874
1984	1.0384	1.0981	1.0658	1.3268
1985	1.0369	1.1133	1.0691	1.3760
1986	1.0587	1.1343	1.0899	1.4384
1987	1.0630	1.1682	1.0949	1.4778
1988	1.0666	1.1752	1.1005	1.5008
1989	1.0600	1.1717	1.1016	1.5205
1990	1.0916	1.1659	1.1387	1.5484
1991	1.0736	1.1647	1.1373	1.5829
1992	1.0792	1.1963	1.1504	1.6420
1993	1.1200	1.2091	1.2033	1.6782
1994	1.1169	N/A	1.2124	1.7192
1995	1.0995	N/A	1.2014	1.7750
1996	1.0838	N/A	1.1985	1.8342

¹ Manufacturing Multifactor Productivity figures from Bureau of Labor Statistics (BLS) series MPU3000703. This index can be obtained from the BLS World Wide Web site at "www.bls.gov."

² Manufacturing Labor Productivity figures from Bureau of Labor Statistics (BLS) series PRS30006093. This index can be obtained from the BLS World Wide Web site at "www.bls.gov."

Further supporting the Postal Service's capacity to increase productivity is a bench marking study performed for the Postal Service by Christiansen Associates entitled "Performance Analysis of Processing and Distribution Facilities: Sources of TFP Improvement" (USPS-LR-H-275). The study states that "The range of estimated savings, \$1.9 to \$2.6 billion . . . represents approximately 20-25% of mail processing and distribution costs" (USPS-LR-H-275 at 21). As witness Degen states, "The basic conclusion of the report was that by learning from the best facilities there was some potential for productivity improvement." (Tr. 12/6656).

Having thus examined general data on productivity and efficiency, I next explored indications that productivity has changed differentially at different operations implying that some operations are less efficient than others. If this were true it would support the hypothesis that not-handling costs are not causally related to handling costs by cost pools because it would indicate the excess labor constituting not-handling costs are arbitrarily placed in certain operations.

I analyzed the same MODS data on labor hours and total piece handlings that witness Bradley used to calculate volume variability to calculate productivity by MODS operation over the period of time from 1988 to 1996. Table 2 shows the results of the calculations using witness Bradley's "scrubbed" data, his preferred method for calculating productivity (see response to USPS/DMA-T14-16 (Tr. 11/5263-64)), and the cumulative percentage change in productivity over the time period. As the table shows, although productivity has declined in many operations over this period of time, the changes are very uneven. Flat sorting machine productivity has

dropped by about 18 percent while OCR productivity has declined by about 38 percent. Manual flat sorting productivity has declined only by about 6 percent.

As one might expect from economic theory, notwithstanding its general decline, productivity has increased dramatically for parcels, where the Postal Service faces competition from the private sector. Thus, manual parcel sorting productivity has increased by about 45 percent over this time period and the productivity for mechanical parcel sorting has increased by about 60 percent. This further supports my testimony that not handling costs are arbitrarily placed in cost pools: with parcels, the Postal Service must be efficient or lose its business, so excess labor is not assigned to these operations, keeping their productivity high.

Table 2. Productivity by MODS Operation and Cumulative Percentage Change in Productivity (000s of Pieces Handled per Hour)

Operation	1988	1989	1990	1991	1992	1993	1994	1995	1996	Change
Optical Character Reader	7.219	6.486	6.332	6.160	5.537	5.030	4.968	4.782	4.503	(38%)
Barcode Sorter	7.143	7.167	7.384	7.476	7.336	6.894	6.946	7.093	7.289	2%
Letter Sorting Machine	1.562	1.548	1.505	1.475	1.415	1.321	1.284	1.263	1.238	(21%)
Manual Letter Sorting	.610	.583	.567	.592	.593	.553	.565	.560	.547	(10%)
Manual Flat Sorting	.503	.489	.460	.485	.493	.469	.480	.473	.473	(6%)
Flat Sorting Machine	.893	.865	.846	.804	.770	.757	.743	.739	.734	(18%)
Manual Parcel Sorting	.191	.192	.202	.222	.249	.255	.259	.258	.277	45%
Mechanical Parcel Sorting	.112	.095	.120	.111	.121	.123	.125	.158	.179	60%
Small Parcel and Bundle Sorter (Non-Priority) ¹	N/A	.198	.217	.234	.248	.251	.238	.257	.272	37%
Manual Priority Mail Sorting	.241	.238	.233	.208	.216	.204	.200	.210	.225	(6%)
Small Parcel and Bundle Sorter	N/A	.259	.289	.325	.322	.307	.273	.270	.272	5%
Facer/Canceler	3.110	3.111	3.145	3.036	3.164	3.080	3.261	3.352	3.393	9%

¹ No hours or piece handling data are available for these operations in FY 1988; the cumulative percentage change in productivity is calculated using FY 1989 as the base year for these operations.

The Inspection Service also found evidence of inefficiency in operations where productivity is not measured. For example, in a FY 1997 National Coordination Audit of Allied Workhours (LR-H-236), the Inspection Service found, "Allied Workhours in P&DCs were loosely managed and inadequately controlled. The primary cause was management's inconsistency in monitoring these workhours We determined the Postal Service could have realized a 12.8 percent reduction in actual workhours expended. In Fiscal Year (FY) 1996, unrecovered opening unit cost reductions could have amounted to nearly \$141 million, if higher locally demonstrated productivities were achieved." (LR-H-236, Executive Summary, at 2).

In sum, economic theory and a quantitative analysis of Postal Service mail processing productivity shows that not handling costs consist of non-productive excess labor which should be distributed across cost pools.

(b) Not confirmed. Given the quantitative evidence of inefficiency and misallocation of not handling costs (see subpart (a) above), my distribution of mail processing costs (including distribution of not handling costs across cost pools) is more consistent with mail processing data. Please recall that I recommend that the Commission use the method it approved in R94-1. Under this method, I am proposing that not handling costs be distributed in exactly the same way that the Postal Service distributed them in that case. If the Commission decides to accept any part of witness Degen's proposal, which I believe would be a serious mistake, I have suggested that they correct several of his most egregious flaws. Among these

14

is his distribution of not handling costs within MODS cost pools.

(c) As I explain in my responses to subparts (a) and (b) above, I do not believe my approach is unfounded.

USPS/DMA-T1-19. Please refer to your response to USPS/DMA-T-1-2b. You state that "not all programs which have increases in clerks, mailhandlers or city carriers will necessarily have [corresponding] increases in supervisors" and that "because managers apparently never considered adjustments in supervisors' costs, it is only reasonable to decrease supervisors' costs proportional to the decrease in the related craft workers' costs".

- (a) Your use of the word "apparently" leads the reader to believe that you have speculated that Postal Service program managers did not consider adjustments in supervisor costs when they estimated the impact of cost reduction programs. Please confirm that you do not know for a fact that Postal Service program managers did not consider adjustments in supervisor costs when they estimated the impact of cost reduction programs but rather you have made an assumption to that effect. If you do not confirm please explain how you know this for a fact.
- (b) Please explain why you feel that cost reductions in "craft workers' costs" should result in proportional supervisor savings but other programs increases in "craft workers' costs" do not always result in proportional supervisor cost increases.

USPS/DMA-T1-19 Response:

- (a) I do not know for a fact that Postal Service program managers did not consider adjustments in supervisor costs when they estimated the impact of cost reduction programs. I do know that witness Patelunas did testify that the program managers were not instructed to determine whether reductions in Clerk and Mailhandler and City Carrier workhours would reduce the amount of supervisor and technician workhours needed to manage the craft workers. (See Tr. 137211). I also know that of 12 cost increases for Clerk or Mailhandlers or Carriers in Other Programs in FY 1997, 4 (or 1/3) were accompanied by increases in Supervisors costs; moreover, of the 28 increases in Clerks or Mailhandlers or Carriers in Other Programs in FY 1998, 4 (or 1/7) were accompanied by increases in Supervisors costs. Thus, for the two years combined, there were 40 increases in craft costs of which 8 (or 1/5) were

accompanied by increases in supervisors' costs.

Given that there were increases to supervisors' costs in FY97 and FY98, it is very unlikely that there would be no decreases to supervisors' costs when the costs of the supervised craft decreased. Assuming that cost reductions for supervisors when there are cost reductions for the supervised craft should be as likely as cost increases for supervisors when there are cost increases for the supervised craft, the probability of there being no reductions for supervisors' costs in the 41 cost reduction programs for FYs 1997 and 1998 is .01 percent.¹ Thus, although I have made an assumption, it appears to be consistent with the facts.

(b) As I stated, "[n]ot all programs which have increases in clerks, mailhandlers or city carriers [costs] will necessarily have corresponding increases in supervisors [costs]." However, there was an aggregate increase in supervisors' costs based on an aggregate increase in the supervised craft costs in Other Programs for FYs 1997 and 1998. I don't believe that supervisors' costs for a particular program necessarily will change proportionately (either up or down) when there is a corresponding change in the costs of the supervised craft in either Other Programs or cost reduction programs. However, I believe that, in the aggregate, it is highly unlikely that, while aggregate increases in craft costs are accompanied by aggregate increases in supervisors' costs, aggregate decreases in craft costs are not accompanied by

¹ Calculated by raising the ratio 4/5 (the probability of not having a supervisor cost decrease when there is a cost decrease for the supervised component from a particular cost reduction program) to the forty first power.

aggregate decreases in supervisors' costs. In fact, the ratio of costs for supervisors of mail processing clerks and mailhandlers and carriers to the crafts supervised in the rollforward from FY 1997 to TY 1998 was .070 before Other Programs and .070 after Other Programs. The ratio of the cost increases within Other Programs between supervisors and the supervised crafts was .061. While this is slightly below the overall supervisor/craft cost ratio, the essential point is that, in the aggregate, there were increases in supervisors' costs from Other Programs, but no supervisor cost decreases when the costs of the supervised craft decreased.

USPS/DMA-T1-20. Please refer to your response to USPS/DMA-T1-3b. You were asked to explain how you determined that program managers "simply did not realize that they were supposed to adjust supervisors' and technicians' costs downward as they did for the costs for mail processing clerks and mailhandlers and city carriers due to the cost reduction programs." You responded that your statement was based [sic] witness Patelunas' testimony that program managers who estimated savings from personnel-related cost reduction programs for Clerks and Mailhandlers and for City Carriers were not instructed to determine whether these savings would reduce the number of supervisor hours (Tr. 13/7211).

- (a) Are you aware of any testimony indicating that program managers were instructed not to determine the impact of cost reduction programs on supervisor costs? If your answer is other than an unqualified no, please provide such testimony and its source.
- (b) Please confirm that witness Patelunas testified in his response to DMA/USPS-T15-1b. that "the program managers who estimated the savings from personnel-related cost reduction programs made their estimates based on their expertise. The program managers have first hand knowledge of the particular programs and operations; thus, they are the best judges of estimating how the programs will impact operations. The program managers use their own understanding of the relationships between craft employees and supervisors when they determined these cost reduction estimates". If you do not confirm please explain why?
- (c) Please confirm that witness Patelunas testified in his response to DMA/USPS-T15-5ei. that "the program managers arrived at their estimates using their knowledge and experience in operations. It would not be realistic to conclude from your arithmetic that program managers did not analyze the effect on supervisor and technician workyears." If you do not confirm please explain why?
- (d) Assume that program managers were not instructed specifically what categories of employees to consider in making their estimates but rather were simply asked to estimate the impact of the program whatever it might be. Under such a scenario is it possible that program managers considered the impact of the program on supervisors and concluded that no savings should be included? If your answer is other than yes, please explain why this could not be possible.
- (e) In your response to USPS/DMA-T1-3b. you state "I think that program managers primarily consider direct craft labor costs because direct labor costs are ten times higher than supervisors' costs. I doubt that program managers spend much time contemplating the relationship between craft employees and supervisors. . . ." [sic] I think program managers ignored this relationship when estimating cost savings. . . . the fact that no program manager estimated supervisor cost savings when the costs for the component supervised decreased suggests that

witness Patelunas is incorrect." Does your use of words such as "I think," "I doubt," and "suggests," mean that these are simply your opinions and not facts that you can prove? If your answer is other than yes, explain why you have not been more emphatic.

USPS/DMA-T1-20 Response:

- (a) No, but also see my response to USPS/DMA-T1-19.

- (b) Confirmed.

- (c) Confirmed.

- (d) It is possible, but it is not very likely. See my response to USPS/DMA-T1-19.

- (e) These are my opinions supported by the facts I have explained in my testimony, in my previous interrogatory responses, and in my response to USPS/DMA-T1-19 above. If I were flipping a coin and heads came up 41 times in a row, others might believe that the probability of heads on the next toss was .5. I would believe that the coin was not fair. Overall 1/5 of the 40 increases in costs for Clerks and Mailhandlers and Carriers were associated with cost increases for supervisors, while none of the 41 cost reduction programs were associated with cost decreases for supervisors.

7

USPS/DMA-T1-21. Please refer to your response to USPS/DMA-T1-4b. where you state "confirmed, if the process described in subpart (a) actually takes place." Do you know for a fact that the process described in subpart (a) did not take place? If your answer is other than no, please provide the factual basis for you [sic] assertion.

USPS/DMA-T1-21 Response:

I do not know for a fact that the process described did not take place. I also do not know for a fact that it did take place.

- 2 -

USPS/DMA-T1-22. Please refer to your response to USPS/DMA-T1-6 part c. You state that "IOCS . . . was designed to find the cost of mail processing by class and subclass." Please also refer to page 1 of Exhibit USPS-47A (USPS-ST-47).

- a. Please confirm that "[t]he In-Office Cost System uses a probability sample of work time to estimate the costs for time spent on various activities, including time spent processing each category of mail and several special services." If you do not confirm, please explain fully.
- b. Please confirm that the "various activities" for clerks and mailhandlers include, but are not limited to, "time spent processing each category of mail and several special services." If you do not confirm, please explain fully.

USPS/DMA-T1-22 Response:

- a. I can confirm only that page 1 of Exhibit USPS-47A contains the cited quote. However, the cited exhibit contains no definition of "activities." When I worked as a cost analyst for the Postal Service, the director of the Revenue and Cost Analysis Division of the Postal Service was adamant that IOCS could not be used to determine the cost of discrete mail processing operations because of its sample design and the limited number of IOCS tallies. The sampling framework of IOCS has not changed materially since then, although I understand that recently the Postal Service has reduced substantially the number of IOCS tallies.
- b. I can neither confirm nor deny. Exhibit USPS-47A does not indicate whether IOCS may be used to estimate the costs for mail processing "activities" or operations in addition to estimating the costs for "time spent processing each category of mail and several special services." However, also see my response to subpart a. above.

- 3 -

USPS/DMA-T1-23. Please refer to your response to USPS/DMA-T1-11, part a. You state that your programs do not use any IOCS data other than office group to distribute mixed mail costs.

- a. Please confirm that your programs assign costs for mixed class-specific activity codes (activity codes 5300-5461) to the appropriate subclass(es) of mail. If you do not confirm, please explain fully.
- b. Please refer to line 1111 of the SAS log at page 29 of DMA-LR-2. Did you intend to exclude activity code 5461 from the direct tally set? If so, please explain fully. If not, please provide a version of Exhibit DMA 3 in which activity code 5461 is included in the direct tally set.

USPS/DMA-T1-23 Response:

- a. It would be more accurate to say that my programs, like witness Degen's, reassign certain direct costs within the distributing sets before distributing mixed mail costs. The question appears to be making a semantic, rather than a substantive, point based on a misunderstanding of the term "mixed." Witness Degen considers IOCS tallies with the activity codes 5300-5461 to be part of the distributing sets: "[d]istributing sets consist of records with a mail or special service activity code (F262=1000-4950, 53XX-54XX, and 0010-0300 for specified situations) and distributed sets consist of those without." USPS-LR-H-146 at II-3. Thus, like my programs, witness Degen considers such records to be *direct*, rather than *mixed*, tallies despite the moniker assigned them by IOCS.

- 4 -

b. No. In performing my distribution, I merely reproduced a line of code that was filed with witness Degen's testimony as USPS-LR-H-218. Witness Degen's SAS log entitled "MOD1DIR," reads:

```
ELSE IF '1000' <=ACTV<= '4950' OR '5300' <=ACTV<= '5460'  
      THEN OUTPUT DIRECT;
```

I should have edited this log to read:

```
ELSE IF '1000' <=ACTV<= '4950' OR '5300' <=ACTV<= '5461'  
      THEN OUTPUT DIRECT;
```

Please note, however, that this change does not materially affect my cost distributions. I have attached a revised copy of Exhibit DMA-3 reflecting this change.

DMA-T-1

EXHIBIT DMA-3 (Revised 2/18/98)

DMA's Alternative Methodology and Witness Degen's Proposed Methodology Distributing Volume-Variable Mail Processing Costs by Subclass (\$000s)

Class	Subclass	DMA Alternative BY 96 Cost Distribution				Degen Total	Difference Total
		MODS	Non-MODS	BMC	Total		
		[1]	[2]	[3]	[4]	[5]	[6]
First Class	Letters & Parcels	3,854,655	783,002	4,806	4,642,463	4,651,746	-9,283
First Class	Presort Letters & Parcels	807,532	212,044	538	1,020,114	1,063,109	-42,995
First Class	Single Piece Cards	123,957	26,170	87	150,214	139,939	10,275
First Class	Presort Private Cards	30,909	7,707	0	38,616	36,425	2,191
Priority		256,368	57,074	1,588	315,031	477,897	-162,866
Express		40,555	10,853	17	51,424	84,169	-32,745
Mailgrams		110	0	0	110	74	36
Periodicals	Within County	9,438	5,058	68	14,564	15,161	-597
Periodicals	Regular	303,568	82,934	13,163	399,665	461,712	-62,047
Periodicals	Nonprofit	55,451	14,009	3,097	72,557	80,739	-8,182
Periodicals	Classroom	2,266	1,132	586	3,983	5,684	-1,701
Standard (A)	Single Piece Rate	52,148	11,376	12,175	75,699	78,662	-2,963
Standard (A)	ECR	137,715	68,017	15,225	220,957	266,254	-45,297
Standard (A)	Regular	1,035,527	290,569	140,491	1,466,586	1,545,319	-78,733
Standard (A)	Nonprofit ECR	17,844	5,309	1,357	24,510	28,948	-4,438
Standard (A)	Nonprofit Regular	278,678	58,339	19,998	357,015	367,512	-10,497
Standard (B)	Parcels - Zone Rate	39,636	14,378	71,863	125,876	159,880	-34,004
Standard (B)	Bound Printed Matter	21,269	10,655	35,196	67,120	74,506	-7,386
Standard (B)	Special Rate	16,694	7,525	45,917	70,136	68,491	1,645
Standard (B)	Library Rate	4,884	1,390	9,203	15,477	16,350	-873
USPS		54,904	14,424	3,479	72,807	77,658	-4,851
Free for Blind/Handicapped		5,923	744	2,105	8,772	10,100	-1,329
International		164,813	5,252	27,232	197,297	209,018	-11,721
Special Services	Registry	34,634	8,884	330	43,848	42,162	1,686
Special Services	Certified	8,776	15,837		24,613	18,473	6,140
Special Services	Insurance	304	609	29	942	771	171
Special Services	COD	1,091	1,782		2,873	1,815	1,058
Special Services	Special Delivery	300			300	243	57
Special Services	Money Orders				0		0
Special Services	Stamped Envelopes				0		0
Special Services	Special Handling	165	157		322	200	122
Special Services	Post Office Box				0		0
Special Services	Other	68,847	25,001	395	94,243	76,063	18,180
Total Volume-Variable		7,428,960	1,740,229	408,946	9,578,135	10,059,080	-480,945

[1] DMA-LR-2 at page 84 adjusted to reflect activity code 5461 in the direct tally set. See USPS/DMA-T-1-23.

[2] DMA-LR-2 at page 119.

[3] DMA-LR-2 at page 38.

[4] = [1] + [2] + [3].

[5] USPS-T-12, Table 5, page 23, Column "Total."

[6] = [4] - [5].

1 CHAIRMAN GLEIMAN: Does any participant have
2 additional written cross-examination for the witness?

3 [No response.]

4 CHAIRMAN GLEIMAN: If not, we will move on to oral
5 cross. The Postal Service is the only party that requested
6 cross-examination of Witness Buc. Does any other party wish
7 to cross-examine the witness?

8 [No response.]

9 CHAIRMAN GLEIMAN: If not, then Mr. Koetting.

10 MR. KOETTING: Thank you, Mr. Chairman.

11 CROSS-EXAMINATION

12 BY MR. KOETTING:

13 Q Good morning, Mr. Buc.

14 A Good morning.

15 Q I would like to start, please, by referring you to
16 your response to Postal Service Interrogatory No. 22.

17 A I have got it.

18 Q In our question to you, we cited to you a
19 statement from the In-Office Cost System's statistical
20 documentation that was filed in this case, which included a
21 statement that the In-Office Cost System uses a probability
22 sample of work time to estimate the costs for time spent on
23 various activities, including time spent processing each
24 category of mail and several special services.

25 You confirmed the quote, but, in your response,

1 you pointed out that the statement did not include a
2 definition of the term "activities", correct?

3 A That is correct.

4 Q I take it that you are very familiar with the uses
5 to which the IOCS has been put over the years?

6 A Moderately familiar. I am not sure anyone is
7 totally, very familiar with all of them.

8 Q I'll certainly accept that. What I am going to do
9 is list a variety of what I will call, for lack of a better
10 term, at least at present, cost categories. And I will ask
11 you for each, if you can confirm that in the past these cost
12 category amounts have been derived using tally proportions
13 from the IOCS. And this list, I might add, is not
14 inclusive.

15 So let me start, for example, with the cost
16 category of mail processing costs for clerks and mail
17 handlers. And, again, the question is, can you confirm that
18 the total amount of mail processing costs for clerks and
19 mail handlers has been derived using IOCS tally proportions?

20 A The total amount?

21 Q Yes. Of mail processing costs for clerks and mail
22 handlers.

23 A Yes.

24 Q And would that also be true for window service
25 costs?

1 A Yes.

2 Q And would that also be true for the in-office
3 costs for city carriers?

4 A Yes.

5 Q And the street time costs for city carriers?

6 A Yes.

7 Q Clerk and mail handler break time costs?

8 A Clerk and mail handler break time cost is an
9 allocation. So, IOCS, all by itself, will give you an
10 estimate. The issue is how accurate the estimate is, how
11 precise it is.

12 Q But the estimate is derived using IOCS tally
13 proportions applied to some total cost number that
14 ultimately comes from some accounting system, correct?

15 A Many cost estimates could be derived. The issue
16 is are they precise, are they statistically reliable.

17 Q Right. But my question now is focused exclusively
18 on -- they have traditionally been derived using IOCS tally
19 proportion?

20 A Yes.

21 Q Similarly, clerk and mail handler empty equipment
22 costs?

23 A Yes.

24 Q Clerk and mail handler platform costs?

25 A Yes.

1 Q Clerk and mail handler platform acceptance costs?

2 A Yes.

3 Q Okay. And go back to the original statement that
4 we were talking about in our question to you, and the term
5 activities. Would you agree that those kinds of things that
6 we have just gone through are probably likely examples of
7 what were considered, quote, "activities" by the authors of
8 the IOCS statistical documentation?

9 A I am not sure.

10 Q Can you think of anything else that they might
11 have been -- I mean what -- how would you then interpret
12 activities if -- do you have any other alternative
13 interpretation of activities?

14 A The alternative is that the writing might not have
15 been precise as one might have wished. On occasion, I
16 understand that imprecise writing slips into almost
17 everybody's writing, and I don't believe that when this was
18 written, people were thinking that the word 'activities' was
19 going to be litigated.

20 What I really think activities meant, though, was
21 the bigger units, the carrier in-^{office}~~house~~ time.

22 Q So, you are saying that possibly some of these
23 were and some of these were not?

24 A Were activities, or were --

25 Q Correct.

1 A In many ways, it is sheer speculation. I don't
2 know what they meant when they said activities. I am not
3 sure that if we found the people who wrote it, that they
4 would know what they meant any more by the word 'activities'.

5 Q Okay. Well, then let's continue to refer to the
6 examples that I went through as cost categories, unless
7 there is some other terminology you would prefer to apply to
8 these amounts that have, year after year, been derived using
9 IOCS tally proportions. Or is cost categories acceptable?

10 A I am not sure I understand the question. Could
11 you rephrase?

12 Q Sure. We went through a variety of things. Every
13 year, you can look at the LIOCATT that is filed with the
14 Commission as part of the periodic reporting rule, and you
15 can find an amount for each of the categories that we went
16 through. Total mail processing costs for clerks and mail
17 handlers, total cost for window service, the in-office costs
18 for city carriers, the street time costs of city carriers,
19 clerk and mail handler break time cost, clerk and mail
20 handler empty equipment related costs, clerk and mail
21 handler platform costs, clerk and mail handler platform
22 acceptance cost. Those numbers are all in there, correct?

23 A That's correct.

24 Q And they are derived, are they not, from IOCS
25 tally proportions?

1 A That is correct.

2 Q And I am just looking for what -- what term do you
3 want to use to describe that -- that list of things? I am
4 happy to use whatever you want to do. I am proposing cost
5 categories.

6 A Okay. Let's call them cost categories, that's
7 fine.

8 Q Would you agree that not all of those cost
9 categories involve handling mail?

10 A That's correct.

11 Q But in every instance the costs are derived, are
12 they not, based on responses recorded for various specific
13 IOCS questions?

14 A I believe so, yes.

15 Q And in fact most of this information for clerks
16 and mail handlers would be based on responses to subparts of
17 Question 18, correct?

18 A That's correct.

19 Q Are you suggesting in any way that the IOCS sample
20 design does not allow the costs associated with each of
21 these cost categories to be reliably estimated?

22 A I think that what I am suggesting is that as the
23 divisions get finer and finer, and you sample and you try to
24 distribute ~~at a~~ lower and lower cost, the sampling error
25 gets bigger and bigger, so as I stated in my response what

1 we were always taught when we were at the Postal Service was
2 that it works for the thing as a whole but it really doesn't
3 work very well for the individual parts.

4 Q Let me restate my question again. Are you saying
5 that these costs that have been derived historically have
6 not been derived with sufficient accuracy for ratemaking?

7 A I think they have been derived with sufficient
8 accuracy for ratemaking because in ratemaking you sometimes
9 do the best you can with what you have, and so I believe the
10 situation always was that the Postal Service was doing the
11 best it could with what it had.

12 *Q* But you would be much more willing to bet part of
13 your salary or a lunch or dinner was the number right for
14 bigger groups of things than is the number right for very
15 fine or more disaggregated groups of things?

16 *A* That is the only point.

17 Q Okay. Would you agree that the MODS codes
18 recorded by the IOCS data collector is also just another
19 response to a subpart in Question 18?

20 A I have to go look to make sure it is 18 -- subject
21 to check.

22 Q Fine, subject to check I think is adequate -- and
23 you talked about breaking these tally proportions -- these
24 tallies down in more and more fine ways, correct, in your
25 previous response. Isn't it true that with respect to the

1 cost pools created by Witness Degen using the MODS codes
2 reported in Question 18 there are many cases in which the
3 number of tallies in the MODS cost pool exceeds the number
4 of tallies in many of the CAG basic function cost pools
5 created by historical application of IOCS data?

6 A I'd have to check the two data sets. I will
7 accept that subject to check.

8 Q And would you agree compared with statements that
9 I could cite to you from the statistical documentation or
10 you could cite to me as something that somebody said a
11 number of years ago that the comparison of the number of
12 tallies in the respective cost pools would be a better
13 indication of whether the new cost pools might be stretching
14 the data to a greater or a lesser extent than the existing
15 methodology?

16 A Could you repeat that again? I'm sorry.

17 Q Sure. Obviously in our question we decided to use
18 something from the statistical documentation. In your
19 response you came back with your recollection of what
20 somebody said back when you were working for the Postal
21 Service in the 1970s, I believe.

22 My point is rather than sit here and try to debate
23 the merits of those things, where the rubber really meets
24 the road, so to speak, is you look at -- you compare the
25 number of tallies or maybe even specifically the variants

1 associated with these cost pools, and that really tells you
2 whether or not which one is pushing the data to a lesser or
3 greater extent. Would you agree with that?

4 A I would want to look at the number of tallies in
5 the individual cost pools for both to make that decision,
6 yes.

7 Q Let's move to a hypothetical, and just so you are
8 clear, we furnished your counsel with a cross-examination
9 exhibit, and I would like to try to do the hypothetical
10 without referring to that.

11 If it doesn't work out we might go back there, but
12 if you don't mind I would like to just forage ahead and see
13 if we can -- are you familiar with the cross-examination
14 exhibit?

15 A I am.

16 Q Okay. This won't use the exact same numbers from
17 that, but if you bear with me -- I think the
18 cross-examination exhibit is a little more complicated than
19 it needs to be.

20 If we can handle it more expeditiously I would
21 rather do that.

22 A I would be willing to try but I'll tell you that
23 it is real easy to get confused with numbers being thrown
24 around real quick, so I am willing to give it a try.

25 Q Okay. I appreciate that.

1 Let's assume that we have a mail processing system
2 in which there are only two operations and only one CAG and
3 there are two levels of clerks which perform those
4 operations, and one level of clerk always performs one
5 operation and the level of clerk always performs the other
6 operation.

7 Now by level of clerk I am talking about a wage
8 level, so that the clerks in one level earn a higher hourly
9 wage than the clerks at the other level.

10 Are you with me so far?

11 A I think I've got it.

12 Q Okay -- and we will call the two operations A and
13 B.

14 Let us now further suppose that there are only two
15 classes of mail and that each class gets processed in each
16 of the two operations in the same proportion and for
17 purposes of simplicity let's just say that the total time
18 spent processing each class -- that all the time spent
19 processing each class -- one-third of the time is in
20 Operation A and two-thirds in Operation B -- okay? -- and
21 given sufficient sampling therefore we would expect
22 one-third of the tallies for each subclass to be taken while
23 being worked in Operation A and two-thirds in Operation B,
24 correct?

25 A I think that's correct.

1 Q And so in total we have specified a hypothetical
2 in which one-third of the total labor hours will be in
3 Operation A and two-thirds of the total labor hours will be
4 in Operation B, correct?

5 A I think that is correct.

6 Q But because each hour is paid at a different wage
7 rate in the two operations, we also know, do we not, the
8 total labor cost will not be split between the two
9 operations in that same one-third and two-thirds
10 proportions, is that correct?

11 A That is also correct.

12 Q Okay. Now we want to engage in an exercise in
13 which we are going to split total labor costs between the
14 two subclasses.

15 A ^{Now}~~Not~~ it gets hard.

16 Q Okay. Given our hypothetical, doesn't the
17 arithmetic work out so that it does not matter whether we
18 use the weighted average wage across both operations to
19 associate with all tallies in both operations or whether we
20 use operation-specific wages to associate with each
21 operation separately and then sum the costs across
22 operations?

23 Either way the share of total cost allocated to
24 each subclass comes out the same, is that correct?

25 A At this point I would like to do it as a

1 take-home.

2 Q Okay --

3 MR. BERGMAN: At this point I just want to object.
4 That was a complicated question. Mr. Chairman, that was a
5 complex question and unclear.

6 It may be best at this point for clarification
7 purposes to submit written cross-examination, to put that in
8 the record and modify it with respect to the new numbers
9 that ^{the Postal Service is and} ~~you are~~ presenting, ^{that} ~~but~~ I think ~~it~~ may be best, easiest
10 for the witness to respond to it and for the Commission to
11 follow it.

12 MR. KOETTING: Let's just abandon that
13 hypothetical and move to the cross-examination exhibit,
14 which we served two days ago. You know, like I said, I
15 was --

16 CHAIRMAN GLEIMAN: I look forward to having you
17 distribute it.

18 MR. KOETTING: If I may, Mr. Chairman, I would
19 like to label this as USPS/DMA-T1-EX-1 and give two copies
20 to the reporter and the Commissioners and anyone else who
21 might be interested, and ask that they be transcribed into
22 the record.

23 CHAIRMAN GLEIMAN: I'll direct that the
24 cross-examination exhibit be transcribed into the record
25 once the reporter has his copies.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

[Cross-Examination Exhibit
USPS/DMA-T1-EX-1 was ~~received into~~
~~evidence and~~ transcribed into the
record.]

USPS/DMA -T1 - EX - 1

Cross-Examination Exhibit for Witness Buc (DMA-T-1)

Assume:

1. There are 2 operations, 'A' and 'B'
2. There are 2 mail classes, 'X' and 'Y'
3. Total costs in universe are 'C'
4. Operation 'A' represents 60% of time and 50% of costs in universe
5. IOCS-type time sampling system with a large number of tallies
6. All tallies are direct
7. Single sampling stratum with tally cost weighting per IOCS methods

Therefore, 60% of unweighted tallies and tally costs are associated with operation 'A'

Scenario 1:

Class 'X' accounts for 60% of time (and costs) in both operations

Cost distributed to class 'X' on the basis of tally costs:

$$\begin{aligned} C(X) &= (0.6)(0.6)C + (0.6)(0.4)C \\ &= 0.6C \end{aligned}$$

Actual costs of class 'X':

$$\begin{aligned} C(X) &= (0.6)(0.5)C + (0.6)(0.5)C \\ &= 0.6C \end{aligned}$$

Scenario 2:

Class 'X' accounts for 70% of time (and costs) in operation 'A', class 'X' accounts for 40% of time (and costs) in operation 'B'

Costs distributed to class 'X' on the basis of tally costs:

$$\begin{aligned} C(X) &= (0.7)(0.6)C + (0.4)(0.4)C \\ &= 0.42C + 0.16C \\ &= 0.58C \end{aligned}$$

Actual costs of class 'X':

$$\begin{aligned} C(X) &= (0.7)(0.5)C + (0.4)(0.5)C \\ &= 0.35C + 0.2C \\ &= 0.55C \end{aligned}$$

1 CHAIRMAN GLEIMAN: Fire away, Mr. Koetting.

2 MR. KOETTING: Thank you, Mr. Chairman.

3 BY MR. KOETTING:

4 Q Okay, Mr. Buc, as I indicated, forget about the
5 numbers that we were trying to do orally and we will
6 proceed, if you don't mind, with this cross-examination
7 exhibit as stated.

8 The assumptions here as stated on the
9 cross-examination exhibit -- again there are two operations,
10 A and B. There are two mail classes, X and Y. Total costs
11 in the universe are "C." Operation A represents 60 percent
12 of the time and 50 percent of the costs in the universe.

13 Do you understand that at least one potential
14 source of that type of variation between percentage of time
15 and percentage of cost would be different wage rates in the
16 two operations?

17 A I'm wondering how --

18 Q Right --

19 A -- what your explanation for Assumption 4 was, so
20 you are saying that one possible explanation is varying wage
21 rates?

22 Q Correct, and that is the additional assumption I
23 would like you to make here if it is --

24 A Okay, but it is not misclocking and it is a big
25 enough system so there's no random variation in sampling?

1 This is not a sampled system, this is a -- we know
2 what it looks like? We're sitting up above it so it is all
3 a wage rate difference?

4 Q It is all a wage rate difference. We are talking
5 about an IOCS type sampling system with a very large number
6 of tallies.

7 A Okay.

8 Q All tallies are direct and we are talking about a
9 ~~singling~~^{single}, sampling stratum with tally costs weighting per
10 the current historical IOCS methods.

11 A Okay, but again, back to Assumption Number 4. If
12 Operation A is 60 percent of the time and 50 percent of the
13 cost, that is totally due to wage differential in this
14 hypothetical?

15 Q Yes, it is.

16 A Okay.

17 Q And as a result of those assumptions, as we just
18 further clarified them orally, would you agree that 60
19 percent of the unweighted tallies and tally costs are
20 associated with Operation A?

21 A Yes.

22 Q Okay, and we are going to start with what we have
23 called Scenario 1 and of our two classes of mail, X and Y,
24 Class X accounts for 60 percent of the time and cost in both
25 operations -- that is, Operation A and Operation B.

1 With me so far?

2 A Yes.

3 Q And would you agree with the arithmetic shown
4 there that would indicate that under the Scenario 1 the cost
5 distributed to Class X on the basis of tally costs would be
6 0.6 or six-tenths of C?

7 A Yes, with C being the Total Cost.

8 Q Total Cost, correct.

9 A Yes.

10 Q And likewise the actual cost of Class X under the
11 arithmetic shown there would likewise yield the result that
12 the actual cost of Class X is six-tenths of the Total Cost,
13 C.

14 A I did get that far with you, yes.

15 Q Okay. Now if we move to Scenario Number 2.

16 In Scenario Number 2, Class X accounts for 70
17 percent of the time and the cost in Operation A, while that
18 same Class X accounts for only 40 percent of the time and
19 cost in Operation B.

20 A Okay.

21 Q And once again we're going to compare the cost
22 distributed to class X on the basis of tally costs with the
23 actual cost of class X. Would you agree, according to the
24 arithmetic shown in the cross-examination exhibit, under
25 scenario 2, that the cost distributed to class X on the

1 basis of tally costs would equal 58/100ths of total cost C?

2 A Yes.

3 Q And would you agree that, in fact, the actual
4 costs of class X are 55/100ths of class C?

5 A Looking at it from above, that is correct, in your
6 hypothetical.

7 Q Therefore, under our hypothetical, we would have
8 different wage rates in different operations. Would you
9 agree that the traditional tally weighting methodology
10 misstates the actual costs of Class X?

11 A In the stylized hypothetical it appears to.

12 Q Would you agree that there are actually in the
13 Postal Service wage dispersion within craft and CAG
14 combinations?

15 A Certainly within craft, yes.

16 Q Another question, this is a different topic. And
17 just for purposes of clarification. On page 27 of your
18 testimony, lines 8 through 9, you recommend that the
19 Commission use the method applied in Docket No. R94-1. I'm
20 on -- I'm sorry, page 27, lines 8 through 9.

21 A In the absence of a better alternative, yes.

22 Q Right. And my question is, based on the entire
23 context of the discussion on that page, as well as other
24 parts of your testimony, am I correct to assume that your
25 recommendation in this regard is limited to the distribution

1 methodology applied in Docket R94-1 and not the assumed
2 levels of variability?

3 A Yes.

4 Q Now, I would like to turn to your response to
5 Postal Service Interrogatory 18, Part A.

6 A Are we done with the hypothetical?

7 Q I hope so.

8 MR. KOETTING: Mr. Chairman, I would move that the
9 hypothetical, at this point, be entered into evidence.

10 CHAIRMAN GLEIMAN: Counsel, I see heads shaking
11 and hand movements.

12 MR. ACKERLY: On what ground would the
13 hypothetical itself be admitted into evidence? It is not
14 his testimony.

15 MR. KOETTING: Well, I am -- I did misspeak, I
16 meant the cross-examination exhibit.

17 MR. ACKERLY: On what grounds is the
18 cross-examination exhibit his testimony?

19 CHAIRMAN GLEIMAN: Mr. Koetting, it has been
20 transcribed into the record already.

21 MR. KOETTING: That's fine. I withdraw the
22 request.

23 CHAIRMAN GLEIMAN: Thank you, sir.

24 BY MR. KOETTING:

25 Q 18-A.

1 A I've got it.

2 Q Halfway down the first page, you state that break
3 time and clocking in and out time are, quote, "very unevenly
4 distributed across operations", correct?

5 A Yes.

6 Q You don't at that point provide a citation to
7 support that. Is your reference here to Exhibit DMA-2 in
8 your testimony, or was there something else you had in mind?

9 A I have reviewed all the -- most of the
10 spreadsheets that Witness Degen furnished. I probably
11 should have cited to some of those also.

12 Q Wouldn't you expect to see some variation in
13 operation in break and personal need time?

14 A You would expect to see some variation, yes. You
15 would be very -- you would be very surprised if all 50
16 operations were exactly the same.

17 Q Because, for example, you have things like mail
18 handlers that are contractually entitled to additional
19 wash-up time. Those are the kinds of factors that might
20 lead you to expect higher levels of break and personal need
21 time in specific operations, correct?

22 A Among other things.

23 Q Wouldn't you likewise expect some operations, as a
24 result of the nature of the work, to have higher overall not
25 handling costs than other operations?

1 A You would expect some. I am not sure anybody
2 knows exactly which ones they are. Certainly not on this
3 record, we don't have a good explanation of why they differ
4 so much.

5 Q And that would be -- however, your expectations
6 would be based directly on the nature of the work involved
7 in the operation, correct?

8 A If you were testing a hypothesis ^{statistically} ~~statically~~, I
9 guess you would want to start down that road.

10 Q Well, I am talking about your expectations before
11 you did any statistical testing, just based on your
12 understanding of the nature of the work performed in
13 operations, your expectation, based on the nature of that
14 work, would be you would expect to see different levels of
15 not handling?

16 A Yeah, yes.

17 Q Still on Postal Service -- your response to Postal
18 Service No. 18.

19 A I have to go back and get it again. Sorry.

20 Q And when you get there, --

21 A I have got it.

22 Q -- it's Table 1 we are looking at, which is a few
23 pages in. The page numbered 10 on my copy. And this is a
24 table that compares some productivity numbers, correct?

25 A Yes.

1 Q And, particularly, it is a comparison of Postal
2 Service multi-factor productivity, or TFP for short, to the
3 Bureau of Labor Statistics TFP index for the manufacturing
4 sector, correct?

5 A That's half of the table, yes.

6 Q Right. And that's the half I am looking at the
7 moment. Is it your understanding that the Postal Service
8 TFP incorporates work load and resource usage for the Postal
9 Service as a whole and not exclusively for mail processing?

10 A Yes, I believe so.

11 Q And so mail processing TFP could be leading or
12 lagging the Postal Service as a whole, correct?

13 A That's correct.

14 Q And you could not readily determine that from the
15 data -- from your Table 1, is that correct?

16 A That's correct.

17 Q And the same thing is true, is it not, switching
18 over to the right hand side of the table of the labor
19 productivity, it is not broken out specifically to mail
20 processing?

21 A That is also correct.

22 Q And mail processing could either lead or lag?

23 A That's correct.

24 Q Would you agree to the characterization of the
25 Postal Service as a labor-intensive service enterprise?

1 A I would call it labor-intensive. The word service
2 is kind of loaded in a particular sense.

3 Q If it is not a service enterprise, what is it?

4 A In a classic sense, it is a service enterprise.
5 If the question is, should its productivity look ^{like} a service,
6 or does its productivity look more like manufacturing, I have
7 always been willing to say that its productivity should look
8 more like manufacturing than other services that people
9 usually think about. It looks more like a steel mill than a
10 consulting firm.

11 Q Did you ^{Compare} ~~conform~~ Postal Service TFP to other Bureau
12 of Labor Statistics TFP indices?

13 A I have.

14 Q Are you ^{aware} ~~are~~ that BLS publishes a TFP index for
15 private non-^{farm} ~~form~~ businesses?

16 A Yes.

17 Q Have you examined that, made that comparison
18 between Postal Service productivity and the BLS TFP for
19 private non-^{farm} ~~form~~ businesses?

20 A I have looked at it in the past, yes.

21 Q Do you recall the comparison?

22 A The Postal Service does much better on that
23 comparison, there is no doubt about it whatsoever. Service
24 productivity is not nearly as good as manufacturing
25 productivity in the United States.

1 Q Would you be willing to accept, subject to check,
2 and I assume you have available the numbers to do this check
3 that I am asking you to accept subject to check, that the --
4 looking at the '72 to '93 time period that you cited to,
5 that Postal Service TFP annual growth rate, annual average
6 growth rate was more than twice that of the private non-~~form~~ *farm*
7 business sector?

8 A Subject to check, I would accept that. But,
9 again, I think it is important to understand what is in each
10 of the components, and who should the Postal Service be
11 compared to. Should they be compared to law firms and
12 consulting firms and accounting firms, and traditional
13 services? Or do they really look more like what you might
14 think of as manufacturing? That is really what the issue
15 is, what kind of productivity would you, should you expect.

16 Q One of the comparisons that you make in your
17 testimony, do you not, is with the railroad industry?

18 A I believe that we cite Witness Degen, who, on
19 cross, said that the railroad industry has achieved 5
20 percent growth in productivity.

21 Q What percentage of railroad inputs are labor? Do
22 you know?

23 A I'm not sure. It must be lower than the Postal
24 Service.

25 Q Do you think that that would be an important thing

1 to know in making this comparison?

2 A To say the words or if you were actually doing an
3 econometric analysis.

4 Q Well, simply if one is presenting productivity
5 numbers presumably with the intent that someone will draw
6 conclusions from them, might they likewise want to be aware
7 of the relative proportions of railroad versus postal inputs
8 that are comprised of labor?

9 A They might.

10 Q What about for example how many -- what proportion
11 of railroad right-of-ways have been abandoned since 1980?
12 Might that not be something that they would want to take into
13 account?

14 A I'll cite for the record right now that I'm not a
15 railroad expert. We simply cited Witness Degen's response
16 to a cross-examination question: What has productivity been
17 in the railroad industry, a service industry?

18 You can ask me lots of questions about the
19 railroads. I won't know the answers to almost all of them.

20 Q You are aware, though, are you not, that some
21 railroad right-of-ways -- a nontrivial portion of railroad
22 right-of-ways have been abandoned --

23 A Yes.

24 Q Over the last several decades?

25 A Yes.

1 MR. BERGMAN: I object only in that the witness
2 has never -- has not been designated an expert in
3 railroad --

4 CHAIRMAN GLEIMAN: I would rule in your favor,
5 except that the witness already answered the question, so,
6 you know --

7 THE WITNESS: And knew the answer.

8 MR. KOETTING: And I might add for the record that
9 Mr. Degen certainly wasn't presented as a witness on
10 railroad productivity by the Postal Service either, but
11 somehow or another he seemed to be answering questions in
12 that regard as well. So -- sauce for the goose, sauce for
13 the gander.

14 CHAIRMAN GLEIMAN: Well, I don't think we want to
15 get into goose and gander sauce here, you know, now.

16 MR. KOETTING: Particularly not with Mr. Ackerly
17 at the table.

18 THE WITNESS: And not with me on the witness
19 stand.

20 CHAIRMAN GLEIMAN: I'll leave it at that.

21 Do you have more questions, Mr. Koetting? Of a
22 nonrailroad nature?

23 [Laughter.]

24 MR. KOETTING: Let me just to close out the
25 railroad line --

1 [Laughter.]

2 BY MR. KOETTING:

3 Q You would agree, would you not, that the portion
4 of the Postal Service's resource usage in the transportation
5 sector is relatively minor?

6 MR. BERGMAN: Objection. Clarify what you mean by
7 minor or try to quantify.

8 BY MR. KOETTING:

9 Q Relative to the labor cost, Postal Service labor
10 cost -- Postal Service labor resource usage versus Postal
11 Service transportation resource usage, would you agree that
12 the labor usage very much overwhelms the transportation?

13 A Cost segment 14 is not as big as cost segment 3,
14 nor cost segment 6 and 7 combined; that's correct.

15 Q And in fact it's well under ten percent of total
16 Postal Service cost; correct?

17 A I'll have to go to my book to get that number, if
18 you want.

19 Q That's fine. Now we're done with railroads.

20 Still on Interrogatory No. 18, two pages further
21 down, you have table 2, the page with the number 12 at the
22 top. And this table presents productivities by MODS
23 operation with some percentage changes; correct?

24 A That's correct.

25 Q Wouldn't you expect productivity in individual

1 automated and mechanized operations to decline as the Postal
2 Service attempts to process more and more of its mail on
3 such equipment ^{that} at would have been previously handled
4 manually?

5 A I know that -- I believe the Postal Service
6 believes that, but I've spent some time thinking about that,
7 and I'm not sure that I really believe that for all
8 operations.

9 Q Would you agree that, for example, if we're
10 talking about letter mail sorting, that overall letter mail
11 sorting productivity can increase if mail that was formerly
12 sorted manually is now successfully processed on automated
13 equipment?

14 A That's correct. But for example if you look at
15 the OCR and you kind of try to explain the fact that
16 productivity in the OCR has declined by the fact that the
17 mail is getting dirtier, in the period of time that the mail
18 has gotten dirtier, computer chips have gotten much better,
19 computers are much better at recognizing things, and so even
20 if the mail has gotten dirtier, it's a little surprising
21 that given ten years of computing power we can't resolve the
22 images faster and do something with them, and the dirty mail
23 certainly doesn't affect the mechanical portion of the OCRs.
24 So dirty mail doesn't really explain OCRs as far as I can
25 tell.

1 Q Does your table in any way account for changes in
2 the operation mix in the letter and the piece distribution?

3 A These tables are simply from Witness Bradley's
4 productivities that are inherent in his regressions, so to
5 the extent that they don't, they don't.

6 Q Did you attempt to compute a productivity for
7 overall letter mail operations, for example, over this time
8 period?

9 A I don't remember if we did or if we didn't. I'm
10 sure that you'll find out that if -- I think you'll find out
11 if you do it for letter mail that it's probably increased,
12 because even though individual productivities have declined,
13 you're exactly right, things are moving into more and more
14 productive operations. So you have the effect that
15 individual productivity can decline, yet total productivity
16 can increase.

17 You know, there was that old political joke about
18 the guy changing parties raised the average IQ of both
19 parties. The situation is pretty much the same here.

20 MR. KOETTING: That's all we have, Mr. Chairman.

21 Thank you, Mr. Buc.

22 CHAIRMAN GLEIMAN: Is there any followup?

23 Questions from the bench?

24 Redirect?

25 MR. BERGMAN: Can we have five minutes, Mr.

1 Chairman?

2 CHAIRMAN GLEIMAN: Why don't we take ten, and
3 we'll come back at quarter of the hour, make this our
4 midmorning break.

5 [Recess.]

6 CHAIRMAN GLEIMAN: Is there any redirect?

7 MR. BERGMAN: Yes, Mr. Chairman. The DMA just has
8 a few questions on redirect.

9 CHAIRMAN GLEIMAN: Proceed.

10 MR. BERGMAN: Thank you.

11 REDIRECT EXAMINATION

12 BY MR. BERGMAN:

13 Q Mr. Buc, earlier, in response to the Postal
14 Service's questions concerning the cross-examination
15 exhibit, and, ⁱⁿ a particular, scenario 2 of the
16 cross-examination exhibit shows that there may be
17 differences in costs being distributed to particular classes
18 when one compares actual versus tally costs. Are there any
19 other reasons ^{to account} ~~for accounting~~ for such cost differences?

20 A I believe that the point that the Service was
21 making in the cross-examination, although maybe I shouldn't
22 anticipate their points, I should let them make their own
23 points, but perhaps the point that they were making is that
24 if there are wage differentials, there will be a need to
25 re-weight.

1 I would also point out that if there is
2 misclocking, there is the same need to re-weight to make it
3 all come out right, and that the re-weighting factors are
4 exactly the same whether they are due to wage differentials
5 or misclocking.

6 Q Thank you, Mr. Buc. On another line of
7 questioning by the Postal Service, they asked you questions
8 concerning the comparative statistical reliability of the
9 traditional IOCS LIOCATT system versus a MODs based cost --
10 cost based, cost pool system. Doesn't such statistical,
11 comparative statistical reliability depend on the number of
12 distribution keys as well?

13 A Yes, it does. The number of distribution keys is
14 important as well as how thick they are.

15 Q And are there a greater number of distribution
16 keys? Can you give any kind of quantification of the
17 distribution keys between the two systems?

18 A I believe that in the new system there are more
19 distribution keys.

20 Q And, finally, Mr. Buc, you were asked some
21 questions concerning the variabilities of -- comparative
22 variabilities of not handling costs by different activities.
23 Can you tell us how big those variations are?

24 A There are big variations in not handling costs
25 across activities. There's one of the MODs pools where not

1 handling costs amount to 93 percent of the cost of the whole
2 cost pool. I believe that there are three other pools where
3 not handling is 80 percent of the cost of the cost pool.
4 Then there are some cost pools where not handling costs are
5 only 20 percent.

6 Not only is there a huge amount of variability in
7 the not handling costs, but not handling costs are very,
8 very big, and I think ⁱⁿ volume variable tally dollars, they
9 are \$4.6 billion in this case, I think that they have been
10 growing very, very fast. And in a situation like that,
11 where it is not really quite clear what the causal
12 relationship is, to distribute them within pool doesn't seem
13 to make a lot of sense, especially when I believe that
14 consistency with Bradley demands that they be distributed
15 across pool.

16 MR. BERGMAN: That's all we have, Mr. Chairman.

17 CHAIRMAN GLEIMAN: Did redirect generate any
18 recross?

19 MR. KOETTING: I'm afraid it did, Mr. Chairman.

20 RE CROSS-EXAMINATION

21 BY MR. KOETTING:

22 Q Let's start with the question about the number of
23 distribution keys as well as the thickness. Why would the
24 number, per se, be a concern if there were adequate
25 thickness in each distribution key?

1 A If the hypothesis is true, if there's adequate
2 thickness, then I don't care about how many there are, but
3 thickness is probably related to the number of keys.

4 Q You had an exchange with your counsel regarding
5 the hypothetical in the cross-examination exhibit, and you
6 talked about the possibility of misclocking ~~be~~^{as} a source of
7 some problems, as well as wage differentials. But I take it
8 that if we go back to your original Interrogatory --
9 Interrogatory response that triggered our follow-up, which
10 triggered the cross-examination exhibit, and, specifically,
11 I am talking about DMA-6F.

12 A Six?

13 Q F as in Frank.

14 A F, yes.

15 Q And our question was, would wage dispersion within
16 craft IOCS CAG stratum combinations be a reason to modify
17 the IOCS tally cost weights, and your answer was no. And
18 you ~~referred to~~^{stated that} within a craft IOCS CAG strata, each
19 employee has an equal probability of being selected. The
20 fact that the wage rates are different will not bias the
21 estimate.

22 Did I interpret your response to your counsel's
23 question regarding the problems with wage differentials and
24 problems with misclocking, that now you are admitting that,
25 despite the fact that each employee has an equal probability

1 of being selected, that wage rates will bias the estimate?

2 A No, I was responding to the stylized hypothetical
3 example, not the real IOCS world.

4 Q You agree that the stylized -- in the stylized
5 hypothetical example, though, we had assumed that each
6 employee had equal probability of being selected?

7 A Yes.

8 Q And that didn't change the fact that, in our
9 hypothetical, wages rates were biased, correct?

10 A That's correct.

11 Q You had some discussion of the proportions of --
12 the size of the -- well, proportions, I guess, percentage
13 size of the not handling tallies in various cost pools with
14 your counsel, correct?

15 A Yes.

16 Q Aren't the largest proportion of not handling
17 tallies in general support operations where tallies are not
18 distributed within cost pools, under Witness Degen's
19 methodology?

20 A I would have to check precisely.

21 Q You don't have any reason to disagree with that
22 assertion, however?

23 A Or to agree.

24 MR. KOETTING: That's all, Mr. Chairman. Thank
25 you.

1 CHAIRMAN GLEIMAN: Is there any further --

2 MR. BERGMAN: Mr. Chairman, give us one minute,
3 please.

4 CHAIRMAN GLEIMAN: Certainly.

5 [Recess.]

6 MR. BERGMAN: We have one more question, Mr.
7 Chairman.

8 CHAIRMAN GLEIMAN: Certainly.

9 MR. BERGMAN: This is a follow-up to the Postal
10 Service's follow-up questions, as well as a reference to Mr.
11 Buc's response to USPS/DMA-T-1-6.

12 FURTHER REDIRECT EXAMINATION

13 BY MR. BERGMAN:

14 Q Mr. Buc, you said that, in response to question
15 6F, you stated that wage dispersions within craft IOCS CAG
16 stratum combinations would not be a reason to modify the
17 IOCS tally cost weights, and that was because, quote, "Given
18 that within a craft IOCS CAG strata, each employee has an
19 equal probability of being selected, the fact that wage
20 rates are different will not bias the estimate." And I
21 assume that you are here referring to the real world. In
22 the hypothetical in the cross-examination exhibit, you
23 admitted that there may be bias based upon the assumptions
24 that were given. Can you explain what the difference is
25 between the real world and the assumptions under the

1 stylized hypothetical?

2 A Sure. First of all, we had straight wage
3 differentials with everybody being paid more. The
4 differences aren't quite that way in the Postal Service and
5 people, there's a wide variety of wage rates, and it is not
6 the case that some people in this operation are always paid
7 more than these people in that operation. It is a much more
8 complicated situation.

9 Second of all, in the real world, there is some
10 misclocking, which there isn't in this stylized example.
11 And I would have to think of some other reasons. But those
12 are the two major reasons.

13 MR. BERGMAN: Thank you. That's all we have.

14 CHAIRMAN GLEIMAN: Mr. Koetting? Anyone else?

15 [No response.]

16 CHAIRMAN GLEIMAN: If that is the case, Mr. Buc, I
17 want to thank you. We appreciate your appearance here today
18 and your contributions to our record. And if there is
19 nothing further, you are excused.

20 THE WITNESS: Thank you.

21 [Witness excused.]

22 CHAIRMAN GLEIMAN: Our next witness is appearing
23 on behalf of the Magazine Publishers of America. Mr. Glick
24 is already under oath in this proceeding.

25 So, Mr. Gold, when you are ready with your

1 witness, you can introduce his testimony.

2 MR. GOLD: MPA calls Sander Glick. He's been
3 already sworn.

4 CHAIRMAN GLEIMAN: You can proceed to introduce
5 Mr. Glick's testimony.
6 Whereupon,

7 SANDER GLICK,
8 a witness, was called for examination by counsel for
9 Magazine Publishers of America and, having been previously
10 duly sworn, was examined and testified as follows:

11 DIRECT EXAMINATION

12 BY MR. GOLD:

13 Q Mr. Glick, do you have before you what's been
14 identified as MPA-T-3, Direct Testimony of Sander Glick?

15 A Yes, I do.

16 Q And have you filed any revisions to this
17 testimony?

18 A Yes, on February 11.

19 Q And do the copies that are being submitted to the
20 reporter reflect those revisions?

21 A Yes, they do.

22 Q And if you were to testify today, would your
23 testimony be the same?

24 A Yes, it would.

25 MR. GOLD: Mr. Chairman, I'm handing two copies of

1 the testimony to the reporter and ask that it be admitted
2 into evidence.

3 CHAIRMAN GLEIMAN: Are there any objections?

4 Hearing none, Mr. Glick's testimony and exhibits
5 are received into evidence, and I direct that they be
6 transcribed into the record at this point.

7 [Direct Testimony and Exhibits of
8 Sander Glick, MPA-T-3, was received
9 into evidence and transcribed into
10 the record.]

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

Revised (2/11/98)

MPA-T-3

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

POSTAL RATE AND FEE CHANGES, 1997

DOCKET NO. R97-1

DIRECT TESTIMONY
OF
SANDER GLICK
ON BEHALF OF
MAGAZINE PUBLISHERS OF AMERICA

Revised (2/11/98)

1 **I. Autobiographical Sketch**

2
3 My name is Sander A. Glick. I am a Senior Analyst at Project
4 Performance Corporation (PPC), a consulting firm based in Sterling, Virginia.
5 PPC provides management, information technology, and environmental
6 consulting services to private and public sector clients. The firm has grown
7 rapidly since our inception in 1991; last year we were number 272 on the *Inc.*
8 *500*, a compilation of the fastest growing private companies in America. Since
9 joining the firm, I have performed economic and cost analysis for both private
10 and governmental clients.

11
12 I attended the Maxwell School of Citizenship and Public Affairs at
13 Syracuse University, where I received a Master of Public Administration degree
14 in 1994, and Carleton College, where I received a BA, magna cum laude, in
15 Physics in 1993. While at Syracuse University, I was a graduate assistant in the
16 Center for Technology and Information Policy and assisted in developing and
17 administering a National Science Foundation-funded survey of more than 500
18 companies regarding the costs and benefits of working with Federally-funded
19 Research and Development laboratories.

20
21 Following my formal education, I joined PPC in 1994 as an Analyst. At
22 the end of 1996, I was promoted to Senior Analyst. Since joining PPC, I have
23 assisted the Department of Energy by developing methods for estimating the life-
24 cycle cost of cleaning up nuclear weapon production sites and then collecting
25 data to implement the analysis. I have also developed regulatory compliance
26 cost estimates and reviewed cost estimates prepared by other cost estimators.

Revised (2/11/98)

1 **II. Purpose of Testimony and Summary Conclusions**

2
3 In this testimony, I review the Postal Service's method for determining
4 rural carrier salaries and the Postal Service's rural carrier costing methodology. I
5 find that the Postal Service's costing methodology violates the long established
6 principle that the distribution of a cost to subclass must be consistent with the
7 way the cost is incurred and the attribution methodology. This inconsistency
8 results in an anomalous result: the cost distributed to a subclass of mail per flat
9 delivered is about 15 percent higher than the amount the rural carrier is actually
10 paid to deliver a flat while the cost distributed per letter is about ten percent
11 higher than the amount the rural carrier is paid to deliver a letter. To correct this
12 anomaly and to make rural carrier cost distribution and attribution consistent, I
13 propose an improvement to the Postal Service's proposed methodology for
14 distributing rural carrier costs to subclass.

15

16 **III. Rural Carrier Salaries**

17

18 Unlike city carriers who are paid on an hourly basis, the Postal Service
19 pays rural carriers on evaluated routes (salaries for carriers on evaluated routes
20 comprise more than 90 percent of salary costs for rural carriers) based upon the
21 amount of work they perform (e.g., the number of letters they deliver). For
22 example, a rural carrier is paid for .0791 minutes for every letter he delivers,
23 regardless of how long it actually takes him to deliver the letter.

24

25 Table 1 shows the evaluation factor, or minutes allowed per unit of work
26 (e.g., minutes allowed per letter delivered), for all rural carrier workload
27 measures (USPS-T-5, WP-B, W/S 10.1.1) and the amount a carrier, being paid
28 the average FY 1996 rural carrier salary of \$21.07 per hour (LR-H-212, W/S-I,
29 Line 63, Column E), would be paid for performing one unit of each task.

Revised (2/11/98)

Table 1. Evaluation Factors for Each Task

Item	Evaluation Factor	Average Cost (\$)
Letters Delivered	0.07910	\$0.028
Flats Delivered	0.14160	0.050
Parcels Delivered	0.33300	0.117
Boxholders Delivered	0.04000	0.014
COD Delivered	5.50000	1.931
Accountables Delivered	4.00000	1.405
DPS	0.03330	0.012
Sector Segment	0.04440	0.016
Postage Due	0.20000	0.070
Return Receipts	0.25000	0.088
Letters/Flats Collected	0.04000	0.014
Parcels Accepted	4.00000	1.405
Accountables Accepted	2.00000	0.702
Money Orders	3.50000	1.229
Vehicle Loading	0.50000	0.176
Markups	0.23340	0.082
Miles	12.00000	4.214
Regular Boxes	2.00000	0.702
Centralized Boxes	1.00000	0.351
L Boxes	1.64000	0.576
NDCBU Compartments	1.00000	0.351
Parcel Post Lockers	2.00000	0.702
Pouches	1.00000	0.351
Withdrawals	1.00000	0.351
Change of Address	2.00000	0.702
Form 3579	2.00000	0.702
Office Work	1.00000	0.351
Purchase Stamps	1.00000	0.351
Other Suitable Allowance	1.00000	0.351
Dismount	0.10000	0.035
Dismount Distance	0.00284	0.001

For example, a carrier being paid the average rural carrier salary would be paid five cents to deliver a flat and 2.8 cents to deliver a letter. Because the "average" carrier is paid five cents to deliver a flat (regardless of the volume), five cents is the volume variable (or marginal) rural carrier cost for delivering one flat.

For 1996, the Postal Service based "rural carrier salaries on route evaluations [the National Mail Count] conducted in the fall of 1995." (Response of United States Postal Service to MPA/USPS-T17-10). On these route evaluations, the Postal Service counted the workload of individual rural carriers

Revised (2/11/98)

1 for each route evaluation item shown in Table 1. To determine the number of
2 hours for which each rural carrier would be paid, the Postal Service multiplied the
3 count for each route evaluation item by its respective evaluation factor and then
4 summed hours across all route evaluation items. The FY 1996 salary of an
5 individual rural carrier was based upon the number of hours calculated from the
6 "evaluation" conducted in the Fall of 1995.

7

8 Because carriers are paid based upon workload, rather than actual work
9 hours, a perfect costing method would distribute the amount a carrier is paid to
10 perform a unit of workload for each unit of workload performed (e.g., distribute
11 five cents, the amount a carrier is paid to deliver a flat, to subclass for every flat
12 delivered). Because the National Mail Count (NMC) is only performed in the Fall
13 and therefore does not perfectly reflect annual mail volumes, an appropriate
14 costing system, at a minimum, should ensure an equal markup on the amount a
15 carrier is paid to perform a unit of workload for each route evaluation item (e.g., if
16 the Postal Service distributes 15 percent more than the cost for delivering a flat
17 for each flat delivered, the Postal Service should also distribute 15 percent more
18 than the cost for delivering a letter for each letter delivered).¹

19

20 IV. Rural Carrier Costing Methodology

21

22 As for all cost segments, there are two steps to the Postal Service's
23 costing methodology. First, Witness Baron determined the volume variability of
24 rural carrier costs (the attribution step). Then, Witness Alexandrovich distributed
25 volume-variable costs to subclass (the distribution step).

26

27 A. Attribution - Determining Volume Variable Cost

28

29 Witness Baron first divided accrued costs into those for evaluated routes
30 and those for other routes based upon payroll data (See Table 2). He then

¹ My improvements focus on the "Letters Delivered" and "Flats Delivered" costs because these costs account for approximately 80 percent of all rural carrier costs.

Revised (2/11/98)

1 defined sixteen of the route evaluation items, shown in Table 1, as variable
 2 because "the time required for completion varies proportionately with volume
 3 delivered on the route." The remaining items were fixed because "the time
 4 required for completion is unaffected by route volume." (USPS-T-17 at 68-69).

5

6 **Table 2. FY 1996 Rural Carrier Accrued Cost by Route Type**

7

Route Type	Cost (\$000s)
Evaluated	\$2,801,424
Other	273,010

8

9 Individually for evaluated and other routes, he then determined the
 10 average units of each route evaluation item performed per week per route from
 11 the NMC and multiplied this figure by the evaluation factor for each route
 12 evaluation item to determine the "average weekly minutes for the given item. For
 13 example, the average weekly activity level estimated for the letters delivered item
 14 equals 5,713 letters per week per route. The product of this level and the
 15 evaluation factor of 0.0791 minutes per letter equals an estimated 452 minutes
 16 per week per route for delivering letters in FY 1996." (USPS-T-17 at 70).

17

18 Finally, Witness Baron divided the sum of the average minutes per week
 19 per route for all variable route evaluation items by the average minutes per week
 20 per route for all route evaluation items, fixed and variable, to obtain the volume
 21 variability for evaluated routes and other routes (See Table 3). (USPS-T-17 at
 22 74).

23

24 **Table 3. Volume Variability of Rural Carrier Costs**

25

Route Type	Variability (%)	Variable Cost (\$000s)
Evaluated	49.04	\$1,373,846
Other	49.87	136,139

26

Revised (2/11/98)

1 flats primarily to account for the fact that the definition of a flat in the NMC is
2 different than the standard postal definition of a flat.³

3

4 V. Data Anomaly

5

6 Table 1 shows that the average rural carrier would have been paid 2.8
7 cents for each letter delivered and 5.0 cents for each flat delivered in the Base
8 Year. In contrast, the Base Year 1996 cost distributed to subclass per letter was
9 3.0 cents (about ten percent higher than the amount the rural carrier is paid) and
10 the cost distributed per flat was 5.7 cents (about 15 percent higher).⁴

11

12 The reason for this anomaly is that Witness Alexandrovich, consistent with
13 the attribution step, used NMC data to disaggregate rural carrier volume variable
14 costs to the "Letters Delivered" and "Flats Delivered" rural carrier cost pools, but
15 used volumes from the CCS to distribute these costs to subclass. In past cases,
16 the Postal Service argued that shape data from the NMC is more reasonable
17 than that from CCS:

18

19 "The primary source of the discrepancy appears to be small flats
20 which accidentally are recorded as letters. The discrepancy
21 results from a definition of 'letters' and 'flats' that is unique to
22 rural routes. The shape of rural letters is defined as 5" in height
23 or less. Anything with a greater height is a flat. By the standard
24 Postal definition (in the Domestic Mail Manual), a letter can have
25 a height of up to 6 1/8". These pieces of mail are shaped like
26 letters, but in fact are greater than 5" in height. They would be
27 considered letters except by experts in Rural Carrier mail shape
28 definitions.... The National Mail Count is the basis for the
29 carrier's salary.... Therefore, they [carriers] would have an
30 incentive to insure that none of their flats get misclassified as
31 letters.... The 2858R surveys [CCS in this case], on the other
32 hand, do not appear to carriers as *potentially beneficial or*
33 *harmful to them....* [For this test, data collectors] are experts in
34 distinguishing the details of the different subclasses, so there is
35 no reason to believe they are making any mistakes in this area.
36 The shape of mail, on the other hand, is different for rural routes
37 than for city routes. The shape is not the main focus of this test,

³ For more detail on the mail shape adjustment, please refer to Section V of this testimony or Docket No. R90-1, USPS-T-13, Appendix F.

⁴ Cost distributed per route evaluation item is equal to the rural carrier cost for a route evaluation item divided by the number of units (e.g., mail volume) for that route evaluation item.

Revised (2/11/98)

1 and furthermore, is inconsistent with the shape definition for city
2 routes. Therefore, it seems reasonable to conclude that some
3 pieces... are being recorded as letters instead of flats." (Docket
4 No. R90-1, USPS-T-13, Appendix F, Page F-26 - F-28).
5

6 For this reason, the Postal Service in Docket No. R90-1, and all dockets
7 since⁵, implemented a procedure called the mail shape adjustment to adjust
8 letters (as a percentage of letters and flats) in the 2858R (or rural CCS) to be
9 equal to letters (as a percentage of letters and flats) in the NMC. In this case,
10 the mail shape adjustment does not fully correct the problem. This can be seen
11 in two inconsistencies which remain after the mail shape adjustment.
12

13 First, based upon NMC volumes, Witness Alexandrovich found that letters
14 make up 58 percent of rural carrier letter/flat mail volume (USPS-T-5, W/P B,
15 Tables 10.1.1 and 10.2.1). CCS volumes, even after the mail shape adjustment,
16 indicate that letters make up 59 percent of rural carrier letter/flat mail volume.
17 Second, as described earlier in this section, the cost distributed per flat is higher
18 than the volume variable cost of rural carrier flat delivery - the amount a carrier is
19 paid to deliver a flat - while the cost distributed per letter is lower than the volume
20 variable cost of rural carrier letter delivery - the amount a carrier is paid to deliver
21 a letter. I propose that the Postal Rate Commission ensure that attribution and
22 distribution are consistent by making an adjustment that fully addresses these
23 anomalies. Section VI proposes a modification to the Postal Service's mail
24 shape adjustment that properly addresses the problem.
25

26 VI. Proposed Methodology

27
28

29 I propose a mail shape adjustment that recodes a sufficient amount of
30 letters such that the ratio of FY 1996 letters to letters and flats combined from
31 CCS be equal to 58 percent. Performing any other letter/flat mail shape
32 adjustment will result in the anomaly described above. As derived in Exhibit

⁵ The Postal Service's proposed mail shape adjustment is described in LR-H-193.

Revised (2/11/98)

1 MPA 3-1, this mail shape adjustment recodes 1 out of every 6.34818 letters as
2 flats. This solves the anomaly and ensures that the markup (in this case, mark
3 down) on flats is equal to the markup on letters. Exhibit MPA 3-2 shows the
4 resulting Base Year 1996 distribution keys for the "Flats Delivered" and "Letters
5 Delivered" cost pools.

6
7 **VII. Conclusions**

8
9 There is an inconsistency between volume data from the NMC and the
10 rural CCS. In Docket No. R90-1, Witness Barker found that this was primarily
11 *due to the fact that rural flats are defined differently than the standard definition*
12 *in the Domestic Mail Manual.* This inconsistency results in attributing too much
13 cost to classes with a high proportion of flats and too little cost to classes with a
14 high proportion of letters.

15
16 The Postal Service's mail shape adjustment does not completely address
17 the problem. For this reason, I propose that the Commission use the mail shape
18 adjustment described in Section VI of my testimony and illustrated in Exhibit
19 MPA 3-1. Adopting this adjustment will result in the Base Year rural carrier cost
20 distribution for "Letters Delivered" and "Flats Delivered" shown in Exhibit MPA 3-
21 2.

22
23 Exhibit MPA 3-3 estimates the difference in Test Year After Rates (TYAR)
24 costs by subclass between the USPS proposed rural carrier costing methodology
25 and the MPA proposed methodology. To obtain a precise estimate of the TYAR
26 cost difference, the Rate Commission should rerun the Postal Service's roll
27 forward model. The proposed methodology decreases Periodical rural carrier
28 costs by \$4.2 million and total Periodical costs, taking into account cost
29 piggybacks, by \$5.1 million. Using TYAR volumes from Exhibit USPS-30F,
30 Table 5 disaggregates the cost reduction within the Periodical class by subclass.

31

Revised (2/11/98)

1 **Table 5. TYAR Periodicals Cost Reduction by Subclass**
2

Subclass	Cost Reduction (\$000s)
In-County	\$446
Regular	\$3,538
Nonprofit	\$1,070
Classroom	\$23

3

Revised (2/11/98)

 Exhibit MPA 3-1. MPA Proposed Mail Shape Adjustment Summary (Volumes in 000s)

 Postal Service Attribution Step Percentages

LETTERS	58.01% [1]
FLATS	41.99% [2]

 FY 1996 RCCS Data

LETTERS	22,207,467 [3]	68.86% [5]
FLATS	10,044,259 [4]	31.14% [6]

If the 1996 Rural CCS data had the same percentages of letters and flats as in the National Mail Count, there would have to be the following distribution:

LETTERS	18,709,226 [7]	58.01% [9]
FLATS	13,542,500 [8]	41.99% [10]

This would require an adjustment of 3,498,241 pieces [11]

1 out of every 6.34818 letters would have to be reclassified as flats. [12]

There are only 21,156,071 letters in subclasses with both letters and flats. [13]

For subclasses with both flats and letters, 1 out of every 6.04763 letters would have to be reclassified as flats. [14]

-
- [1] USPS-T-5, W/P B, W/S 10.1.1 and 10.2.1, Column 2
 [2] USPS-T-5, W/P B, W/S 10.1.1 and 10.2.1, Column 2
 [3] USPS Response to MPA/USPS-T5-2CD, Table 2
 [4] USPS Response to MPA/USPS-T5-2CD, Table 2
 [5]=[3]/([3]+[4])
 [6]=[4]/([3]+[4])
 [7]=[1]*([3]+[4])
 [8]=[2]*([3]+[4])
 [9]=[1]
 [10]=[2]
 [11]=[3]-[7]
 [12]=[3]/[11]
 [13] USPS Response to MPA/USPS-T5-2CD, Table 2
 [14]=[13]/[11]

Exhibit MPA 3-2. MPA Proposed Adjustment Base Year 1996 Letters and Flat Delivered Cost Distribution (000s)

Class/Subclass	Volume/Distribution Key						Revised Cost Distribution	
	Pre-Adjusted Letters [1]	Adjusted Letters [2]	Adjusted (%) [3]	Pre-Adjusted Flats [4]	Adjusted Flats [5]=[1]-[2]+[4]	Adjusted (%) [6]	Letters Delivered [7]=Letter Cost*[3]	Flats Delivered [8]=Flat Cost*[6]
First-Class Mail								
Letters and Parcels	6,348,432	5,298,693	28.3%	748,470	1,798,209	13.3%	\$127,643	\$100,090
Presorted Letters and Parcels	7,517,234	6,274,229	33.5%	354,848	1,597,853	11.8%	\$151,144	\$88,938
Government Post Cards	42,417	42,417	0.2%	0	0	0.0%	\$1,022	\$0
Private Cards	615,117	615,117	3.3%	0	0	0.0%	\$14,818	\$0
Presorted Private Cards	393,537	393,537	2.1%	0	0	0.0%	\$9,480	\$0
Total	14,916,737	12,623,994	67.5%	1,103,318	3,396,061	25.1%	\$304,107	\$189,027
Priority Mail	2,483	2,072	0.0%	35,961	36,372	0.3%	\$50	\$2,024
Express Mail	0	0	0.0%	0	0	0.0%	\$0	\$0
Mailgram	325	325	0.0%	0	0	0.0%	\$8	\$0
Periodicals Mail	297,675	248,453	1.3%	2,543,919	2,593,141	19.1%	\$5,985	\$144,336
Standard (A) Mail								
Single-Piece Rate	3,217	2,685	0.0%	4,613	5,145	0.0%	\$65	\$286
Enhanced Carrier Route (ECR)	1,825,310	1,523,488	8.1%	2,798,495	3,100,317	22.9%	\$36,700	\$172,566
Regular	3,564,987	2,975,502	15.9%	2,905,243	3,494,728	25.8%	\$71,679	\$194,519
Nonprofit ECR	198,821	165,945	0.9%	115,593	148,469	1.1%	\$3,998	\$8,264
Nonprofit	1,301,467	1,086,264	5.8%	468,378	683,581	5.0%	\$26,168	\$38,049
Total	6,893,802	5,753,884	30.8%	6,292,322	7,432,240	54.9%	\$138,609	\$413,684
Standard (B)								
Parcels	3,214	2,683	0.0%	10,681	11,212	0.1%	\$65	\$624
Bound Printed Matter	1,822	1,521	0.0%	27,897	28,198	0.2%	\$37	\$1,570
Special	303	253	0.0%	8,376	8,426	0.1%	\$6	\$469
Library Rate	2,726	2,275	0.0%	2,851	3,302	0.0%	\$55	\$184
Total	8,065	6,731	0.0%	49,805	51,139	0.4%	\$162	\$2,846
Penalty (USPS)	29,783	24,858	0.1%	5,585	10,510	0.1%	\$599	\$585
Free Blind/Hndc Serv	4,860	4,056	0.0%	4,246	5,050	0.0%	\$98	\$281
International	53,737	44,851	0.2%	9,103	17,989	0.1%	\$1,080	\$1,001
Total All Mail	22,207,467	18,709,226	100.0%	10,044,259	13,542,500	100.0%	\$450,698	\$753,785

[1] Postal Service Response to MPA/USPS-T5-2CD, Table 2

[2]=[1]*(1-1/([14] from Exhibit MPA 3-1)) for subclasses with both flats and letters. For subclasses with no flats, [2]=[1]

[3] Proportions of "Total All Mail" From Column [2]

[4] Postal Service Response to MPA/USPS-T5-2CD, Table 2

[4] Proportions of "Total All Mail" From Column [5]

[7] Letters Delivered Cost = USPS-T-5, W/P B, [W/S 10.1.1 Line 3, Column 10] + [W/S 10.2.1 Line 3, Column 10]

[8] Flats Delivered Cost = USPS-T-5, W/P B, [W/S 10.1.1 Line 4, Column 10] + [W/S 10.2.1 Line 4, Column 10]

Exhibit MPA 3-3. Base Year 1996 Rural Carrier Attributable Cost for All Mail Under Proposed and MPA-Revised Methodologies and Test Year After Rates Cost Difference (\$000s)

Class/Subclass	Old Method							New Method			C/S 10 Difference		
	Evaluated Routes		Other Routes		All			All			Base Year	TYAR	TYAR
	Letters	Flats	Letters	Flats	Letters	Flats	C/S 10	Letters	Flats	C/S 10	w/o Piggyback	w/o Piggyback	w/ Piggyback
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
First-Class Mail													
Letters and Parcels	116,103	87,828	11,696	8,470	127,799	96,298	296,468	127,643	100,090	300,104	3,636	3,785	4,531
Presorted Letters and Parcels	137,481	76,195	13,850	7,347	151,331	83,542	263,567	151,144	88,938	268,775	5,208	5,669	6,785
Single Piece Cards ¹	14,093	0	1,420	0	15,513	0	19,248	15,840	0	19,575	327	339	406
Presorted Private Cards	8,435	0	850	0	9,285	0	11,053	9,480	0	11,248	195	255	305
Total	276,112	164,023	27,816	15,817	303,928	179,840	590,336	304,107	189,027	599,702	9,366	9,994	11,963
Priority Mail	45	1,897	5	183	50	2,080	12,979	50	2,024	12,923	(56)	(67)	(80)
Express Mail	0	0	0	0	0	0	4,729	0	0	4,729	0	0	0
Mailgram	8	0	1	0	9	0	11	8	0	10	(1)	(1)	(1)
Periodicals Mail	5,446	135,319	549	13,049	5,995	148,368	157,002	5,985	144,336	152,960	(4,042)	(4,242)	(5,077)
Standard (A) Mail													
Single-Piece Rate	57	268	6	26	63	294	1,149	65	286	1,143	(6)	(7)	(8)
Enhanced Carrier Route (ECR)	33,382	160,343	3,363	15,462	36,745	175,805	259,640	36,700	172,566	256,356	(3,284)	(3,345)	(4,003)
Regular	65,201	179,263	6,568	17,286	71,769	196,549	304,392	71,679	194,519	302,272	(2,120)	(2,741)	(3,281)
Nonprofit ECR	3,636	7,569	366	730	4,002	8,299	13,834	3,998	8,264	13,794	(40)	(36)	(43)
Nonprofit	23,801	34,471	2,398	3,324	26,199	37,795	70,010	26,168	38,049	70,232	222	261	313
Total	126,077	381,914	12,701	36,828	138,778	418,742	649,025	138,609	413,684	643,797	(5,228)	(6,075)	(7,271)
Standard (B)													
Parcels	57	584	6	56	63	640	9,804	65	624	9,790	(14)	(16)	(19)
Bound Printed Matter	33	1,471	3	142	36	1,613	10,381	37	1,570	10,338	(43)	(48)	(58)
Special	4	440	0	42	4	482	5,199	6	469	5,188	(11)	(12)	(14)
Library Rate	49	172	5	17	54	189	1,243	55	184	1,239	(4)	(4)	(5)
Total	143	2,667	14	257	157	2,924	26,627	162	2,846	26,555	(72)	(81)	(97)
Penalty (USPS)	545	522	55	50	600	572	1,537	599	585	1,549	12	10	12
Free Blind/Hndc Serv	90	261	9	25	99	286	671	98	281	665	(6)	(7)	(9)
International	983	887	99	86	1,082	973	2,585	1,080	1,001	2,612	27	26	32
Total All Mail	409,449	687,490	41,249	66,295	450,698	753,785	1,445,502	450,698	753,785	1,445,502	0	(181)	(216)

¹Combines Government Post Cards and Private Cards

[1] USPS-T-5, W/P, W/S 10.1.2, Column 8

[2] USPS-T-5, W/P B, W/S 10.1.2, Column 9

[3] USPS-T-5, W/P B, W/S 10.2.2, Column 8

[4] USPS-T-5, W/P B, W/S 10.2.2, Column 9

[5]=[1]+[3]

[6]=[2]+[4]

[7] Exhibit USPS-5A at 33-34, Column Total C/S 10

[8] Exhibit MPA 3-2, Column [7]

[9] Exhibit MPA 3-2, Column [8]

[10]=[7]-([5]+[6])+(8)+[9]

[11]=[10]-[7]

[12]=[11]*[TYAR C/S 10 (from Exhibit USPS-15H at 33-34, Column Total C/S 10)]/[7]

[13]=[12]*[Piggyback Factor (LR-H-77 at 138)]

1 CHAIRMAN GLEIMAN: Mr. Glick, have you had an
2 opportunity to examine the packet of designated written
3 cross-examination that was made available earlier?

4 THE WITNESS: Yes, I have.

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

8 THE WITNESS: Yes, based upon the revisions that
9 we just provided.

10 CHAIRMAN GLEIMAN: Okay. And do you have a list
11 of the revisions, just so that parties can know what changes
12 you made in your earlier responses?

13 THE WITNESS: Yes. The second-to-last paragraph
14 of MPA-T-3, I struck that paragraph, and the beginning of
15 the paragraph before, I said there are two reasons, and I
16 changed that to there is one reason.

17 CHAIRMAN GLEIMAN: Thank you.

18 I'm going to provide two copies of the corrected
19 designated written cross-examination of Witness Glick to the
20 reporter, and direct that it be accepted into evidence and
21 transcribed into the record at this point.

22 [Designation of Written
23 Cross-Examination of Sander Glick,
24 MPA-T-3, was received into evidence and
25 transcribed into the record.]

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, DC 20268-0001

Postal Rate and Fee Changes, 1997

Docket No. R97-1

DESIGNATION OF WRITTEN CROSS-EXAMINATION
OF MAGAZINE PUBLISHERS OF AMERICA
WITNESS SANDER A. GLICK
(MPA-T3)

Party

Office of the Consumer Advocate

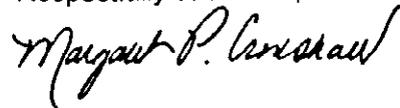
United States Postal Service

Interrogatories

USPS/MPA-T3-1-3

USPS/MPA-T3-1-3

Respectfully submitted,



Margaret P. Crenshaw
Secretary

INTERROGATORY RESPONSES OF
MAGAZINE PUBLISHERS OF AMERICA
WITNESS SANDER A. GLICK (T3)
DESIGNATED AS WRITTEN CROSS-EXAMINATION

Interrogatory:

USPS/MPA-T3-1

USPS/MPA-T3-2

USPS/MPA-T3-3

Designating Parties:

OCA, USPS

OCA, USPS

OCA, USPS

**Magazine Publishers of America Witness Sander Glick
Responses to Interrogatories of USPS**

USPS/MPA-T3-1. Please refer to Exhibit MPA 3-1.

- (a) Please confirm that the letters volume you used to calculate the letters percentage of 51.70% shown in the top row of this exhibit excludes DPS and sector segment mail pieces. If you confirm, please explain why you excluded DPS and sector segment mail from your calculation of the letters percentage. If you do not confirm, please explain fully.
- (b) Please confirm that if your calculation had included DPS and sector segment mail, the letters percentage would have equaled 58.01%.
- (c) If you did not exclude DPS and sector segment in your calculation of 51.70% as the letters percentage, please explain your derivation of this percentage.

Response:

(a) Confirmed. I assumed that the distribution key the Postal Service proposed for "Letters Delivered" costs was an appropriate distribution key. Specifically, because "Letters Delivered" costs do not include any costs for DPS and sector segment mail, I assumed that the distribution key for "Letters Delivered" excluded DPS and sector segment volumes. If this were the case, it would be proper to exclude DPS and sector segment mail pieces from the calculation that resulted in the 51.70% in the top row of Exhibit MPA 3-1. My response to USPS/MPA-T3-3 explains why the Postal Service-proposed distribution key for "Letters Delivered" costs is incorrect and shows that the anomaly I explained in my testimony would still exist even if I used the 58.01 percent figure in my mail shape adjustment. Based on this interrogatory, I will revise my testimony to reflect the 58.01 percent figure.

(b) Using my process, I calculate 58.02%.

(c) N/A

**Magazine Publishers of America Witness Sander Glick
Responses to Interrogatories of USPS**

USPS/MPA-T3-2. Please refer to USPS-T-5, WP-B, W/S 10.1.1 and 10.2.1, column 2. Please confirm that the DPS and sector segment items listed on line numbers 8a and 8b consist of deliveries of letter-shape mail pieces. If you do not confirm, please explain your understanding of the shape content of DPS and sector segment mail pieces as defined at lines 8a and 8b.

Response:

Confirmed.

Rev.

**Magazine Publishers of America Witness Sander Glick
Responses to Interrogatories of USPS**

USPS/MPA-T3-3. Please refer to USPS-T-5, WP-B, W/S 10.1.2 and 10.2.2, column 1. Please confirm that the CCS letters delivered volumes that were used to derive the percentages shown in this column 1 include DPS and sector segment volumes. If you do not confirm, please explain your understanding of how the rural CCS file accounts for DPS and sector segment mail.

Response:

Confirmed. Please note that including DPS and sector segment volumes in the distribution key for "Letters Delivered" costs is inappropriate. The costs for the "Letters Delivered" route evaluation item do not include costs for DPS and sector segment (SS) letter delivery. Therefore, the distribution key for this route evaluation item should exclude DPS and sector segment volumes. Nonetheless, the Postal Service's distribution key for "Letters Delivered" costs includes DPS and SS letter volumes.

An implication of the Postal Service using an incorrect distribution key for the "Letters Delivered" route evaluation item is that the Postal Service distributes more rural carrier cost per DPS or sector segment letter than for each non-DPS/non-SS letter. This is despite the fact that rural carriers are paid less to deliver DPS and sector segment letters (about 1.2 cents and 1.6 cents, respectively) than they are paid to deliver other letters (2.8 cents). While DPS and SS letters are included in the distribution key for the "Letters Delivered" route evaluation item, non-DPS/non-SS letters are not included in the distribution key for the "DPS" and "Sector Segment" route evaluation items. Therefore, the Postal Service's rural carrier cost distribution method assigns too much cost to classes of mail for which a large portion of letter mail consists of DPS/SS letters and not enough cost to classes of mail with a below average proportion of DPS/SS letters. To correct this problem, the Postal Service should exclude sector segment and DPS letters from the distribution key for the "Letters Delivered" route evaluation item.

**Magazine Publishers of America Witness Sander Glick
Responses to Interrogatories of USPS**

Excluding sector segment and DPS letters from the “Letters Delivered” route evaluation item would also facilitate more appropriate comparisons of rural CCS data and National Mail Count data. For example, if I had excluded DPS and sector segment volumes from the rural CCS letter volumes when I compared the cost distributed per “Letter Delivered” piece and cost distributed per “Flat Delivered” piece the anomaly in my testimony would have been somewhat smaller. Specifically, after excluding DPS and SS letters from the distribution key for the “Letters Delivered” route evaluation item, the cost distributed per flat is 15.3 percent higher than the amount rural carriers are paid to deliver one flat while the cost distributed per letter delivered is only 9.6 percent higher than the amount rural carriers are paid to deliver one letter (See Table 1).

Table 1. Cost Distributed per Piece and Carrier Pay per Piece after Postal Service’s Mail Shape Adjustment

Evaluation Item	Cost (\$000s)	Volume (000s)	Cost Distributed Per Piece	Carrier Pay Per Piece	Difference
	[1]	[2]	[3]=[1]/[2]	[4]	[5]=([3]-[4])/[4]
Letters Delivered	450,698	14,810,218 ¹	3.0 cents	2.8 cents	9.6%
Flats Delivered	753,785	13,146,349	5.7 cents	5.0 cents	15.3%

¹According to the National Mail Count, approximately 22.5 percent (165,695/737,031) of rural letters are DPS or sector segment letters. LR-H-29 at I-5.

There is one reason why the anomaly exists even after excluding DPS and sector segment letters from the cost distributed per piece calculation. When making the mail shape adjustment, the Postal Service used September Rural CCS volumes rather than annual volumes. By using September Rural CCS volumes rather than annual volumes, the Postal Service distributes too much costs to flats because flats make up a higher percentage of letter/flat volume in September than they do for the fiscal year as a whole. Docket No. R90-1, USPS-T-13 at F-24-25; Docket No. R94-1, USPS-T-14, Workpaper B-10, W/S 10.0.3.

**Magazine Publishers of America Witness Sander Glick
Responses to Interrogatories of USPS**

Updating Exhibit MPA 3-1 with the 58.01 percent figure referred to in USPS/MPA-T3-1(b), yields a mail shape adjustment that recodes one out of every 6.34818 letters as flats. To achieve this adjustment while recoding no letters as flats for subclasses with no Rural CCS flat volumes, the mail shape adjustment requires recoding one out of every 6.04763 letters as flats for subclasses containing both flats and letters.

1 CHAIRMAN GLEIMAN: Does any participant have
2 additional written cross-examination for the witness?

3 [No response.]

4 CHAIRMAN GLEIMAN: If not, that leads us to oral
5 cross. The Postal Service is the only party that requested
6 oral cross-examination of this witness. Does anyone else
7 wish to cross-examine?

8 [No response.]

9 CHAIRMAN GLEIMAN: If not, Ms. Duchek, when you're
10 ready.

11 MS. DUCHEK: The Postal Service has no
12 cross-examination.

13 CHAIRMAN GLEIMAN: And I don't believe there are
14 any questions from the bench.

15 And that means there's no redirect.

16 And, Mr. Glick, we want to thank you for coming
17 back today. Again, we appreciate your appearance and your
18 contributions to our record, and if there's nothing further,
19 you're excused.

20 [Witness excused.]

21 CHAIRMAN GLEIMAN: Our next witness is a Dow Jones
22 witness.

23 Mr. McBride, when you're ready.

24 MR. McBRIDE: Thank you, Mr. Chairman. At this
25 point Dow Jones & Company, Inc., calls William B. Shew.

1 Whereupon,

2 WILLIAM B. SHEW,
3 a witness, was called for examination by counsel for Dow
4 Jones & Company, Inc. and, having been first duly sworn, was
5 examined and testified as follows:

6 DIRECT EXAMINATION

7 BY MR. McBRIDE:

8 Q Please state your name and title for the record.

9 A I'm William B. Shew. I'm currently a visiting
10 scholar at the American Enterprise Institute.

11 Q Mr. Shew, I've put before you a copy of a document
12 entitled Direct Testimony of William B. Shew on behalf of
13 Dow Jones & Company, Inc., and denominated DJT-1. Did you
14 prepare that testimony for submission in this proceeding?

15 A Yes, I did.

16 Q If you were to testify today, would your testimony
17 be the same as that document?

18 A Yes, it would be.

19 Q Do you have any corrections or changes to make to
20 that document?

21 A No.

22 MR. McBRIDE: Mr. Chairman, I move the admission
23 of DJT-1.

24 CHAIRMAN GLEIMAN: Are there any objections?

25 Hearing none, Mr. Shew's testimony and exhibits

1 are received into evidence, and I direct that they be
2 transcribed into the record at this point.

3 [Direct Testimony and Exhibits of
4 William B. Shew, DJ-T-1, was
5 received into evidence and
6 transcribed into the record.]

7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

DJ-T-1

RECEIVED

BEFORE THE
POSTAL RATE COMMISSION Dec 30 1 20 PM '97
WASHINGTON, D.C. 20268-0001
OFFICE OF THE SECRETARY

POSTAL RATE AND FEE CHANGES, 1997)
_____)

DOCKET NO. R97-1

DIRECT TESTIMONY OF
WILLIAM B. SHEW
ON BEHALF OF
DOW JONES & COMPANY, INC.

Michael F. McBride
Samuel Behrends, IV
Brenda Durham
Joseph H. Fagan
LeBoeuf, Lamb, Greene & MacRae, L.L.P.
1875 Connecticut Avenue, N.W., Suite 1200
Washington, DC 20009-5728
(202) 986-8000 (Telephone)
(202) 986-8102 (Facsimile)

Attorneys for Dow Jones & Company, Inc.

December 30, 1997

Table of Contents

	<u>Page</u>
Autobiographical Sketch	1
Purpose and Scope of Testimony	1
I. Why Good Cost Information is Important for Good Rate Regulation	4
II. The Variability of Cost with Respect to Volume	10
A. Data	11
B. Choice of Variables	13
C. Scope of Data Analysis	17
III. Attributing Mail Processing Labor to Individual Postal Services	18
A. Reasonableness of Assumptions	21
1. Automation Backup	23
2. Automation Refugees	24
B. Testing	25
C. Data Demands	27
D. Obtaining Better Cost Estimates	28
Conclusions	31
Exhibit DJ-1: Vita of William B. Shew	

1 **Direct Testimony of William B. Shew**

2 Autobiographical Sketch

3 My name is William B. Shew. I am currently a Visiting Scholar at the American
4 Enterprise Institute for Public Policy Research, where my research centers on regulatory
5 economics. I have worked with government agencies and regulated organizations, here
6 and abroad, on methods for improving performance in regulated industries.

7 After teaching economics at the University of London, I became a Vice President
8 of National Economic Research Associates, a Director of Putnam, Hayes & Bartlett, and
9 Director of Economic Studies at Arthur Andersen. I have analyzed cost and price issues
10 in a number of regulated industries, including telecommunications, energy, transportation
11 and the media. In the Postal Rate Commission's Docket No. MC95-1 on classification
12 reform, I testified on appropriate economic principles for designing postal rates and, in
13 particular, the important role service definition plays in efficient pricing of postal
14 services. At the American Enterprise Institute, I am currently completing a study that
15 evaluates federal regulation of communications markets. My resume is attached as
16 Exhibit DJ-1.

17 Purpose and Scope of Testimony

18 The USPS is advocating changes in postal rates based in part on a new
19 methodology for estimating the mail processing costs of individual postal services. The
20 new methodology consists of two principal building blocks constructed by consultants to
21 the USPS, Professor Bradley of George Washington University and Mr. Degen of

1 Christensen Associates. Professor Bradley has estimated how the direct labor and
2 overhead costs of mail processing vary with mail-processing volumes aggregated over all
3 classes of mail. Mr. Degen has taken those estimates and distributed them across
4 individual mail services, using various assumptions. The new methodology produces cost
5 estimates for individual postal services that often differ noticeably from the estimates
6 produced by the traditional methodology that the USPS has used in the past.

7 I have been asked to assess the new methodology for estimating the mail
8 processing costs of postal services and to evaluate its suitability as a basis for developing
9 new postal rates. To that end, I have reviewed the methodology to determine whether it
10 seems reasonable and consistent with the principles recognized in economics for properly
11 measuring service costs. In performing my review, I have drawn on my experiences
12 estimating service costs in regulated industries and in working with companies and
13 regulatory agencies to develop the cost information necessary for rate regulation to work
14 well.

15 To preview my conclusions,

- 16 1. Professor Bradley and the USPS are to be commended for empirically investigating
17 how mail processing costs vary with volume, instead of simply assuming "100 %
18 variability" – an assumption that this important research reveals to be quite wrong.
- 19 2. In contrast to Professor Bradley's study, Mr. Degen's contribution, on the
20 challenging task of identifying the mail processing costs of individual service
21 subclasses, relies far less on empirical investigation, and instead makes extensive

- 1 use of assumption. Less than half of his cost assignments to individual services
2 appear to have a basis in fact, and the majority of costs are assigned to service
3 classes on the basis of untested, seemingly arbitrary assumptions.
- 4 3. For his assumptions to be correct, the cost of mixed mail and of staff not handling
5 mail in any one cost pool must be (a) unrelated in any informative way to the
6 activities in any other cost pool and (b) distributed identically to the documented
7 costs within the cost pool. Mr. Degen does not offer a reason that should be so, and
8 I cannot think of one.
- 9 4. Using arbitrary assumption to allocate costs to services should not be confused with
10 actually measuring the costs of individual services and does not provide a sound
11 basis for developing rates. Simply "assuming" what the costs of services are
12 constitutes a determination not of cost but of cost-recovery, which usurps the
13 regulator's role of deciding how costs should be recovered that are not clearly
14 identifiable with individual services.
- 15 5. The USPS should be strongly encouraged to develop data to determine the costs
16 caused by each service subclass, something that need be no more onerous than the
17 current system for collecting cost information, which does not always seem well
18 suited to identifying service costs.
- 19 6. In the meantime, the Postal Rate Commission may want to consider whether some
20 better cost foundation is available for developing rates in the current case. One
21 possibility is to retain the USPS's cost study, but to eliminate its speculative

1 allocations, classifying as institutional costs all costs not clearly identifiable with
2 individual service classes. Or one might seek a middle ground between that and the
3 Postal Service's proposal to rely extensively on untested assumptions. That would
4 mean a methodology that, although not free of assumptions, makes better use of
5 existing information and yields results that are less sensitive to untested
6 assumptions than the methodology advanced by the Postal Service.

7 The organization of my testimony is straightforward. I will begin with some
8 insights that economics provides into the kind of cost information needed for good rate
9 regulation. After reviewing the key role that costs should play in setting prices, I will
10 discuss important differences between service cost as measured by causal responsibility
11 and the pseudo costs that emerge from assumption-driven cost allocations. With that as a
12 backdrop, I will offer some thoughts on the new USPS cost methodology, and suggest
13 ways to develop a firmer cost foundation for rate-making.

14 I. Why Good Cost Information is Important for Good Rate Regulation

15 On the rare occasions that economists exhibit anything resembling religious
16 fervor, they are likely to be declaiming on the working of the price system. As viewed by
17 economists, prices do far more than merely lighten the pocket or purse. They play a vital
18 role in determining how efficiently the economy makes use of its resources. Prices
19 influence the demand for individual goods and services and how that demand is
20 distributed across competing suppliers. If prices do not suitably reflect cost, the danger
21 arises that purchasers will consume too much of one good and too little of another, or

1 take their business to less efficient suppliers, with the result that the economy's limited
2 resources are not efficiently used.

3 A simple example may be helpful to illustrate (1) the impact of prices on the
4 efficiency with which resources are used and (2) the measure of cost relevant to providing
5 customers with appropriate price signals. Suppose that oranges and pears each require \$1
6 of real resources to produce, but oranges are priced at \$.50 and pears at \$2. At a \$.50
7 price, consumption of oranges would be wastefully excessive, since consumers to whom
8 oranges are worth as little as 50 cents would be encouraged to buy them, even though
9 each one absorbs \$1 of the economy's resources to be produced. As for pears, pricing
10 them at \$2, well above their \$1 cost, would also be wasteful, since it would discourage
11 consumers from buying pears that they value more than their production cost. Thus,
12 prices that do not appropriately reflect cost can lead to a costly waste of resources, by
13 unduly encouraging or discouraging consumption.

14 The appropriate relationship between service cost and price depends on a number
15 of considerations. In industries with high fixed costs, setting prices above variable costs
16 may be necessary if a supplier is to recover all its costs. And for services creating
17 spillover benefits for society, a strong case exists for setting lower prices than otherwise
18 would be appropriate. These considerations, along with others that Congress insisted be
19 taken into account in setting postal rates, all affect the efficient relationship of prices to
20 costs. But each service's true cost – the cost that would be avoided if the service were
21 not offered – is inevitably the appropriate point of departure in establishing suitable

1 service rates. If service costs are not known accurately, then no sound basis exists for
2 setting postal rates.

3 The cost measure relevant to giving customers suitable price signals is the cost
4 actually *caused* by providing a service, which can differ sharply from the cost that is
5 “allocated” or “distributed” or “attributed” to a service. The cost caused by the service –
6 the cost that would be avoided if the service were not provided – constitutes the bedrock
7 information necessary to formulate fair and efficient prices.

8 Measuring service costs accurately can be impeded by several complications.
9 Consider the matter of service definition. The costs incurred in providing seemingly
10 identical postal services can differ markedly. For instance, the cost of transporting a
11 letter 700 miles can depend on whether its destination is Chicago or Cedar Rapids.
12 Defining services narrowly enough to produce (practically) identical costs within a
13 service category would necessitate an impractically large proliferation of defined
14 services.

15 A closely related issue is how best to define service volumes in a cost analysis.
16 Since the focal question about cost is how it is affected by a change in service volume, a
17 decision must be made about whether the quantity of a postal service is most
18 meaningfully measured by (say) the number of pieces, their aggregate weight; their
19 aggregate transport distance, or (more likely) some combinations of those and other
20 factors.

1 While these are matters that must be confronted in quantifying a complex cost
2 structure, they present no real obstacles to obtaining the cost information necessary for
3 efficient service pricing. True, they require good practical judgment in order to obtain an
4 accurate portrayal of the cost conditions of the regulated firm. But the need for a
5 thoughtfully designed study should not be an obstacle to reliably ascertaining service
6 costs.

7 When serious impediments to accurately determining service costs do arise, their
8 source almost invariably is a lack of adequate data to identify the costs that are caused by
9 each individual service. The remedy is straightforward. First, identify the data that
10 would permit individual service costs to be accurately quantified. Then set up a system
11 to collect and compile the needed data.

12 Doing that, admittedly, requires work. Data requirements can most safely be
13 identified by designing the cost analysis in advance – specifying the service definitions to
14 be used in the analysis, the variables that will be employed to explain costs, the level of
15 aggregation at which service volumes will be related to costs, and so forth. Then there is
16 the chore of establishing a system to collect and compile the necessary data. None of that
17 is easy. But then, neither is the current set of arrangements for collecting cost data and
18 using assumptions to construct large, complex models to allocate costs. In short, the
19 excuse is becoming threadbare that arbitrary cost allocations must continue because no
20 one has collected the data to determine actual cost causality.

21 As the shortcomings of “allocated” or “distributed” costs have become more
22 widely recognized, there has been a movement within regulated industries to develop data

1 enabling better estimates of service costs. The techniques formerly employed to allocate
2 costs in multiproduct regulated industries are capable of attributing a wide range of cost
3 to any particular service, depending upon the particular assumptions adopted about how
4 costs "should" be allocated and book-keeping conventions, which influence the nature of
5 the cost records that are available.¹ Of course, the true cost of a service does not change
6 with the assumptions adopted. Yet in effect that happens when the facts necessary to
7 determine cost responsibility have not been gathered. For then, the costs recognized for
8 the purpose of regulating rates reflect the assumptions chosen to allocate costs. If service
9 costs are arbitrary, service prices cannot help but be arbitrary as well. And arbitrary
10 service prices are poorly suited to provide customers with the signals that promote
11 efficient use of resources.

12 In short, the value of accurate cost information is hard to overestimate. It is
13 essential in order to set service prices that comport with the statutory standards and
14 encourage Postal Service customers to make economically efficient choices. A cost study
15 relying heavily on untested assumptions is likely to lead to costly waste. In addition,
16 inaccurate cost estimates can be unfair, by leading to overcharges to some customers at
17 the same time that prices to other customers are lower than the true costs that they impose
18 on the system.

19 Private sector for-profit firms understand well the importance of obtaining
20 accurate cost information, as opposed to simply making assumptions about how much

¹By book-keeping practices, I mean the way that data on costs are collected and organized. For example, if the MODS system were replaced by some different system for classifying activities for the purposes of

1 each service contributes to their total costs, since accurate knowledge of service costs is
2 essential to determine profit-maximizing prices. More important yet, in a highly
3 competitive market a firm's very survival can depend on the accuracy of its cost
4 information, since pricing even slightly above or below cost in such an environment can
5 lead quickly to financial insolvency.

6 Regulated monopolies have traditionally lacked such direct incentives to obtain
7 accurate information about individual service costs. Many such organizations have been
8 subject to profit regulation, which eliminates or at least greatly reduces the value of cost
9 information for the purpose of setting profit-maximizing prices. And many regulated
10 organizations have been insulated from competition by a combination of natural
11 monopoly cost conditions and regulatory barriers that make it difficult or impossible for
12 other companies to compete with them.

13 But much of that is changing. New technology is breaking down barriers to
14 competition. And government policy is increasingly loathe to protect "natural"
15 monopolies from competition, whether through outright entry barriers or by saddling new
16 entrants with cost disadvantages. If regulated firms are prudent, therefore, they will
17 growingly emulate their private sector counterparts in the pursuit of accurate cost
18 information on which to base prices. And they should not procrastinate. When regulated
19 companies wait until substantial inroads have been made by competitors before beginning
20 an earnest reform of their operations, it can be too late.

recording cost, that change would probably alter the distribution of cost allocations across services, even though correctly measured costs should not be affected.

1 II. The Variability of Cost with Respect to Volume

2 The USPS is to be commended for supporting an empirical investigation of how
3 mail processing costs vary with volume. The easier, but less virtuous, course of action
4 would have been simply to continue to assume that these costs vary in equal proportion to
5 volume – an assumption that this investigation reveals to have been quite wrong. The
6 new study, which was performed by Professor Bradley of George Washington University,
7 provides many interesting insights into cost causation, and one can only hope that its
8 replacement of assumptions with extensive data analysis will provide a model for future
9 studies of postal service costs.

10 Professor Bradley finds that most mail processing costs do not increase as rapidly
11 as the volume of mail being handled. That discovery should not be surprising, since it is
12 consistent with the traditional belief that there are economies of scale in providing postal
13 services. He estimates the “variability” of costs – the proportional increase in cost
14 relative to volume – for each of 28 categories of mail processing labor costs.² If cost
15 increased in the same proportion as volume, as assumed in the past, then the “variability”
16 of cost would be 100%. His variability estimates range from 15% (registry) to 100%
17 (remote encoding).³ Confining attention to MODS sorting activities, the estimated
18 variability of cost ranges from 40% (manual parcels) to 95% (BCS).⁴ Overall, of the 25
19 cost elasticities he estimates for mail processing activities, the majority fall within the

²“Variability” is used as a synonym for the elasticity of cost with respect to pieces of mail handled, which is measured by $(\delta C/\delta M)M/C$, where C is cost and M is a suitable measure of mail volume. As I will discuss later, the labor cost that is measured by Bradley, following traditional USPS practices, is labor hours, not payroll costs.

³USPS -T-14, Table 1 at 9.

⁴USPS -T-14, Table 7 at 54.

1 range of 45% to 80%.⁵ All of his estimates are quite precise, indicating that there is little
2 uncertainty about the variability of mail processing costs.

3 His study is notable for its size, consisting as it does of many interrelated steps
4 and a myriad of data details and technical tests. Discussing every facet would run the risk
5 of generating more boredom than illumination among those who are not econometrics
6 devotees. So it seems to me the better course of action is to focus on some of the
7 particularly notable features of the study.

8 A. Data

9 The study makes use of extremely large bodies of data. To analyze the volume-
10 variability of cost, Professor Bradley has designed separate analyses to deal with (1)
11 Direct MODS costs, (2) Allied MODS costs, (3) BMC costs and (4) Remote encoding
12 and registry. (The cost of "Allied" activities in MODS offices must be analyzed
13 separately because there is no direct measure of pieces of mail handled available for
14 them, as there is for "Direct" MODS costs).⁶ The MODS data are drawn from 300 sites,
15 with nine years of monthly observations of mail processing costs and of the factors that
16 help to explain costs. The BMC data cover eight years of monthly observations from
17 each of the 21 Bulk Mail Centers. The data available to estimate the cost variability of
18 remote encoding and registry are necessarily less extensive, because (a) the output
19 measure used for registry is a national total available only quarterly, and (b) remote

⁵USPS -T-14. Table 1 at 9.

⁶ A direct measure of pieces handled can be unavailable either because total pieces handled in an activity is not recorded, as is the case for manual sack sorting and bulk presort, or because there is no within-activity measure of total pieces handled that would provide a meaningful measure of the activity's output, as is the case for general activities that provide support to a broad range of specific mail processing activities.

1 encoding was introduced only recently, with the result that data from many sites are not
2 available earlier than 1996. But even in the instance of these smaller data sets, the
3 estimated cost equations fit the data very well, and the estimates of cost variability appear
4 to be quite reliable.

5 The opportunity to draw upon a large, rich body of data is of considerable value in
6 estimating cost variability. The richness of the data is due in part to the variation in the
7 scale of mail processing operations between the largest and smallest sites at each point in
8 time, and also volume variations over the time period spanned by the data (usually 9
9 years). Being able to observe the costs of many different scales of mail processing
10 facilitates establishing the precise shape of the relationship between total pieces of mail
11 handled and cost.

12 The large number of observations on cost and total pieces handled that Professor
13 Bradley analyzes also contributes significantly to the reliability of his results. The larger
14 the size of a sample, the smaller is the probability that the sample is unrepresentative of
15 the population it is intended to stand in for. In the current instance, the objective is to use
16 sample data to determine how cost varies with the volume of mail processed by the Postal
17 Service. Professor Bradley's large data sets make it extremely unlikely that the
18 combinations of cost and scale that he observes are atypical.⁷

19

⁷By way of analogy, suppose one wants to quantify how weight varies with height in the population. A random sample of only two people might produce a tall person and a short person who weigh the same, misleadingly suggesting that increases in height are not associated with increases in weight. But as the size of the sample is expanded, the probability of mischaracterizing the general relationship between height and weight due to an atypical sample diminishes very rapidly.

1 B. Choice of Variables

2 To determine the variability of mail-processing cost, it is necessary to select
3 measures of the cost and output of mail processing activities. That task is more difficult
4 than it may appear, since in many activities there are several ways that cost and output
5 could be measured, and the most relevant measures do not always have good data.⁸ It is
6 also necessary to identify the factors other than output that could also influence the cost
7 of mail processing, since they must be taken into account in the analysis if the
8 relationship between cost and output is to be identified correctly. The choice of variables
9 to be used in the analysis inevitably involves practical considerations and the exercise of
10 judgment.

11 An example is provided by Professor Bradley's decision to measure labor costs by
12 hours rather than compensation. Hours are the traditional measure of mail processing
13 costs, but in other industries labor costs are more commonly measured by the
14 compensation paid to labor. Since the cost whose variability Professor Bradley has been
15 asked to determine is *monetary* cost, compensation would be a natural measure of cost
16 here. Professor Bradley uses hours to measure labor costs because, he explains, accurate
17 information on compensation in each mail processing activity was not readily available.⁹
18 Foregoing the theoretically superior cost measure is never an easy choice to make, and
19 points to the need for the Postal Service to consider redesigning its data collection

⁸For example, the labor cost of an activity can be measured by the physical quantity of labor spent performing the activity (e.g., total man-hours), or by a monetary measure of labor input (e.g., wage costs or total labor compensation, including fringe benefits, pension and so forth). The output of a mail-processing activity can be measured in the aggregate, such as by total pieces handled, or by a disaggregate measure, such as the pieces handled of each type of mail.

1 activities, a matter to which I will return later. But the practical impact of measuring
 2 labor costs in hours instead of compensation is probably small, if compensation rates for
 3 clerks and mail handlers do not vary over a wide range.

4 Output is measured in the study by the pieces handled in an activity, except in
 5 those activities where a more meaningful measure of output exists (e.g., registry, remote
 6 coding). For the "allied" activities that support sorting activities at MODS offices, output
 7 is measured by the volume of mail sorted by each of the activities being supported. For
 8 allied activities, therefore, cost is causally related to multiple outputs, instead of the
 9 single output (total pieces handled) used to describe the scale of sortation activities.

10 In order to identify correctly the relationship between cost and output, it is
 11 necessary to control for factors in addition to current output that may have influenced the
 12 labor hours spent in each activity. The factors that Professor Bradley's analysis generally
 13 takes into account include time trends, the share of the mailstream that is processed
 14 manually and output in earlier periods.¹⁰

15 Past Output Explaining current cost partly by past output levels is appropriate if
 16 – as is often the case in industry – staffing is adjusted only gradually to changes in
 17 output. Professor Bradley's analysis reveals that past output as well as current output has

¹⁰On page 13 of his direct testimony, he says "I would have had to construct an *estimate* of the average wage paid in that activity, at each site, in each accounting period." (Emphasis supplied.)

¹¹The share of the mailstream processed manually is omitted in the analysis of BMC costs and the costs of "allied" activities that support sortation. Bradley feels that BMC operations have not experienced a diversion of mail from manual to automated activities, implying that the manual variable would add nothing to the analysis. Since the cost of allied activities at MODS offices is explained by reference to the total pieces handled in each of the major sorting activities (manual letter, manual flat, mechanized letter, mechanized flat and automated letter sortation), incorporating an additional measure of the proportion of the mailstream that is manually processed would appear to be redundant.

1 a statistically significant effect on current cost, confirming that the full adjustment of
2 staffing to changes in mail processing work loads does not occur immediately.¹¹

3 Technology To take into account the possibility that technological change may
4 have altered the labor cost of mail processing activities, Professor Bradley includes in his
5 analysis the proportion of the mail stream that is manual and two time trends.¹² If
6 suitable data had been available, it would have been interesting to examine how labor
7 cost has been influenced by the dollar value of investments in plant and equipment
8 associated with each mail processing activity. Those expenditures reflect pertinent
9 developments (e.g., replacing simple automation equipment with more sophisticated
10 equipment having a greater labor-saving potential) that may not be fully captured by
11 either the proportion of mail being manually processed or a time trend. A further
12 advantage is that one could then obtain a direct estimate of the amount of labor saved for
13 each dollar of investment, providing an objective, system-wide basis for evaluating
14 whether the scale of investments appears to be consistent with minimizing the total cost
15 of the Postal Service's operations.

¹¹Consider, for example, the equation he estimates to explain the cost of sorting manual flats, which is reported in Table 7 of his direct testimony. The coefficients on current pieces handled and past pieces handled are, respectively, 0.75 and 0.12, indicating that sortation costs adjust only gradually to changes in the number of pieces handled.

¹²In addition to serving as a general indicator of technological change, the proportion of mail that is manually processed may affect labor productivity in mail processing in some quite specific ways. It is believed that the mail migrating to automated processing has tended to be mail that has been less costly to process manually than other mail because of such factors as typed addresses presented in conventional form, zip codes, and volume mailings ordered by zip code. As more and more mail migrates out of manual processing, the ease of handling of the mail that remains is felt to continuously decline. That trend is reinforced by the routing to manual processing of the mail that is rejected by automated processing activities, which tends to present unusually difficult sorting challenges. In addition, manual processing is used as a backup to handle overflows when automated processing is stretched to capacity. If manual operations are staffed to handle peak overflows, average labor productivity in manual processing will be adversely affected and the decline in productivity is likely to increase with the size of the largest potential

1 But even the relatively simple formulation used by Professor Bradley yields some
 2 interesting conclusions about labor productivity trends. In the majority of mail
 3 processing activities, he finds, labor productivity increased from 1988 to 1992, but has
 4 declined since then, holding constant other factors such as mail volume. The cause of the
 5 reversal in productivity is not revealed by his analysis, but it seems quite pervasive.
 6 Confining attention to statistically significant productivity trends, between 1988 and 1992
 7 eight mail processing activities showed gains and five showed declines. But between
 8 1992 and 1996, only two categories showed gains, while eight exhibited declines.

9 Table 1: Number of Activities Showing Productivity Gains and Declines

	<u>MODS</u> <u>Sortation</u>	<u>MODS</u> <u>Allied</u>	<u>BMC</u> <u>Sortation</u>	<u>BMC</u> <u>Allied</u>	<u>All</u> <u>Activities</u>
<u>1986-1992</u> gains	5	2	1	0	8
declines	4	1	0	0	5
1993-1996 gains	0	0	2	0	2
declines	2	4	3	1	10

10 Source: Bradley, Tables 7-10, pp. 54, 63, 65, 67.

11 His other indicator of the march of technology is the proportion of the mailstream
 12 handled manually. Declines in that proportion, according to his results, are associated
 13 with falling labor productivity in manual sorting activities and increasing labor
 14 productivity in some other sortation activities.

overflows, which in turn will increase as an increasing proportion of the mailstream is destined for automated processing.

1 C. Scope of Data Analysis

2 Professor Bradley's analysis includes a variety of features and diagnostic checks
3 aimed at ensuring that his results are accurate, and not an artifact of erroneous data or
4 faulty analysis. There seems little point in surveying here the measures he has taken to
5 ensure reliable results, since his direct testimony already provides as clear an account as
6 can be expected, given the subject matter. Nevertheless, it may be useful to provide an
7 example of what seems to me his commendable care in handling and analyzing the data.

8 An example of particular interest is his approach to identifying the shape of the
9 curve relating cost (labor hours) to the volume (e.g., total pieces handled) of mail
10 processing. It is the shape of that curve that lies at the heart of the cost variability of mail
11 processing, so it is extremely important that the analysis applied to the data be capable of
12 identifying the shape of the curve correctly. That task is not as easy as might be
13 imagined. It is common practice to select three or so simple forms of equation (e.g.,
14 linear, log-linear, quadratic). and choose the one that appears to fit the data best. But
15 simple forms have limited suppleness, and so even the best of the tested equations may
16 not fit some parts of the data well. For instance, an equation that does a good job of
17 predicting costs for outputs close to the sample mean may badly predict the costs of very
18 small and very large scale operations. Yet for a growing organization, it is particularly
19 important to have accurate information on costs at relatively high output levels.

20 Professor Bradley's study estimates a relationship between output and cost whose
21 mathematical form is quite complex, a complexity that allows the curve relating cost and

1 output to take on almost any shape, as dictated by the data.¹³ His results indicate that
2 using the flexible functional form was warranted, since a number of the terms in his
3 equation that would not appear in a simpler functional form do turn out to be statistically
4 significant.

5 All in all, there can be little doubt that this study of cost variability constitutes a
6 major step forward in improving understanding of the factors driving Postal Service
7 costs. Its usefulness as an analytic tool might be further expanded if, in future versions of
8 the study, the labor cost of mail processing were measured in dollar terms as well as
9 hours and if the investment in plant and equipment associated each activity at each site
10 were included as explanatory variables. But the study in its current form more than
11 adequately establishes the variability of costs, and the size of the data sets and the
12 thoroughness of the analysis provide ample reason to be confident that the results are
13 reliable.

14 III. Attributing Mail Processing Labor to Individual Postal Services

15 Mr. Degen has been courageous enough to accept the unenviable task of trying to
16 determine the labor costs of mail processing for individual postal services. The
17 information that he draws upon is capable of identifying only to a limited extent the costs
18 of individual services, leaving a large residual of costs that must be either allocated to
19 individual services on the basis of one assumption or another, or classified as institutional

¹³The functional form he fits, often referred to as a translog function, makes the log of the dependent variable (in this case labor hours) a quadratic function of the logs of the explanatory variables.

1 costs. He chooses to attribute the costs to individual services by applying a number of
2 assumptions.

3 His point of departure is to partition mail processing costs into 49 cost pools.¹⁴
4 Each is intended to reflect a relatively homogeneous set of mail processing activities.
5 Within each cost pool, the services responsible for some costs are documented. (These
6 costs are sometimes referred to as "direct" costs.) In addition to the documented costs of
7 individual services, there are two categories of cost for which information is insufficient
8 to identify service responsibility. One is the cost of processing uncounted mixed mail.
9 The other is the cost of staff observed "not handling mail," which may mean that an
10 employee is on a break, clocking in or out, or at a work station apparently not doing
11 anything.

12 Mr. Degen's chief task is to decide how the costs not identified with any
13 individual service should be distributed across individual mail subclasses, special services
14 and the general category of institutional costs. His proposed solution is to develop and
15 apply various assumptions about how such costs ought to be allocated to individual
16 services.

17 His central assumption I will refer to, in the interests of brevity, as the CPP
18 assumption, standing for Cost Pool Proportionality. According to that assumption,
19 broadly speaking, a service's responsibility for pool costs not identified with any
20 particular service (the costs of mixed mail and of not handling mail) is proportional to the

1 service's responsibility for documented (i.e., "direct") costs within the pool. For mixed
2 mail, his application of the proportionality rule quickly becomes complex. Uncounted
3 mixed-mail items are distributed in proportion to the direct costs for items of the same
4 type in the cost pool.¹⁵ (Sixteen categories of item type are defined). Thus, a service
5 accounting for (say) 20% of the documented costs for a particular cost pool and item type
6 (e.g., LSM sorting, flat trays) is assumed to be also responsible for 20% of the costs of
7 uncounted mixed mail attributed to that pool and item type. Similar assumptions are
8 adopted to distribute the costs of unidentified containers.¹⁶ Finally, a service's
9 responsibility for a pool's costs of staff not handling mail is assumed to be proportional
10 to the sum of the service's documented costs and its allocation of mixed mail costs within
11 the pool.

12 As a general matter, whether a study is judged to rely inordinately on assumptions
13 depends on whether the assumptions appear reasonable in light of known fact, whether
14 they have been tested and how significant a role they play in the analysis. Assumptions
15 that are informed by fact are of less concern than assumptions seemingly invented out of
16 thin air and undisturbed by empirical testing. And minor assumptions are obviously of
17 less concern than assumptions that dominate a study's conclusions.

¹⁴The cost pools for MODS offices are defined in terms of groups of related operation codes. BMC and non-MODS cost pools are defined in terms of various combinations of function, activity and machinery type.

¹⁵If the cost pool contains no documented costs for items of the same type, those mixed mail costs are allocated in proportion to the distribution of documented costs of the same type observed after aggregating across all cost pools. The cost of mixed mail in "identified" containers is allocated on a volume basis to mail categories defined by shape and item type. Information on the distribution of subclasses conditional on shape and type is then used to allocate these costs to subclasses.

¹⁶The cost of unidentified containers is allocated to subclasses in proportion to the direct container costs plus identified containers of the same type.

1 In evaluating a methodology that consists largely of assumptions, it seems
2 appropriate to address three basic questions. Do the assumptions seem reasonable in light
3 of known facts? Have the assumptions been subjected to any sort of testing? Does
4 application of the assumptions call for information that is not available? Judged by these
5 criteria, it appears to me that Mr. Degen's methodology has weaknesses that are difficult
6 to ignore.

7 A. Reasonableness of Assumptions

8 Mr. Degen's direct testimony does not seem to offer a rationale for his central
9 assumption.¹⁷ The CPP assumption might, I suppose, be seen as a complicated, cost
10 pool-specific variation on the assumption frequently used in IOCS analysis that a
11 service's responsibility for mixed mail and staff not handling mail is equiproportional to
12 the service's aggregate documented (i.e., "direct") costs. Previous analysis has shown,
13 though, that even on a system-wide basis, the distribution of counted mail items differs
14 markedly from the distribution of mixed mail and, not surprisingly, a bias exists against
15 counting items that (a) contain numerous pieces or (b) are subject to tight dispatch
16 schedules.¹⁸ If even on a system-wide basis a service's documented cost does not predict
17 well the mixed mail cost for which it is responsible, it seems unlikely to be a good
18 predictor for each of the hundreds of combinations of cost pools and item or container
19 types examined by Mr. Degen.

¹⁷His testimony does contain the statement (page 10) that his assumptions constitute a refinement of the existing mixed-mail methodology. George Stigler, a Nobel laureate in economics, once remarked that "refined" is a term that economists reserve to distinguish their own work from that of their peers. In any event, the relevant question here would seem to be not whether the new assumptions are in some sense a

1 For the CPP assumption to be correct, a remarkable set of coincidences would
2 have to occur. Broadly speaking, within each of the cost pools examined by Mr. Degen,
3 every service subclass would have to have an identical ratio of its documented cost to the
4 costs it contributes to uncounted mixed mail (by item or container type) and also an
5 identical ratio of its contribution to the cost of not handling mail to its documented plus
6 allocated mixed mail costs. If there is a reason for that to occur, it is not mentioned by
7 Mr. Degen and I cannot think of what it would be. Indeed, staff "not handling mail,"
8 which accounts for some 40% of all mail processing costs, remains something of a
9 mystery, and much of it may not be a legitimate cost of *any* service.

10 Even though Mr. Degen's central assumption lacks a rationale, it has an
11 overwhelming influence on the results. By itself, the CPP assumption plays a weightier
12 role than facts (documented costs) in determining the mail processing costs imputed to
13 services. The majority of the costs that Mr. Degen attributes to individual services reflect
14 this apparently arbitrary assumption.

15 There is a quite general reason to feel skeptical about Mr. Degen's central
16 assumption. The CPP assumption implies that activities in other cost pools provide no
17 useful information on the services responsible for mixed mail and staff not handling mail
18 in a cost pool. But that seems somewhat implausible. For example, it does not seem
19 unlikely that the number of staff not handling mail in (say) a MODS activity would be
20 related to the contemporaneous activity levels of some other MODS groups (e.g., the

refinement, but instead whether there are persuasive reasons to believe that the new methodology allocates costs more accurately than its precursor.

¹⁹Docket No. R94-1 at 3045-3046.

1 manual sorting providing reserves for overflows from automated sorting), while also
2 varying generally with the overall activity level at the facility, insofar as staff can be
3 rapidly deployed from one MODS activity to another in response to work load
4 fluctuations. It may be more realistic, therefore, to view the staff not handling mail in a
5 particular cost pool – insofar as it represents a service cost at all – as being causally
6 related to volumes of mail processed over a much wider range of activities than the
7 particular pool in question.

8 Two examples of wider cost causality can be found in explanations of the rising
9 proportion of mail processing costs accounted for by employees not handling mail. Both
10 examples are consistent with Professor Bradley's statistical conclusion that the
11 diminishing manual proportion of the mailstream appears to be contributing to falling
12 labor productivity in manual sorting activities while raising labor productivity in some
13 other areas. For simplicity, I will refer to the two explanations respectively as automation
14 refugees and automation backup.

15 1. Automation Backup

16 Falling labor productivity in manual sorting activities might be due to manual
17 sorting being staffed sufficiently to be able to handle overflows that occur when peak
18 demands are placed on automated sorting. If manual sorting operations are scaled to
19 provide the reserve capacity to handle peak loads of mail normally sorted automatically,
20 then the more mail that migrates from manual to automatic sorting, the larger is the staff
21 that must be retained in manual sorting operations to provide reserve capacity for
22 overflows from automatic sortation. Thus, personnel routinely observed "not handling

1 mail” in manual operations could represent a hidden cost of mail normally processed by
2 automated sortation, rather than of the mail normally found in manual operations.¹⁹

3 In that event, Mr. Degen’s CPP assumption could be quite badly off the mark. As
4 a result of heavy migration to automatic sortation, the subclasses that now account for
5 relatively few of the direct tallies in manual sortation could nevertheless be responsible
6 for a large proportion of the costs of staff “not handling mail” in manual operations.
7 Indeed, if that cost is essentially the cost of reserve capacity to handle overflows from
8 automated processing, there may be an *inverse* relationship in such instances between a
9 subclass’s direct tallies and its responsibility for the costs of staff not handling mail, just
10 the opposite of the direct relationship assumed by Mr. Degen.

11 2. Automation Refugees

12 To the extent that automation frees up labor, the outcome is either fewer
13 employees or employees spending a smaller proportion of their time doing actual work.
14 Postal Service employees earning more than they could expect from alternative
15 employment will attempt to hold on to their jobs. To the extent that they succeed, the
16 proportion of time spent not handling mail will tend to rise, as has occurred. Moreover,
17 it should not be surprising if USPS managers were to assign underemployed staff to areas
18 where their low productivity is less conspicuous. In short, the rising amount of time
19 spent by clerks and mail handlers “not handling mail” in many cost pools may have much

¹⁹If that is indeed an explanation of idle labor, it raises two related questions. Are the costs of reserve mail-processing capacity being imputed to the mail services responsible for peak period demands, as they should be? There is nothing in Mr. Degen’s analysis that would appear to make that happen. Second, is the Postal Service overinvesting in service reliability? In other words, would customers prefer service that is sometimes slower but less costly?

1 more to do with the general trend towards automating mail processing than with the
2 particular activities of that cost pool. To the extent that staff not handling mail do
3 systematically account for a higher share of some cost pools, the reason may have much
4 less to do with the documented work of the pool than with the pool's capability to make
5 underemployed workers less conspicuous.

6 In summary, there are reasons to feel skeptical of Mr. Degen's central assumption,
7 which constitutes the backbone of his methodology and dominates his results. For the
8 CPP assumption to be correct, the cost of mixed mail and of staff not handling mail in
9 any one cost pool must be (a) unrelated in any informative way to the activities in any
10 other cost pool and (b) distributed identically to the documented costs within the cost
11 pool. Mr. Degen does not offer a reason that should be so, and I cannot think of one.

12 B. Testing

13 Since Mr. Degen's conclusions rely to a very large extent on assumptions, it
14 would be prudent to test the validity of the assumptions, regardless of whether or not the
15 assumptions appear to be reasonable. The question is not whether his assumptions
16 contain errors (it would be an incredible coincidence if they did not), but rather the
17 magnitude of the errors. More than half of the costs that he imputes to services are the
18 result of his CPP assumption, which therefore merits special attention.

19 So far as I have been able to determine, neither Mr. Degen nor anyone else
20 involved in developing this new cost methodology has attempted to test the validity of the

1 assumptions used to distribute all these costs, even though nothing about the assumptions
2 would render testing impossible. It simply has not been done.

3 The failure to test this central assumption is especially troubling because standard
4 testing procedures could have been employed to quantify the magnitude of error. The
5 CPP assumption that mixed mail costs have the same service distribution for each cost
6 pool and item type as direct tallies can be tested directly in several ways. One could draw
7 a random sample of the cost pools used by Degen and, for each selected pool, draw a
8 special random sample of clerks and letter-handlers clocked into the cost pool at
9 randomly selected points in time. For each sampled employee, then, any mixed mail
10 being handled would be fully counted, along with the direct tallies observed in the
11 sample, so that the service distributions of direct and mixed tallies for each sampled pool
12 could be compared to test Mr. Degen's CPP assumption.

13 A more challenging task would be testing the assumption that the cost of
14 employees found not handling mail has the same service distribution within each cost
15 pool as the sum of documented and allocated mixed mail costs. If employees not
16 handling mail represent reserve capacity, called into action when work loads are heavy,
17 then the proportion of employees found not handling mail should systematically fall as
18 output (e.g., total pieces handled) rises towards its peak. Putting aside employees whose
19 assignments involve matters other than handling mail (e.g., selling stamps), the
20 proportion of non-handlers should approach zero at times of peak loads, unless staffing is

1 excessive.²⁰ If that does occur, then the costs of staff kept on the payroll to accommodate
2 peak loads should be imputed to the mail responsible for those peaks, not to some
3 average of peak and off-peak mailstreams.

4 Suppose, instead, that the proportion of non-handlers is discovered not to drop
5 significantly at times of peak loads. That would tend to suggest chronically underutilized
6 labor, whose expense should be assigned to institutional costs, since there is no
7 meaningful sense in which such hours can be said to represent a cost of any postal
8 service. Assigning the cost of chronically excess labor to institutional costs, however,
9 should be regarded as only an interim measure, until staffing can be brought into balance
10 with work loads.

11 C. Data Demands

12 A methodology to estimate service costs is of little value if applying it requires
13 information that is unavailable or unreliable. For in that event, implementation of the
14 methodology will be possible only with a good deal of guesswork. Even if the
15 methodology were intrinsically reasonable, therefore, little confidence could be placed in
16 the results.

17 It appears to me that Mr. Degen's methodology is crippled by being dependent for
18 its execution on information that is often sketchy, when it exists at all. For example,
19 implementing his CPP assumption involves determining distributions of documented

²⁰Insofar as staff can be rapidly deployed from one activity to another in response to work load fluctuations, the number of employees found not handling mail while clocked into any particular activity may be more closely related to a facility-wide contemporaneous measure of activity than to the work

1 costs for each of many hundreds of combinations of cost pools and item and container
2 types. For many of those combinations, there is no sample data whatsoever from which
3 the distributions called for by his methodology might be inferred. And for many other
4 combinations, the samples are so small that inferences about cost distributions are quite
5 unreliable. For instance, hundreds of distributions of documented costs must be inferred
6 from samples containing fewer than five direct tallies.²¹

7 This means that substantial elements of Mr. Degen's attributions of service cost
8 are random. To understand the significance of that randomness, suppose that the Postal
9 Service's operations were identical in every respect year after year, so no changes in
10 service costs or volumes occurred. Mr. Degen's methodology would nevertheless be
11 capable of attributing in successive years quite different costs to the same service. Those
12 random swings would reflect the large uncertainty associated with the small samples
13 whose use is compelled by his methodology.

14 D. Obtaining Better Cost Estimates

15 Whether there are more reasonable and readily implementable assumptions for
16 determining the service responsibility for mixed mail and not handling costs I leave to
17 others to debate. But in the long run, it should be clear that the only satisfactory
18 arrangement is to replace assumption by fact. That means compiling the information
19 necessary to identify the services actually responsible for these costs now allocated by
20 assumption. Arbitrary, untested assumptions such as Mr. Degen uses are poor substitutes

volume within the MODS activity that a sampled employee is clocked into. That provides another reason to be skeptical of the CPP assumption.

1 for facts. Indeed, they are substitutes only in the unhelpful sense that they create the
2 illusion that service costs are known, even though in reality they are not.

3 In the interim, however, the reality is that no one has many of the facts that would
4 help to determine service costs accurately. And so the immediate question to be
5 confronted is whether, if assumptions are to be used, there is a better set of assumptions
6 than those made by Mr. Degen. That is a matter I happily leave to those more
7 knowledgeable about Postal Service operations. My more modest purpose is simply to
8 point out that it is not necessary, even at this late date, to make large cost allocations that
9 are wholly reliant on untested, arbitrary assumptions. True, the testing that can be done at
10 this late date is limited in depth and scope. But even now, information in the hands of
11 those having long experience with Postal System operations and cost data should be able
12 to cast light on the plausibility of Mr. Degen's assumptions and on whether other
13 procedures for dealing with the cost of mixed mail and staff not handling mail might
14 produce better estimates of service costs.

15 The desirability of utilizing whatever limited cost information is available during
16 this proceeding, though, should not obscure the need for more complete information in
17 the future. The USPS should be strongly encouraged to shift its resources from spinning
18 assumptions to developing data that will allow actual service costs to be determined.
19 That effort need be no more onerous over the long run than the current system for
20 collecting cost information, which does not seem well suited to determining service costs.
21 But if that initiative is to succeed, it must begin with a thoughtful specification of how

³¹MPA-T-2, Docket No. R97-1, at 29.

1 service costs will be estimated, in order to identify the precise data that are needed and
2 how they can best be developed.

3 In the meantime, the Postal Rate Commission may want to consider whether some better
4 cost foundation for developing rates is available in the current case. One possibility is to
5 retain the USPS's cost study, but to eliminate its speculative allocations, classifying as
6 institutional costs all costs not clearly identifiable with individual service classes. Or one
7 might seek a middle ground between that and the Postal Service's proposed reliance on
8 untested arbitrary assumptions. That middle ground could be a methodology that,
9 although not free of assumptions, better uses existing information to formulate reasonable
10 assumptions and yields results that are less sensitive to untested assumptions than the
11 methodology advanced by the Postal Service.

1 **Conclusions**

2 The analysis by Professor Bradley is to be commended for investigating
3 empirically how mail processing costs vary with volume, instead of simply assuming
4 “100 % variability” – an assumption that his research reveals to be quite wrong. His
5 painstaking analysis provides solid insights into cost causation, and one hopes that the
6 study’s reliance on extensive data analysis in lieu of assumptions will provide a model for
7 future studies of Postal Service costs.

8 In contrast to Professor Bradley’s study, Mr. Degen’s contribution, on the
9 challenging task of identifying the mail processing costs of individual service subclasses,
10 stands on weaker ground. Less than half of his cost allocations to individual services
11 appear to have a basis in fact, and the majority are based on untested, arbitrary
12 assumptions.

13 For his CPP assumptions to be correct, the cost of mixed mail and of staff not
14 handling mail in any cost pool must be (a) unrelated in any informative way to the
15 activities in any other cost pool and (b) distributed identically to the documented costs
16 within the cost pool. Mr. Degen does not offer a reason that should be so, and I cannot
17 think of one.

18 Using arbitrary assumption to allocate large costs to individual services should not
19 be confused with actually measuring the costs of individual services and does not
20 provide a suitable basis for developing fair and efficient postal rates. Simply assuming
21 what the costs of services are constitutes a determination not of cost but of cost-recovery.

1 in effect usurping the regulator's role of deciding how costs should be recovered that are
2 not clearly identifiable with individual services. Moreover, significant parts of Mr.
3 Degen's cost allocations are random, since they are governed by data found in unreliably
4 small samples.

5 The USPS should be strongly encouraged to develop the data needed to determine
6 cost causation by service subclass, something that need be no more onerous than the
7 current system for collecting cost information, which does not always seem well suited to
8 determining service costs.

9 In the meantime, the Postal Rate Commission may want to consider whether some
10 better cost foundation is available for developing rates in the current case. One
11 possibility is to retain the USPS's cost study, but to eliminate its speculative allocations
12 by classifying as institutional costs all costs not clearly identifiable with individual
13 service classes. Or, as a middle ground between that and the Postal Service's proposed
14 cost allocations, one might adopt a methodology that makes greater use of existing
15 information and so generates results that are less sensitive to arbitrary assumptions and
16 small samples than the methodology currently being sponsored by the Postal Service.

Exhibit DJ-1

VITA

NAME: William B. Shew

BUSINESS ADDRESS:

American Enterprise Institute
1150 17th Street, N.W.
Washington, DC 20036

Telephone (202) 862-7191
Fax (202) 862-7169
E-mail BShew@ibm.net

EDUCATIONAL BACKGROUND:

UNIVERSITY OF CHICAGO
Ph.D. requirements except dissertation.

UNIVERSITY OF CHICAGO
M.A., Economics

UNIVERSITY OF CHICAGO
B.A., Economics

PROFESSIONAL BACKGROUND:

- Present AMERICAN ENTERPRISE INSTITUTE FOR PUBLIC POLICY RESEARCH
Visiting Scholar Research on communications markets, competition and regulatory policy.
- 1992-1995 ARTHUR ANDERSEN ECONOMIC CONSULTING
Director of Economic Studies Supervised research on the economics of telecommunications, the media, market regulation, and competition policy.
- 1989-1992 PUTNAM HAYES & BARTLETT, INC.
Director Conducted studies of the economics of telecommunications, the media, market regulation, and competition policy.
- 1974-1989 NATIONAL ECONOMIC RESEARCH ASSOCIATES, INC. (NERA)
Vice President Conducted research on the economics of television, telecommunications, energy, and regulation.
- 1969-1973 UNIVERSITY OF LONDON
Lecturer (Assistant Professor) Taught undergraduate and graduate welfare economics and international trade; supervised the international economics program.

PUBLICATIONS AND CONFERENCE PAPERS:

- "A Policy Framework for the Media Industries" (with I. M. Stelzer), Markets and the Media, M.E. Beesley, Ed., Institute for Economic Affairs, London, April 1996.
- "Are Media Mergers a Menace?", American Enterprise Institute, Washington D.C., March, 1996.
- "Telecommunications Infrastructure and the Role of Government." Readings in Telecommunications Policy, Ballinger, 1995
- "Regulation, Competition, and Prices in the U.S. Cellular Telephone Industry", International Conference on the Economics of Radio Based Communications, Paris, June 23-24, 1994.
- "Merging Lanes on the Information Highway", *New York Newsday*, April 24, 1994.
- "New Trends and Not-So-New Issues in Telecommunications Competition", International Conference on Telecommunications Globalization, Washington, DC, January 14, 1994.
- "Telecommunications Policy and Infrastructure Development", Yale University, School of Management, October 11, 1993.
- "Telecommunications Infrastructure: Is There a Role for Government?", The American Enterprise Institute, July 1993.
- "Copyright Harmonization and Efficient Trade in Films", British Screen Advisory Council Conference on EC Copyright Policy, London, February 1993.
- "In Search of Leisure," The American Enterprise Institute, September 1992.
- "Trends in The Organization of Program Production," Paying for Broadcasting, Routledge Press, 1992.
- "Auctioning the Airwaves," The American Enterprise Institute, September 1991.
- "Measuring Pluralism, Diversity and Concentration in a Multi-Media Society," European Conference on the Press, Brussels, May 1991.
- "Peak-Responsibility Methodology for Regulating Telephone Prices," Telecommunications Deregulation, Quorum Books, 1990.
- "Antitrust Analysis of Shared Financial Networks," NERA Antitrust and Trade Regulation Seminar, Santa Fe, New Mexico, July 1989.
- "Market Mechanisms to Allocate Radio Spectrum," University of Canterbury, Christchurch, New Zealand, July 22, 1988.

- "Current Issues in Telecommunications Regulation: Pricing" (with Alfred E. Kahn), The Yale Journal on Regulation, Spring 1987.
- "Pricing Local Calls: How Much Imperfection Is Perfect?" Telecommunications in a Competitive Environment, NERA, Phoenix, Arizona, March 6, 1987.
- "The Profit Outlook for Cable Television in Britain," The Economist Intelligence Unit's Conference on Cable and Satellite Television, Birmingham, England, September 13, 1983. Reprinted in Cable and Satellite Television: Risk, Reward and Reality, Spencer House, London, 1984.
- "Can Cabling Britain Be Profitable?" Cable Television Conference, Hyde Park Hotel, London, England, April 14, 1983.
- "How to Assess the Value of Electricity Reliability," EPRI Seminar on the Value of Service Reliability to Consumers, Boston, Massachusetts, April 5-7, 1983.
- "A Methodology for Determining Optimal Generating Capacity," EPRI Workshop on Value of Reliability, Mackinac Island, Michigan, October 1979.
- "The Cost of Inadequate Generating Capacity," EPRI Conference on Electricity Shortage Costs, Asilomar, California, September 1978.
- "Supply Restrictions as Environmental Policy," Environmental Aspects of Non-Conventional Energy Resource II Topical Meeting, American Nuclear Society, September 1978.
- "Costs of Inadequate Capacity in the Electric Utility Industry," Energy Systems and Policy, 1977.
- "Load-Management Potential -- An Overview," Load Management, Federal Energy Administration Conservation Paper No. 24, 1975.
- "The Economic Dilemma for Consumers and the Utilities," Cornell University Energy Forum, January 1975.

TESTIMONY:

- Service price consequences of merging two marketing firms, Antitrust Division, Department of Justice, July 1997.
- Appropriate copyright rates for DBS retransmission of local broadcast stations, Copyright Office, Docket No. 96-3 CARP SRA, December 1996.

- Rebuttal testimony on service reclassification, Postal Rate Commission, Docket No. MC95-1, October 1995
- Competition in Telecommunications Markets, U.S. Congress, House Commerce Committee, October 1995
- Evaluation of proposed reclassification of postal services, Postal Rate Commission, Docket No. MC95-1, July 1995.
- Analysis of charges of predatory pricing and dumping in the newspaper market in Ireland, Irish Competition Authority, January 1995.
- Analysis of film distribution market, Monopolies and Mergers Commission, May 1994.
- Analysis of the markets for newspaper circulation and print advertising, in connection with a predatory pricing suit, October 1993.
- "Economic Analysis of the Premier/BSkyB Contract", European Commission Directorate General IV, September 1993.
- Statistical analysis of the economics of newspaper distribution, Monopolies and Mergers Commission, July 1993.
- Evaluation of FCC benchmarks for regulating cable television prices, on behalf of Coalition of Small Cable System Operators (MM Docket 92-266), June 17, 1993.
- Analysis of the New York market for advertising, in connection with request for waiver of the newspaper/broadcast cross ownership rule, FCC, April 1993.
- Sadler Enquiry into Standards of Cross-Media Promotion, 1990/91.
- "Tobin's Q for Cable Television, Media and Telecommunications: A Comparative Assessment," FCC inquiry into Competition, Rate Deregulation and Commission's Policies Relating to the Provision of Cable Television Service (MM Docket No. 89-600), April 2, 1990.
- "The Value of Three Cable TV Franchises," Docket No. 268-89, U.S. Tax Court, December 20, 1989.
- Testimony in FCC Price-Cap Proceeding, on behalf of BellSouth (CC Docket No. 87-313) (with Alfred E. Kahn), July 26, 1988.
- Alternative Regulatory Frameworks for Local Exchange Carriers, presented before the Public Utilities Commission of the State of California (I. 87-11-033), February 26, 1988.
- Reply Testimony in FCC Price-Cap Proceeding (CC Docket No. 87-313), (with Alfred E. Kahn), December 4, 1987.

- Cable Television Competition in Connecticut, testimony presented before the Department of Public Utility Control (DPUC), (with Alfred E. Kahn), November 13, 1987.
- BellSouth Testimony in FCC Price-Cap Proceeding (CC Docket No. 87-313), (with Alfred E. Kahn), October 19, 1987.
- "Regulation of the Scrambling of Satellite Television Signals," FCC Inquiry into the Scrambling of Satellite Television Signals and Access to those Signals by Owners of Home Satellite Dish Antennas, Docket No. 86-336 (with Paul L. Joskow), November 10, 1986.
- Regulation of Entry into the Market for Cellular Mobile Service, Federal Communications Commission, March 1984.
- Rental Value of a Hydroelectric Site, testimony before the Federal Energy Regulatory Commission, Hydroelectric Project No. 5, January 1984.
- "Railroad Exemption -- Export Coal," Verified Statement, Interstate Commerce Commission, Ex Parte No. 346 (Sub-No. 7), December 18, 1981.
- "Effectiveness of Time-of-Use Electricity Pricing," testimony before the New York Public Service Commission, Case 27319, November 1978.
- "An Economic Evaluation of Automobile Bumper Standards," NHTSA Hearings on Bumper Standards, April 1975.

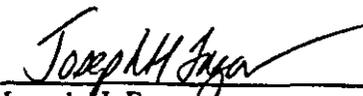
SELECTED REPORTS:

- "Price Cap Test of Restructured Rates." prepared for Telefonica de Argentina, June 1995.
- "UK Media Concentration," prepared for News International plc., July 1994.
- "Switched Voice Telephone Interconnection Policies," prepared for OFTEL (UK Office of Telecommunications) (with David Starkie), April 1992.
- "Telecommunications Privatization in New Zealand," prepared for the New Zealand government, (with Robin Foster and Jeffrey Rohlf), May 1989.
- "Economic Prospects for Six Asian Countries," prepared for American Airlines (with Nathaniel Jackson), May 1989.

- "Management of the Radio Frequency Spectrum in New Zealand," prepared for the New Zealand Government, (with Robin Foster, Phillipa Marks, Charles Jackson and Robyn Durie), November 1988.
- "Determining the Cost of Telephone Services: A Survey of Issues," prepared for the New York Telephone Company, February 1988.
- "Obligation to Serve in Competitive Electricity Markets," prepared for consortium of electric utilities, January 1987.
- "Assessing Anticompetitive Behaviour in the UK Telecommunications Industry," prepared for the Office of Telecommunications (OFTEL), Britain, August 1986.
- Welfare Gains from Local Measured Telephone Service (simulation model), prepared for Pacific Northwest Bell, 1985.
- Profitability of Jointly Supplying Local Telephone and Cable Television Services (simulation model), prepared for Mercury Ltd., 1984.
- "Costs of Cable Television Franchise Requirements," prepared for the National Cable Television Association, 1984.
- "Quantity-Dependent Pricing of Telephone Service," prepared for New England Telephone, 1983.
- "Regulation of Emissions by Production Permits," prepared for E. I. DuPont DeNemours & Company, (with Lewis J. Perl), October 17, 1979.

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon all participants of record in this proceeding in accordance with section 12 of the Rules of Practice.



Joseph H. Fagan

December 30, 1997

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, DC 20268-0001

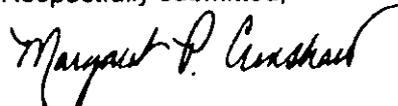
Postal Rate and Fee Changes, 1997

Docket No. R97-1

DESIGNATION OF WRITTEN CROSS-EXAMINATION
OF DOW JONES & COMPANY, INC.
WITNESS WILLIAM B. SHEW
(DOW JONES-T1)

<u>Party</u>	<u>Interrogatories</u>
Newspaper Association of America	NAA/DJ-T1-1-2, 4
Office of the Consumer Advocate	NAA/DJ-T1-1-7 OCA/DJ-T1-1-7 UPS/DJ-T1-1-4 USPS/DJ-T1-1-6
United Parcel Service	NAA/DJ-T1-1-3
United States Postal Service	NAA/DJ-T1-1-7 OCA/DJ-T1-1-7 UPS/DJ-T1-1-4 USPS/DJ-T1-1-6

Respectfully submitted,



Margaret P. Crenshaw
Secretary

**RESPONSES OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF NEWSPAPER ASSOCIATION OF AMERICA**

NAA/DJ-T1-1. Please refer to page 5, lines 20-21 and page 6, line 1 where you state: "But each service's true cost -- the cost that would be avoided if the service were not offered -- is inevitably the appropriate point of departure in establishing suitable service rates."

- a. Is the "true cost" to which you refer in the above statement, the marginal cost or the incremental cost of each service? Please explain.
- b. Should the "true cost" to which you refer in the above statement be measured on a short-term or a long-term basis? Please explain.
- c. Should the Postal Rate Commission use the "true cost" as the attributable cost basis for determining the institutional cost markup for each subclass of mail? Please explain why or why not.

RESPONSE:

(a) In the context of pages 5 and 6 of my testimony, which deals with efficient pricing of postal services, true cost refers to the marginal cost of each service. Marginal and incremental costs are both "true" measures of cost, in the sense that they attribute cost to a service on the basis of not arbitrary assumption but of actual causal responsibility. They do that by measuring the cost that the service supplier could avoid by producing one fewer unit of the service (marginal cost) or by eliminating the service line altogether (incremental cost).

My testimony provided a simple example that illustrates why it is *marginal* cost that is relevant to sending customers efficient price signals. Suppose that the marginal cost of both oranges and pears is \$1. In other words, producing one fewer orange or one fewer pear would save \$1 of real resources, which would then be available to produce some other good. Now suppose oranges are priced at \$.50 and pears at \$2. At a \$.50 price, consumption of oranges would be wastefully excessive, since consumers to whom oranges are worth as little as 50 cents would be encouraged to buy them, even though each one absorbs \$1 of the economy's resources to be produced (i.e., has a marginal cost of \$1). As for pears, pricing them at \$2, well above their \$1 (marginal) cost, would also distort the choices of customers, since it would discourage them

**RESPONSES OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF NEWSPAPER ASSOCIATION OF AMERICA**

from buying pears whose value to them exceeds the (marginal) cost of producing them. In short, prices that do not appropriately reflect marginal cost can waste resources by distorting the choices made by customers.

(b) Normally, the expectation is that short-run marginal costs are relevant to rate-making, and I know no reason why this proceeding would be an exception. In setting postal rates, the appropriate marginal cost to look at depends on (a) the length of time over which the new rates are expected to be in effect, compared to (b) the period of time that it would take the USPS to reach long-run equilibrium under the new rates. For long-run marginal cost to be relevant, the Postal Service must be expected to attain long-run equilibrium within the period during which the new rates will be in effect. Otherwise, short-run marginal costs are relevant.

The reason is straightforward. Long-run marginal cost describes the cost that can be avoided by providing less of a service when the supplier has the opportunity to completely adapt all of its inputs to the new, reduced level of output. In the short run, some costs are fixed, and so the opportunity to save costs differs from the long run. Rates based on long-run cost would give the wrong price signals in the short run. If some of the Postal Service's inputs cannot be altered during the period the rates now being set are in effect, then short-run costs are relevant to rate-making.

(c) As long as rates are designed to promote the public interest to the fullest possible extent, suitably reflecting the considerations specified by Congress, the particular path taken to arrive at those rates would seem to be inconsequential. The (estimated) marginal cost of each service should be taken into account, for the reason discussed in my answer to (a) above, at some stage in the process of designing rates. There are various ways that might be done. As one possibility, one might estimate the revenue deficit that would be produced by marginal-cost pricing, and then decide how the burden of recovering the deficit can best be distributed across postal services, bearing in mind the public interest considerations specified by Congress.

**RESPONSES OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF NEWSPAPER ASSOCIATION OF AMERICA**

NAA/DJ-T1-2. You state in your direct testimony at page 18, lines 5-7 that Professor Bradley's analysis of the variability of mail processing costs "constitutes a major step forward in improving understanding of the factors driving Postal Service costs." Further, you conclude that "the study in its current form more than adequately establishes the variability of costs, and the size of the data sets and the thoroughness of the analysis provide ample reason to be confident that the results are reliable."

- a. Please specify all documents, including workpapers, that you relied upon to draw the above conclusions.
- b. As a part of your review of Professor Bradley's analysis, did you examine the data to assess its accuracy or reliability? If yes, please describe your examination of the data and what conclusions you drew based upon this examination.
- c. As a part of your review of Professor Bradley's analysis, did you examine the data that Professor Bradley excluded from his analysis? If so, did you determine whether the exclusion of these data was appropriate? Please explain.
- d. As a part of your review of Professor Bradley's analysis, did you investigate alternative specifications of his recommended models? If so, please describe these investigations and what conclusions you drew based upon these investigations.
- e. As a part of your review of Professor Bradley's analysis, did you perform any independent analysis, including but not limited to recalculation of the resulting cost variabilities by MODS operation, to verify the results of Professor Bradley's analysis? If so, please describe this independent analysis and provide a copy of the analysis.

**RESPONSES OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF NEWSPAPER ASSOCIATION OF AMERICA**

RESPONSE:

a. I relied on Professor Bradley's direct testimony, in conjunction with my own experiences doing cost studies involving considerations similar to those dealt with by Professor Bradley.

b.-d. In reviewing Professor Bradley's cost analysis, I followed the same procedures I apply when asked by a professional economics journal to referee an empirical study that has been submitted for publication. In such instances, my aim is to evaluate the soundness of a study's findings by considering the specification(s) of the estimating equation(s), the data that are used, whether any special problems posed by the data are recognized by the researcher, and the econometric techniques employed in the analysis. I do not (b) "examine the data to assess its accuracy," (c) "examine the data that [are] excluded from [the] analysis," (d) "investigate alternative specifications," or (e) "perform independent analysis, including recalculation of the [results]." Nor did I in reviewing Professor Bradley's study. The reasons, briefly, are these:

b. It would be reassuring if errors were so obvious that they could be detected merely by "examining" the data, but that rarely happens. Errors can creep into each stage of a data collection process, from observing an activity (e.g., mail handling) to recording the observations, to compiling them in summary records. Once that process is completed, it is usually impossible, in effect, to reach back in time to spot mistakes that were made. That leads many researchers, myself included, to assume that any data set is likely to contain errors, some perhaps quite serious, that will remain invisible. Rather than "examining" data, therefore, it seems likely to be more productive to address two methodological questions related to data quality: Could some alternative data set be used that seems likely to be more error-free? If there are reasons to suspect errors in the data, does the research employ techniques designed to deal with data errors? On both of these scores, I see no grounds for criticizing Professor Bradley.

**RESPONSES OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF NEWSPAPER ASSOCIATION OF AMERICA**

c. Professor Bradley formulated criteria for excluding observations that might interfere with obtaining accurate cost estimates. That practice, which is not uncommon, inevitably involves subjective judgment in defining the criteria for excluding observations. Because subjectivity is necessarily involved, the relevant question is not whether someone else would have chosen precisely the same exclusionary criteria, but rather whether the criteria seem broadly reasonable. If there is a valid objection to this aspect of his study, it must pertain to the criteria themselves, and not to the particular observations that happened to be excluded as a result of applying the criteria. I see no reason to object to the criteria for exclusion employed by Professor Bradley. Once the judgment is made that the criteria seem a priori reasonable, it is unclear what would be accomplished by "examining" ex poste the particular observations excluded by the criteria. It would be quite improper to tinker with the criteria as a result of examining how the results are affected.

d. I mentioned in my direct testimony two modifications of Professor Bradley's specification that it would be interesting to look into. One is to measure labor cost by compensation instead of hours. The other is to include as explanatory variables the stock of capital (plant and equipment) connected with mail sortation activities. Professor Bradley did not test those specifications apparently because the necessary data are not readily available.

e. I was informed that Professor Bradley's results were independently verified, so little would have been served by my doing that.

**RESPONSES OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF NEWSPAPER ASSOCIATION OF AMERICA**

NAA/DJ-T1-3. In your opinion, is Professor Bradley's mail processing analysis likely to produce estimates of the long-run or short-run variability of costs with respect to volumes? Please explain your answer fully.

RESPONSE:

My expectation is that the cost variabilities estimated by Professor Bradley come close to measuring the variability of mail processing costs over the long run. For any four-week period covered by his data set, the cross-sectional observations reflect facilities that vary in their scale of operations. Such variations are normally construed to reflect persistent differences in scale, and therefore to reveal points on the long-run cost curve. The period-to-period variations in cost and volume observed within the same facility can be used to estimate the short-run and long-run variability of cost. In most of Professor Bradley's equations, labor hours are explained by contemporaneous output and also output in the previous period, and he sums those two effects to obtain his estimate of cost variability. That combined effect should approximate the variability of cost in the long run.

**RESPONSES OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF NEWSPAPER ASSOCIATION OF AMERICA**

NAA/DJ-T1-4. In your opinion, is the IOCS tally system a reasonable tool for distributing costs in today's postal operational environment? Please explain.

RESPONSE:

Randomly monitoring what postal employees are doing can provide useful information about service cost responsibility. But as the IOCS tally system is being operated, it seems to be yielding an increasingly incomplete picture of service cost responsibility. It is understandable that a small percentage of tallies would not be service-specific. But by 1996, the majority of tallies related to clerks and mail handlers failed to provide any direct evidence of service cost responsibility. There appears to be almost universal agreement that information should be collected to permit a more accurate determination of service costs.

**RESPONSES OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF NEWSPAPER ASSOCIATION OF AMERICA**

NAA/DJ-T1-5. Please refer to page 39, lines 3 through 11 of your testimony. Do you have a specific proposal for the Commission to use in attributing mail processing costs?

RESPONSE:

My testimony apparently seemed to NAA to go on forever, since this question refers to page 39 of a 32 page testimony. In any event, my assignment did not include constructing a new method to attribute service costs, nor did I do that unbidden. Halstein Stralberg and Rita Cohen, two analysts who have long experience with Postal Service operations and costing methodologies, have provided specific proposals for attributing mail processing costs in this proceeding.

**RESPONSES OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF NEWSPAPER ASSOCIATION OF AMERICA**

NAA/DJ-T1-6. Please refer to page 30, lines 5-6 of your testimony. Assuming that "all costs not clearly identifiable with individual service classes" to which you refer were, in fact, treated as institutional, please identify what costs would be shifted and what would be the amount of costs shifted from attributable to institutional? Please indicate the amounts of costs by subclass.

RESPONSE:

The magnitude of the cost shifts would depend on how exacting the standard is for determining which costs are not "clearly identifiable." That judgment, which is inherently subjective, is properly a matter of deliberation for the Postal Rate Commission. The shifts might be small or large, depending on where the PRC decided to draw the line between reasonable inference and speculation.

**RESPONSES OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF NEWSPAPER ASSOCIATION OF AMERICA**

NAA/DJ-T1-7. Please refer to your direct testimony at page 32, lines 13-15. You suggest an alternative distribution method that ... makes greater use of existing information and so generates results that are less sensitive to arbitrary assumptions and small samples than the methodology currently being sponsored by the Postal Service." Please explain this method in detail and describe how this method would make greater use of existing information.

RESPONSE:

I did not, as this question implies, "suggest an alternative distribution method...." What I did say, in connection with the analysis of Mr. Degen, is that, the Postal Rate Commission may want to consider whether some better cost foundation is available for developing rates in the current case. I pointed out two possibilities. One is to retain the USPS's cost study, but to eliminate its speculative allocations by classifying as institutional costs all costs not clearly identifiable with individual service classes. The other, a middle ground between that and the Postal Service's proposed cost allocations, would be to adopt a methodology that makes greater use of existing information and so generates results that are less sensitive to arbitrary assumptions and small samples than the methodology currently being sponsored by the Postal Service.

**RESPONSE OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF OFFICE OF THE CONSUMER ADVOCATE**

OCA/DJ-T1-1. Please refer to your testimony at pages 4 through 9.

- a. Recognizing that price and cost are normally measured by economists in dollar terms, did you find any dollar measurements in witness Bradley's testimony? If so, please explain.
- b. Do you have or are you aware of any study that shows that the use of labor hours is a meaningful measure of cost? If so, please identify the study.
- c. In discussing economic efficiency, economists usually discuss marginal revenues, prices, costs, etc. and provide a variety of general equilibrium economic efficiency conditions. It is on the basis of these conditions that economists have a theoretical basis for the analysis of efficiency, costs, and prices. Would these conditions be met if labor hours were assumed to be the costs? If so, please explain.

RESPONSE:

(a) In his investigation of the relationship between labor cost and output, Professor Bradley measures labor cost in terms of the hours of labor associated with various activities. For that reason, costs in his study are denominated in hours rather than dollars. His testimony is copious, and I cannot recall whether I found, incidentally, "any dollar measurements" in it.

(b) I am not aware of any study that shows that the use of labor hours either is or is not a meaningful measure of cost. I would be surprised if such a study exists. It seems evident that hours provides one meaningful measure of the labor cost of producing something, just as compensation provides another. The best measure of labor cost depends on such considerations as the intended use of the information and the nature of data available on labor costs.

**RESPONSE OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF OFFICE OF THE CONSUMER ADVOCATE**

(c) This question is a little difficult for me to understand. The quantity of labor required to produce a service constitutes a real resource cost of the service. Knowing that resource cost can help to inform decisions about Postal Service investments and pricing that would promote economic efficiency. Postal Service costs consist overwhelmingly of labor, but Professor Bradley is not assuming that labor hours constitute the only cost of providing postal services.

Knowledge of the physical relation between output and hours of labor input may provide full information about marginal costs. For if an organization with a neoclassical production function (its inputs are substitutes for each other) is minimizing its costs, then the envelope theorem says that the marginal cost of a service is given by the wage rate multiplied by the labor hours required to produce one more unit of service.

**RESPONSE OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF OFFICE OF THE CONSUMER ADVOCATE**

OCR/DJ-T1-2. On page 11, lines 15-16 of your testimony, you discuss factors that help explain costs. On page 18, lines 7-10 of your testimony, you state that for witness Bradley's study, "[I]ts usefulness as an analytic tool might be further expanded if, in future versions of the study, the labor cost of mail processing were measured in dollar terms as well as hours and if the investment in plant and equipment associated [with] each activity at each sight were included as explanatory variables." Given that economic theory focuses on labor, capital, and the price system, and given your statement that considerations of capital, prices, and costs are absent from witness Bradley's study, could it be assumed that the study presents a short-run cost estimating equation between labor hours and TPH?

RESPONSE:

My expectation is that the cost variabilities estimated by Professor Bradley come close to measuring the variability of mail processing costs over the long run. Professor Bradley's specification includes two variables that should capture impacts of technological change on the relation of labor to output. The variables are a (nonlinear) time trend and also, for some cost pools, a variable measuring the degree to which the mail stream has been rerouted from manual operations.

The period-to-period variations in cost and volume observed within a facility can be used to estimate the short-run and long-run variability of cost. In most of Professor Bradley's equations, labor hours are explained by contemporaneous output and also output in the previous period, and he sums those two effects to obtain his estimate of cost variability. That combined effect should approximate the variability of cost in the long run.

**RESPONSE OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF OFFICE OF THE CONSUMER ADVOCATE**

OCA/DJ-T1-3 Given your concern over the absence of cost and investment data, please explain your reasoning leading to the statement on page 18, lines 11-13 of your testimony that "the size of the data sets and the thoroughness of the analysis provide ample reason to be confident that the results are reliable."

RESPONSE:

I did not express "concern over the absence of cost and investment data...." Expressing concern is quite different from observing, as I did, that the study's usefulness as an analytic tool might be further expanded if, in future versions of the study, the labor cost of mail processing were measured in dollar terms as well as hours and if the investment in plant and equipment associated each activity at each site were included as explanatory variables. I would not expect those specifications significantly to affect the estimated variability of mail processing cost.

**RESPONSE OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF OFFICE OF THE CONSUMER ADVOCATE**

OCA/DJ-T1-4 Do you believe that witness Bradley has presented (1) a cost function or equation as defined by economists or (2) a cost estimating relationship between hours of labor and TPH based on operational factory floor data? Please explain your answer.

RESPONSE:

There are many meaningful types of cost functions consistent with the canons of economics. Professor Bradley has estimated one, relating the labor costs of mail processing activities, as measured by labor hours, to an index of output, usually total pieces of mail handled. The most appropriate cost function to estimate depends on the ultimate objective of the cost analysis and the nature of the data that are available. In light of the objective of measuring labor cost variability and the data available for that task, I see no grounds for criticizing Professor Bradley's choice.

**RESPONSE OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF OFFICE OF THE CONSUMER ADVOCATE**

OCA/DJ-T1-5 On page 12, lines 17-18 of your testimony, you indicate that witness Bradley's large data sets make it extremely unlikely that the combinations of cost and scale that he observes are atypical. Are they typical for non-MODS offices? Please explain your answer.

RESPONSE:

When I remarked that the combinations of cost and scale observed by Professor Bradley are unlikely to be atypical, I made that comment in connection with evaluating his econometric estimates. He does not econometrically estimate cost functions for non-MODS offices, since there is currently no system for recording hours and piece-handling data for individual activities in non-MODS offices. Since the data for non-MODS offices do not exist, the question of adequacy of sample sizes for non-MODS offices does not arise. Professor Bradley's methodology calls for applying the average or system variability from MODS offices to non-MODS offices, and it is difficult to think of a better alternative given the absence of non-MODS data.

**RESPONSE OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF OFFICE OF THE CONSUMER ADVOCATE**

OCA/DJ-T1-6 On page 12, line 9 of your testimony, you state, "Being able to observe the costs of many different scales of mail processing facilitates establishing the precise shape of the relationship between total pieces of mail handled and cost." Please define how you understand scale: whether it differs from TPH, whether scale of a facility is related to size and investment, and how you believe scale is related mail processing.

RESPONSE:

My testimony refers to the scale of mail processing, which is customarily measured by total pieces handled. Since that is the output measure that Professor Bradley uses to gauge the variability of mail processing costs, that is the scale variable whose variability within the sample affects the precision of his results.

**RESPONSE OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF OFFICE OF THE CONSUMER ADVOCATE**

OCA/DJ-T1-7 You indicate on page 13, line 16 of your testimony that witness Bradley explains that accurate information on compensation in each mail processing activity was not readily available.

- a. On the basis of your understanding of data availability, given that hours are measured based on people clocking into operations by badge number or in other similar ways, do you have any information as to why dollar data would be unavailable? If so, please explain.
- b. As an economist, would you agree that the absence of cost data presents a problem in the development of a cost study? If you do not agree, please explain.
- c. As an economist, would you advocate gathering such data, possibly as a prelude to conducting a cost study? If you would not, please explain.

RESPONSE:

a. In my experience, information that one would like to have in estimating a cost function is often not available. Various reasons are given for that: it is not collected in a consistent way over time or across facilities, archived information had been disposed of or lost, the cost of recovering the information would be prohibitive, or the data cannot be interpreted properly without some other information that is missing. The particular data problems that arise in trying to measure labor costs at the pool level by labor compensation is something that OCA may want to discuss with Professor Bradley and Postal Service employees.

But even if compensation data were complete and readily accessible, using them instead of labor hours to estimate cost variability could be problematical. For it would necessitate constructing a satisfactory index of how the terms of compensation vary across facilities and

**RESPONSE OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF OFFICE OF THE CONSUMER ADVOCATE**

through time, if the variability of labor cost with respect to output is to be accurately estimated. Constructing an accurate index of labor compensation can pose formidable problems, so it is by no means evident that, even if good data on labor compensation were readily available, they would provide a better basis than hours for estimating cost variability.

b. , c. It is difficult to study something quantitative in nature without any data. For that reason, if a decision is made to study a quantitative issue, collecting data would seem a sensible step. Quite what this has to do with Professor Bradley's study is not apparent to me, unless OCA feels that costs can only be denominated in money, and that the quantity of labor (e.g., labor hours) required to produce a service is somehow not a cost.

**RESPONSE OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF UNITED PARCEL SERVICE**

UPS/DJ-T1-1. (a) Please confirm that the costs for postal employees not handling mail are primarily for one of three activities: moving empty equipment, breaks/personal needs, and clocking in/clocking out. If not confirmed, please explain.

(b) Please explain how the costs associated with these three activities "may not be a legitimate cost of *any* service" (page 22, line 9, of your testimony) (emphasis supplied).

RESPONSE:

(a) I do not know – indeed, it is not clear that anyone knows – what actually accounts for the high proportion of time that Postal Service clerks and mail handlers are reported to be "not handling mail." According to the tally reports for fiscal 1996, some 40% of the sample of mail clerks and handlers were classified as not handling mail at the times that their activities were randomly monitored.¹ Between 1986 and 1996, the sampled clerks and mail handlers reported to be on break, moving empty equipment or clocking in and out, expressed as a percent of direct tallies, rose by more than half, from 20.8% in 1986 to 31.5% in 1996.²

What accounts for the frequency of employees not handling mail seems to be a matter of dispute, centering on whether the substantial proportion of time that clerks and mail handlers are not handling mail reflects excessive staffing and therefore unnecessarily high service costs. Those who deny overstaffing point to the explanations provided by the IOCS reports themselves, which classify those not handling mail into categories of activities such as clocking in and out, moving empty equipment, window service and "general services." But the IOCS system for classifying those not handling mail does not include categories such as "employee idle" or "employee has no work to do," so an underemployed clerk or mail handler would be placed in a category that obscures the actual reason the employee was not handling mail. In brief, the

¹ From USPS-LR-H-23, calculated to exceed 42%, as reported in MPA-T-2, Docket No. R97-1, at 12.

² Derived from USPS Cost Segments and Components Report for FY 1986 to FY 1996.

**RESPONSE OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF UNITED PARCEL SERVICE**

current IOCS system of activity codes related to clerks and mail handlers found not handling mail seems incapable of revealing the extent of overstaffing within mail processing activities.

That limitation creates serious problems not just for efficient planning of future staffing levels, but also for determining individual service costs. For excessive staffing may not affect all cost pools equally. It may lead to a concentration of employees "not handling mail" clocked into cost pools where underemployed staff are less conspicuous and, in particular, are a smaller drag on productivity statistics. But that, in turn, implies that the cost pool into which someone not handling mail is clocked may reveal less about service cost responsibility than about the pool's ability to harbor underemployed labor inconspicuously.

(b) This question appears to misrepresent my testimony. The sentence from my testimony that is partially quoted here reads, in full, "Indeed, staff 'not handling mail,' which accounts for some 40% of all mail processing costs, remains something of a mystery, and much of it may not be a legitimate cost of *any* service." My testimony did not discuss whether potentially questionable costs might be associated with specific explanations offered for not handling mail (e.g., breaks/personal needs, clocking in/clocking out, moving empty equipment). There was no apparent reason to address that matter, partly because it is unclear how much confidence can be attached to the results of the current system for classifying what people are doing when not handling mail. What my direct testimony did say is that "much" of the cost of not handling mail may not be a legitimate cost of *any* service.

My basis for saying that was twofold. First, the high and increasing proportion of clerks and mail handlers reported to be not handling mail (over 40% in 1996 versus less than 30% a decade earlier) suggests to some observers that the Postal Service may have more employees than it needs. In other words, some costs incurred by the USPS may be unnecessary. Second, if cost information is to provide a useful basis for setting rates, costs for which no service is causally responsible should not be attributed to any individual service.

**RESPONSE OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF UNITED PARCEL SERVICE**

UPS/DJ-T1-2. You state that "For the CPP [Cost Pool Proportionality] assumption to be correct, the cost of mixed mail and of staff not handling mail in any one cost pool must be (a) unrelated in any informative way to the activities in any other cost pool and (b) distributed identically to the documented costs within the cost pool" (page 25, lines 7-11, of your testimony).

(a) If the cost of mixed mail and of staff not handling mail in any one cost pool were more related to the costs of direct mail in that cost pool than to direct mail in all cost pools, would not the CPP assumption be an improvement over the existing Postal Service LIOCATT system? If you disagree, please explain.

(b) If the cost of mixed mail and of staff not handling mail in any one cost pool were distributed more like the costs of direct mail in that cost pool than like direct mail in all cost pools, would not the CPP assumption be an improvement over the existing Postal Service LIOCATT system? If you disagree, please explain.

(c) Is it not possible for the CPP assumption to be an improvement over the existing assumptions inherent in the Postal Service LIOCATT system without the CPP being a perfect assumption? If you disagree, please explain.

RESPONSE:

(a) (b) Since parts (a) and (b) of this question are identical, with the negligible exception that the phrase "more related to" in (a) is replaced by "distributed more like" in (b), I will address the questions together in the interest of brevity.

First, though, it may be helpful to touch upon a preliminary matter. This question seems to envision that there is a unique measure of how similar two distributions are. That, however, is not the case. Whether or not one pair of variables is "more related" or "distributed more like" another pair of variables depends on the criteria used to define "more related" or "distributed more like." This point is not merely of academic significance, as would be recognized had data been developed that would actually allow the comparisons hypothesized by this question. As a simple example, suppose Distribution B is found to be "more like" Distribution A with respect to half the postal services, but Distribution C is "more like" Distribution A with respect to the other half. Or suppose that B is only slightly "more like" A with respect to all but one service, but for

**RESPONSE OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF UNITED PARCEL SERVICE**

that one service C is far more like A than is B. Whether, overall, B or C is "more like" A cannot be determined without introducing explicit criteria for measuring similarity.

Does it follow that the CPP assumption is an improvement on the existing LIOCATT system as long as, by some agreed upon criteria, the cost of mixed mail and of staff not handling mail in each cost pool is "more related/distributed more like" the costs of direct mail in the cost pool than to direct mail in all cost pools? No.

The reason is simple. The ultimate objective is to estimate accurately the cost of each postal service, which is to say its cost aggregated over all cost pools. As a result, the relative performance of CPP and LIOCATT depends on not only the size of their errors in assigning costs within each individual cost pool, but also the extent to which errors for the same service in different cost pools offset each other.

To take a simple example, assume as this question conjectures that within each cost pool the CPP assumption more accurately assigns the cost of mixed mail and not handling mail to individual services than does LIOCATT. But suppose in addition that for any particular service CPP consistently overstates or understates its attributable share of the costs in a pool, whereas LIOCATT produces for each service a set of pool-specific errors that offset each other. Then even if CPP produced better results at the level of the cost pool, LIOCATT would provide more accurate estimates of service cost, which is the relevant consideration in evaluating the performance of a cost methodology.

The fundamental problem in evaluating cost methodologies in this proceeding, however, seems to me less related to conceptual matters than to the absence of facts. The hypothesized superiority of CPP embedded in parts (a) and (b) of the question above reflect conjectures concerning the relative performance of the two competing methodologies that are just that – pure conjecture. The fundamental deficiency of Degen's methodology is precisely that it proposes to introduce a complex set of seemingly arbitrary untested assumptions as a means of determining service costs.

**RESPONSE OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF UNITED PARCEL SERVICE**

(c) It is unrealistic to expect any set of assumptions to produce figures for service costs that are perfectly accurate. As for how the performance of the CPP assumption compares with the current LIOCATT system, there are three possibilities: (1) CPP is superior, (2) the performance of the two is equal, or (3) LIOCATT is superior. The litmus test, obviously, is to examine the actual performance of the alternative methodologies by determining the true service responsibility for the cost of mixed mail and not handling mail and comparing it to the predictions made by CPP and by LIOCATT. That has not been done. Short of that, it may be possible for individuals with extensive experience of Postal Service operations and data to offer helpful intuitions about the comparative performance of alternative assumptions for assigning the costs of mixed mail and not handling mail. But that can never be as satisfactory as having the actual facts at hand, and so the long-run solution is to create a system for collecting cost information that will permits costs to be assigned on the basis of fact rather than disputed assumptions.

**RESPONSE OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF UNITED PARCEL SERVICE**

UPS/DJ-T1-3. Please confirm that the testing regime you describe on pages 26-27 of your testimony could not have been performed with existing data and that a special study would need to be performed. If not confirmed, please explain.

RESPONSE:

Testing any new set of assumptions for distributing cost requires a "special study." If it is felt worthwhile to invest in creating and applying a new set of assumptions, then surely it should be worthwhile to determine whether the new assumptions constitute an improvement over what they replaced. If testing discloses that new assumptions perform worse than the assumptions currently in use, then the loss associated with investing in the new methodology is limited to the money spent on the failed effort, since (presumably) the new assumptions will not be used. But not testing runs the risk of a far worse outcome. For in that event, the danger is that the new assumptions will be adopted and will produce cost estimates that are worse than what they replace. Then the loss will not be confined to the money spent developing and applying the new assumptions, but will also encompass resource misallocations prompted by postal rates based on inferior cost estimates.

As for whether any test of Mr. Degen's assumptions could have been conducted using existing data, or instead would have necessitated new data collection efforts, that seems likely to depend on the particular test. My direct testimony did not propose a "testing regime," but merely sought to make clear that Degen's assumptions could have been tested. Thus, I observed that the CPP assumption that mixed mail costs have the same service distribution for each cost pool and item type as direct tallies can be tested directly in several ways. The particular example I supplied involved generating a random sample of the cost pools used by Degen and, for each selected pool, drawing a special random sample of clerks and letter-handlers clocked into the cost pool at randomly selected points in time. For each sampled employee, then, any mixed mail being handled would be fully counted, along with the direct tallies observed in the sample, so that the service distributions of direct and mixed tallies for each sampled pool could be compared

**RESPONSE OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF UNITED PARCEL SERVICE**

to test Mr. Degen's CPP assumption. My purpose was simply to demonstrate the feasibility of testing his assumptions, so there was no reason to try to identify all of the alternative ways that Mr. Degen's assumptions might be tested. Hypothesis testing, when done well, can require a great deal of ingenuity, particularly if there is a reluctance to collect "new" data. My expectation is that it would be difficult to avoid collecting new data if Mr. Degen's assumptions were to be subjected to a reasonably conclusive test. But the need to collect new data can scarcely be an excuse not to test his assumptions.

**RESPONSE OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF UNITED PARCEL SERVICE**

UPS/DJ-T1-4. Please refer to page 26, lines 17-18 of your testimony, where you state that "the proportion of employees found not handling mail should systematically fall as output (e.g., total pieces handled) rises towards its peak."

(a) Would you expect the proportion of employees "moving empty equipment" (Activity Code 6523, a component of not handling mail) to systematically fall as output rises? Please explain your answer, making reference to Postal Service operating procedures if necessary.

(b) Would you expect the proportion of employees on "break/personal needs" (Activity Code 6521, a component of not handling mail) to systematically fall as output rises? Please explain your answer, making reference to Postal Service operating procedures if necessary.

(c) Would you expect the proportion of employees "clocking in or clocking out" (Activity Code 6522, a component of not handling mail) to systematically fall as output rises? Please explain your answer, making reference to Postal Service operating procedures if necessary.

RESPONSE:

(a) (b) (c) I have no expectation concerning whether the proportion of employees assigned Activity Codes 6521-6523 falls as output rises. That is an empirical matter, and making assumptions about it seems a poor substitute for finding the facts. Regardless of what Postal Service operating procedures may seem to imply, I would encourage the USPS to empirically investigate the issue.

**RESPONSES OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF THE UNITED STATES POSTAL SERVICE**

USPS/DJ-T1-1. Please assume that it is known a priori that an item type always contains one particular subclass of mail. Also assume that some of the observations of this item type in IOCS consist of "counted" (i.e., direct) observations and "uncounted" (i.e. mixed) observations, and that the a priori information is not imposed in the tally editing process.

(a) In this case, would the subclass distribution of the counted observations for this item type accurately predict the subclass distribution of the uncounted observations for the same item type? If your answer is negative, please explain fully.

(b) In this case, would the subclass distribution of the counted observations for this item type predict the subclass distribution of the uncounted observations for the same item type more accurately than a system-wide aggregate distribution of direct costs would? If your answer is negative, please explain fully.

RESPONSE:

The assumption on which these questions hinge is ambiguous. Had the assumption been more precise, I assume it would have read "Assume that it is known a priori that an item type always contains one particular subclass of mail and only that subclass of mail." The assumption can be illustrated by a simple, hypothetical example. Suppose there are only two item types, red sacks and blue sacks. Then, by the assumption above, red sacks contain exclusively (say) first-class letters and blue sacks contain exclusively (say) regular second class mail.

In that hypothetical circumstance, it would be trivially true that (a) the "subclass distribution for the item type" would perfectly predict the subclass distribution for uncounted items of the same item type (translation: if it the sack is blue, the mail must be regular second class), and therefore (b) no alternative predictor could do better. But that is nothing more than a convoluted way of repeating the assumption, namely that red sacks contain only first-class letters and blue sacks contain only regular second class mail.

Notice that if that assumption were true, there would be no mixed mail to worry about in the first place, since each item type would contain only one subclass. In other words, in the hypothetical circumstances in which I am being asked to evaluate a predictor of mixed mail costs, there would be no mixed mail.

**RESPONSES OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF THE UNITED STATES POSTAL SERVICE**

USPS/DJ-T1-2. Please consider a mixed-mail IOCS tally that appears in the BCS cost pool

(a) Please confirm that the mail handled in the BCS cost pool consists almost exclusively of letter-shape pieces that are compatible with letter automation equipment. If you do not confirm, please explain.

(b) Please confirm that the mail handled in the FSM cost pool consists almost exclusively of machinable flat-shape pieces. If you do not confirm, please explain.

(c) Would you expect the mail handled in the BCS cost pool to have a different subclass distribution than the mail handled in the FSM cost pool? If not, please explain.

(d) Is it your testimony that observations of mail handlings in the FSM cost pool provide useful information for constructing subclass distributions for mixed-mail observations in the BCS cost pool? If not, please explain your testimony at page 22 (especially lines 16-18).

(e) Does your testimony at page 22 (especially lines 16-18) imply that, in general, mixed-mail observations in letter cost pools would be distributed to subclass more accurately using information from both letter and non-letter cost pools than with information from letter cost pools alone? If not, please explain your testimony.

(f) Does your testimony at page 22 (especially lines 16-18) imply that, in general, mixed-mail observations in letter automation cost pools would be distributed to subclass more accurately using information from both letter automation and manual cost pools than with information from letter automation cost pools alone? If not, please explain your testimony.

RESPONSE:

(a) - (b) These questions concerning characteristics of mail in particular cost pools fall well outside the scope of my testimony. I did not discuss, nor are my conclusions predicated on, any particular stylized facts about characteristics of mail in particular cost pools. The characteristic of cost pools relevant to this proceeding is service cost responsibility, and little seems to be known about the services responsible for the majority of time spent by clerks and mail handlers.

**RESPONSES OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF THE UNITED STATES POSTAL SERVICE**

(c) The probability that any two distributions will be identical is normally very small, so I would not expect mail subclasses found in the BCS and FSM cost pools – or, for that matter, any other pair of cost pools – to be identically distributed.

(d) - (f) These questions refer to page 22, lines 16-18 of my testimony, where I say “The CPP assumption implies that activities in other cost pools provide no useful information on the services responsible for mixed mail and staff not handling mail in a cost pool. But that seems somewhat implausible.”

My point was simple. Mr. Degen’s assumptions treat each cost pool as if it were hermetically sealed, unrelated to anything else happening in the same facility, so the assumptions used to distribute a pool’s cost of mixed mail and staff not handling mail are entirely inward-looking, and make no use of information from other cost pools. Yet it strains credulity to suppose that what is going on in those other cost pools would never cast any light on the services responsible for mixed mail and staff not handling mail in the pool being scrutinized.

Consider, for example, the “backup” explanation offered for staff not handling mail in manual sorting activities. According to that interpretation, manual sorting operations are scaled to provide the reserve capacity to handle peak loads of mail normally sorted automatically. In that event, the services to which staff not handling mail in manual operations are attributed should reflect in part the subclass distribution of mail in automated operations.

Whether or not one accepts the “backup” explanation, the general point remains. Cost pools are not in fact hermetically sealed off from one another, and it would be surprising if what is going on in one pool never could cast light on the appropriate service attribution of mixed mail and staff not handling mail in any other cost pool.

To say that some cost pools seem likely to exhibit connections to others is not to say that every cost pool necessarily casts light on the services responsible for costs in every other pool. Thus, the short answer to (d) - (f) is no, not necessarily. But for Mr. Degen’s CPP assumption to be correct, activities in other cost pools could never provide any useful information about the services responsible for mixed mail and staff not handling mail in a cost pool. That is an extreme assumption, and one that strikes me as implausible.

**RESPONSES OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF THE UNITED STATES POSTAL SERVICE**

USPS/DJ-T1-3. If the costs of not-handling mail activities in a cost pool were shown to be causally related to the volume of mail handled in the same cost pool, could it be reasonable to distribute such costs within the cost pool? Please explain.

RESPONSE:

To provide a sound basis for rate-making, costs should be distributed across services in the way that reflects cost causality. That is equally true whether the service volume that causes a cost is in some sense observed within the cost pool or in some other cost pool. In either case, the ultimate objective is to determine which services are responsible for what costs.

In investigating the cause of a pool's cost, whether one ought to confine attention to those service volumes observed within the pool or take a more complete view of service volumes at the facility is essentially an empirical matter of which approach will produce the most accurate estimates of service costs.

USPS/DJ-T1-4. Please refer to your testimony at page 28, lines 5-6.

(a) Please confirm that "distributions of documented [i.e., direct] cost" (page 28, line 5) should read "distributions of mixed-mail cost." If you do not confirm, please explain why it is necessary to infer a direct cost distribution.

(b) Please confirm that your statement, and the statement in MPA-T-2 to which you refer, are based on data provided in USPS-LR-H-305. If you do not confirm, please explain the basis for your statement.

(c) What proportion of mixed-mail costs are distributed on five or fewer tallies? What proportion of total mail processing costs does this represent? Please provide the calculations to support your answer in electronic spreadsheet format.

RESPONSE:

(a) No. I did mean to refer to direct costs. The explanation follows.

Mr. Degen does not know the service responsibility for uncounted mixed-mail items (or, for that matter, staff not handling mail), so his methodology generally assumes it is identical in percentage terms to the service responsibility for the direct costs of items of the same type in the

**RESPONSES OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF THE UNITED STATES POSTAL SERVICE**

cost pool. Thus, a service accounting for (say) 20% of the direct costs for a particular cost pool and item type (e.g., LSM sorting, flat trays) is assumed to be also responsible for 20% of the costs of uncounted mixed mail attributed to that pool and item type.

To apply that assumption, however, it is necessary to determine the distribution of direct costs for items of each particular type in the cost pool. That is not known, since the activities of clerks and mail handlers are not continuously monitored. The IOCS system provides sample information. It is necessary to infer from the sample data the direct cost distribution of services (i.e., the population distribution of direct costs). But a sample is almost never perfectly representative of the population, and statistical inferences from small samples can be prone to large errors.

In short, then, the problem is this. In simple, abstract terms, there is a cost variable X (mixed mail) whose service responsibility Mr. Degen does not know. He nevertheless wants to assign X to individual services, so he decides to assume that X has the same distribution of service responsibility as another cost, Y (direct cost). But he doesn't know the distribution of Y either; he has only sample information, and the samples are often too small to provide statistically reliable inferences. Thus, his methodology could go wrong not only because of his assumption that X is distributed the same as Y, but also because his estimate of the distribution of Y contains large errors.

(b) In saying that hundreds of distributions of direct costs must be inferred from samples containing fewer than five direct tallies, I was relying on the direct testimony of witness Cohen cited in my testimony. Her testimony, I gather, was based on data provided in USPS-LR-H-305.

(c) I do not know the proportion of mixed-mail costs distributed on the basis of five or fewer tallies, a proportion that in any event by itself would not be terribly informative. The key question is the cumulative magnitude of errors introduced into the analysis by the small samples upon which Mr. Degen's methodology relies. That cumulative error includes the errors from samples that, although larger than five, are still troublingly small from the vantage point of statistical reliability.

**RESPONSES OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF THE UNITED STATES POSTAL SERVICE**

To determine the cumulative errors, it would be necessary to examine, for each service, the sampling errors introduced by samples of one, two, three and so forth, to the largest samples employed by Mr. Degen's methodology to distribute costs to the service. Had those calculations been made, one could quantify the sampling errors likely to be contained in each cost estimate. Mr. Degen presumably was aware that his assumptions required relying on samples whose small size could pose statistical problems, and I would have expected his analysis to address that topic and provide some quantification of the probable range of errors from that particular feature of his methodology.

USPS/DJ-T1-5. Please refer to your testimony at page 28, lines 7-8.

(a) Please confirm that any costing system based on a statistical sample of mail processing activities over the course of a year would generally assign different costs to the same service in successive years. If you do not confirm, please explain.

(b) Please confirm that the Postal Service's operations are not identical in every respect year after year. If you do not confirm, please explain.

RESPONSE:

(a), (b) Of course cost estimates from samples will vary with the samples themselves, and although I am not sure I know it from personal observation, it seems a safe bet that the Postal Service's operations are not identical in every respect year after year. But neither of these observations in any way affects the concern expressed in the paragraph that is the subject of this USPS interrogatory. For my concern was not that there would simply be some variability in cost assignments as a result of the small samples that Mr. Degen's methodology uses, but rather that there could be substantial random variability. In other words, the issue of degree is key here. I tried to make that clear by saying, in the cited paragraph,

This means that substantial elements of Mr. Degen's attributions of service cost are random. To understand the significance of that randomness, suppose that the Postal Service's operations were identical in every respect year after year, so no changes in service costs or volumes occurred. Mr. Degen's methodology would nevertheless be capable of attributing in successive years quite different costs to the same service. Those

**RESPONSES OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF THE UNITED STATES POSTAL SERVICE**

random swings would reflect the large uncertainty associated with the small samples whose use is compelled by his methodology. (page 28, lines 7-13; emphasis added)

In short, a random error on the order of magnitude of 1% is not very worrying. But the reliance of Mr. Degen's methodology on many small samples raises the possibility of quite substantial random errors and, correspondingly, erratic swings in estimated service costs from year to year. Had Mr. Degen made the type of calculation that is sketched in my response to part (c) of USPS/DJ-T1-4 above, the magnitude of this problem would be clear.

USPS/DJ-T1-6. Please refer to your testimony at page 29.

(a) Is it your testimony that you are not able to determine whether or not there is a better set of cost distribution assumptions than witness Degen's, because you are not sufficiently knowledgeable about Postal Service operations? If not, please explain your testimony at page 29, lines 4-7.

(b) If you are not sufficiently knowledgeable about Postal Service operations to weigh the merits of various cost distribution assumptions, on what experience do you base your evaluation of witness Degen's methodology?

RESPONSE:

(a) No. The fundamental impediment to evaluating Mr. Degen's methodology is that it consists of extensive assumptions that he has apparently not taken the trouble to test. And although there is no reason that data to test his assumptions could not be obtained from within the Postal Service, I am not aware of publicly available information that would permit any comprehensive testing of his assumptions.

(b) I believe what page 29 of my testimony says is that (1) if assumptions are to be used, I happily leave the task of evaluating competing assumptions to others more knowledgeable about Postal Service operations, because (2) information in the hands of those having long

**RESPONSES OF DOW JONES & COMPANY, INC. WITNESS SHEW
TO INTERROGATORIES OF THE UNITED STATES POSTAL SERVICE**

experience with Postal System operations and cost data should be able to cast light on the plausibility of Mr. Degen's assumptions and on whether other procedures for dealing with the cost of mixed mail and staff not handling mail might produce better estimates of service costs.

As for the experience that I bring to evaluating the cost study of Mr. Degen, I suppose it includes lessons I have learned from analyzing cost and price issues in a number of regulated industries. Those lessons include the dysfunctionality of Fully Distributed Cost studies, the tendency of regulated organizations to exaggerate the difficulties of obtaining data to do a meaningful cost study, and the regularity with which assumptions about service costs turn out to be badly wrong.

1 CHAIRMAN GLEIMAN: Does any participant have
2 additional written cross-examination for the witness?

3 [No response.]

4 CHAIRMAN GLEIMAN: There doesn't appear to be any.
5 We had no requests for oral cross-examination of
6 Witness Shew in advance of the hearing today. Does any
7 participant wish to cross-examine the witness?

8 [No response.]

9 CHAIRMAN GLEIMAN: If not, and there are no
10 questions from the bench that I'm aware of, Mr. Shew, we
11 want to thank you, we appreciate your appearance here today
12 and your contributions to our record, and if there's nothing
13 further, you're excused.

14 [Witness excused.]

15 MR. McBRIDE: Mr. Chairman, I did want to say
16 again on the record that we appreciate your accommodating
17 the witness' schedule.

18 CHAIRMAN GLEIMAN: Thank you. We always try to
19 take care of busy, important people.

20 Our next witness is UPS Witness Mr. McKeever.
21 I'll give everybody a moment to shuffle around.

22 There seems to be a little bit too much paper
23 today floating around here.

24 Mr. Neels, I'll let you get settled in the for a
25 moment.

1 THE WITNESS: Thank you.

2 Whereupon,

3 KEVIN NEELS,

4 a witness, was called for examination by counsel for United
5 Parcel Service and, having been first duly sworn, was
6 examined and testified as follows:

7 MR. McKEEVER: Mr. Chairman, we have had some
8 discussions with the Postal Service about Dr. Neels'
9 supplemental testimony. The Postal Service has indicated
10 that it is prepared to conduct cross-examination on that
11 supplemental testimony today.

12 CHAIRMAN GLEIMAN: Right.

13 MR. McKEEVER: And as we announced earlier today,
14 that is acceptable to us, so I can introduce both pieces of
15 testimony. I will do it in whatever manner the Chair
16 desires.

17 CHAIRMAN GLEIMAN: We've been through this before
18 with witnesses who had two pieces of testimony, and I'll
19 rely on your good offices, and if you do not see a problem
20 with introducing both pieces of testimony at the same time,
21 then we should just move them both in at this point.

22 MR. McKEEVER: We will do that, Mr. Chairman.

23 I will do them separately, but one right after the
24 other then.

25 CHAIRMAN GLEIMAN: Certainly.

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1250 I Street, N.W., Suite 300
Washington, D.C. 20005
(202) 842-0034

DIRECT EXAMINATION

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

BY MR. MCKEEVER:

Q Dr. Neels, I'm handing you a copy of a document entitled Direct Testimony of Kevin Neels on behalf of United Parcel Service and marked UPS-T-1. Was that document prepared by you or under your direction and supervision?

A It was.

Q And if you were to testify orally today, would your testimony be as set forth in that document?

A It would.

MR. MCKEEVER: The document, Mr. Chairman, contains an appendix.

Mr. Chairman, I move that the direct testimony of Kevin Neels on behalf of the United Parcel Service and marked UPS-T-1 including the appendix be admitted into evidence and transcribed into the record.

CHAIRMAN GLEIMAN: Are there any objections?

Hearing none, the testimony and exhibits of Witness Neels are received into evidence, and I direct that they be transcribed into the record at this point.

[Direct Testimony and Exhibits of Kevin Neels, UPS-T-1, was received into evidence and transcribed into the record.]

UPS-T-1

BEFORE THE
POSTAL RATE COMMISSION

POSTAL RATE AND FEE CHANGES, 1997

:
:
:
:
DOCKET NO. R97-1

DIRECT TESTIMONY OF
KEVIN NEELS
ON BEHALF OF
UNITED PARCEL SERVICE

TABLE OF CONTENTS

	<u>Page</u>
QUALIFICATIONS	1
NATURE OF MY ASSIGNMENT	2
SUMMARY OF MY CONCLUSIONS	3
DEFECTS IN BRADLEY'S APPROACH	8
A. Bradley Fails to Use Appropriate Measures of Cost and of Volume	8
1. Hours Are Not a Suitable Proxy For Cost	8
2. "Total Piece Handlings" Is Not a Suitable Proxy For Volume	12
B. Flaws In Bradley's Implementation	14
1. There Are Serious Shortcomings in the Piece Handling Data Used in Bradley's Econometric Analysis	15
2. Bradley's Data "Scrubbing" Procedures Have Substantively Altered His Results	23
3. Bradley's Results Imply Implausible Patterns of Technological Change	34
C. Bradley's Analysis Sheds Little Light on the Long-Run Volume Variability of Costs	39
BRADLEY'S CROSS-SECTIONAL MODEL PROVIDES SUPERIOR RESULTS	40
BRADLEY HAS NOT DEMONSTRATED THAT VOLUME VARIABILITY IS LESS THAN 100 PERCENT	44
A RELIABLE ECONOMETRIC ESTIMATE OF VOLUME VARIABILITY?	44
A. Bradley's Cross-Sectional Model Provides An Appropriate Starting Point	45

B. Some Modifications of Bradley's Cross-Sectional Model Are
Appropriate 45

C. Data "Scrubbing" 46

D. Implementation of These Changes Still Leaves a Model That
Fails to Consider Either Actual Costs or Actual Volumes 47

CONCLUSION 47

APPENDIX A A-1

LIST OF TABLES

Table 1	--	Volume Variability Estimates Derived from Modified Version of Bradley's Cross-Sectional Model	7
Table 2	--	Number of Instances in Which Piece Handlings Are Reported at a MODS Facility for a Direct Activity for Only a Single Accounting Period	17
Table 3	--	Number of Instances in Which Gaps in Piece Handlings Reported at a Facility Appear for MODS Direct Activities	18
Table 4	--	Data Eliminated Due to Data "Scrubbing"	25
Table 5	--	Effects of Discarding Usable Observations on Bradley's Estimates of the Volume Variability of Mail Processing Labor Costs	32
Table 6	--	Volume Variability Estimates from Bradley's "Between" Model	41
Table A-1	--	Results Obtained When Bradley's Errors-in-Variables Methodology Is Applied to All MODS Direct Activities	A-5

LIST OF FIGURES

Figure 1	Automatic vs. Manual Volume Variabilities	21
Figure 2	Manual Parcel Sorting Site #242 Threshold Criteria	28
Figure 3	Effects of Time Trend Variables in Bradley's Manual Letter Sorting Model	36
Figure 4	Effects of Time Trend Variables in Bradley's Manual Parcel Sorting Model	37

BEFORE THE
POSTAL RATE COMMISSION

POSTAL RATE AND FEE CHANGES, 1997

DOCKET NO. R97-1

DIRECT TESTIMONY OF
KEVIN NEELS
ON BEHALF OF
UNITED PARCEL SERVICE

1

QUALIFICATIONS

2

My name is Kevin Neels. I am a director at the management and economic consulting firm of Putnam, Hayes & Bartlett, Inc. I have provided economic research and consulting services for more than twenty years. Much of my work has involved the use of econometric analysis and has addressed issues relating to product costing in a wide range of areas.

3

4

5

6

7

I have analyzed pricing behavior in the context of allegations of antitrust violations and conducted numerous studies on the pricing of government services in areas ranging from municipal services to air traffic control. In connection with this and other work, I have frequently conducted investigations of costs for purposes of determining the total cost of providing a product or service, the costs associated with a specific product or service in the context of a multi-product firm, or the effects of incremental changes in volume on total profit. I have

10

11

12

13

1 developed econometric analyses for purposes of estimating damages in civil
2 litigation; of providing clients with forecasting capability; of estimating the effects on
3 sales of changes in product design, pricing, or promotion; and of analyzing the
4 structure of costs. I have also been called upon to provide critical evaluations of
5 econometric analyses developed by others.

6 Prior to joining Putnam, Hayes & Bartlett, Inc. I held a number of
7 responsible positions in economic research and consulting. I was previously vice
8 president in the Transportation Program at the economic consulting firm of Charles
9 River Associates, Inc., and senior economist at Abt Associates, a policy research
10 firm. I have also served as a senior research associate in the Systems Sciences
11 Division of the Rand Corporation and as an associate in the Transportation Studies
12 Program of the Urban Institute. I hold a Ph.D. and a B.A., both from Cornell
13 University.

14 NATURE OF MY ASSIGNMENT

15 In previous proceedings, the Commission has decided that mail
16 processing labor costs are 100 percent volume variable. In this proceeding, Postal
17 Service witness Michael D. Bradley (USPS-T-14) has introduced a study that
18 purports to demonstrate that mail processing labor costs do not vary fully with
19 changes in mail volume. Bradley's study is based on the econometric estimation of
20 a series of cost equations. These cost equations relate the number of labor hours
21 in specific activities, facilities, and accounting periods to the number of times
22 pieces of mail are handled in those activities, facilities, and accounting periods.

1 For activities at Management Operating Data System (MODS) facilities, Bradley
2 relies on data drawn from the Postal Service's MODS database. For Bulk Mail
3 Centers (BMCs), he relies upon data from the Productivity Information Reporting
4 System (PIRS) database, another operational database maintained by the Postal
5 Service for BMC activities.

6 I have been asked to review the approach used by Bradley and to
7 determine whether it provides accurate and reliable estimates of the volume
8 variability of mail processing costs that are suitable for use in rate setting. I have
9 also been asked to review Bradley's implementation of his approach and to assess
10 the soundness of the results that he presents. Finally, I have been asked to offer
11 an opinion in the light of all of the available evidence about how mail processing
12 costs should be treated in determining postal rates.

13 SUMMARY OF MY CONCLUSIONS

14 Bradley's econometric analysis does not provide a reliable basis for
15 determining the extent to which mail processing labor costs vary with volume.
16 Bradley's econometric equations look not at cost, but at labor hours. Before
17 determining whether labor hours are a suitable proxy for cost, one must either
18 estimate the extent to which compensation per hour varies with volume, or provide
19 some affirmative evidence that compensation per hour is independent of volume.
20 One can advance reasonable arguments to support either the contention that
21 compensation per hour increases with volume or that it decreases with volume.
22 Bradley presents no evidence that would permit a determination of which is the

1 case. In the absence of such evidence, the use of labor hours as a proxy for cost
2 could result in either an underestimate or an overestimate of volume variability.

3 Also, Bradley's econometric equations look not at volumes, but rather
4 at piece handlings, a measure of mail processing steps that is sensitive not only to
5 changes in volume, but also to changes in routing, sorting technology, error rates,
6 and other factors. Before determining whether piece handlings are a suitable proxy
7 for volume, one must first estimate the extent to which piece handlings vary with
8 volume, or provide some affirmative evidence that the two are directly proportional.
9 Once again, Bradley presents no evidence on this question. In the absence of
10 such evidence, the use of piece handlings as a proxy for volumes could result in
11 either an underestimate or an overestimate of volume variability.

12 Quite apart from these fundamental issues, there are a number of
13 problems with the implementation of Bradley's approach that raise serious
14 questions about the robustness, reliability, and relevance of his results. These
15 include:

- 16 (a) Reliance on a dataset whose ability to provide accurate estimates of
17 piece handlings has been questioned in internal Postal Service
18 investigations;
- 19 (b) Bias in volume variability estimates due to errors in the measurement
20 of mail volumes;
- 21 (c) Adoption of a set of highly subjective data "scrubbing" procedures
22 that result in the elimination from the analysis of enormous quantities

1 of otherwise usable data and that significantly alter the results of the
2 analysis;

3 (d) Use of a complex set of time trend variables that produces erratic and
4 counter-intuitive estimates of the effects of technological change.

5 Also, and perhaps most significant, Bradley's equations cannot provide accurate
6 estimates of the *long-run* response of costs to changes in volume.

7 These factors lead me to conclude that the new study introduced by
8 Bradley does not justify rejection of the Commission's well-established
9 determination that mail processing labor costs are fully volume variable. Common
10 sense indicates that labor costs should be fully variable. Simple, straight-forward
11 unadorned plots of the raw data tend to confirm this view. Bradley has failed to
12 provide convincing evidence to contradict the Commission's traditional position. I
13 recommend that the Commission stand by its traditional position and treat mail
14 processing labor costs as 100 percent volume variable.

15 If the Commission does elect to adopt some version of Bradley's
16 econometric analysis, I recommend adoption of his cross-sectional analysis as a
17 starting point. This analysis is better able to provide estimates of long-run volume
18 variability, and it is less subject to downward bias from errors in the measurement
19 of volume.

20 I recommend a number of changes to the cross-sectional model that
21 Bradley presents in his workpapers. The time trend variables that Bradley includes
22 in his recommended model have little meaning in a cross-sectional context and
23 should therefore be dropped. Also, the cross-sectional analysis needs to be

1 extended to all of the activities that Bradley considers. Furthermore, Bradley's
2 results are based upon a drastically reduced dataset that emerges from his
3 "scrubbing" process. This process results in the loss of an unacceptably large
4 portion of the available data. I have rerun Bradley's cross-sectional analysis on a
5 dataset that uses all of the data. The volume variability estimates resulting from
6 this improved cross-sectional analysis are summarized in Table 1.

7 Table 1 does not include volume variability estimates for the registry
8 and remote encoding activities because the amount of data available for analysis
9 for these two activities is very limited. I do not believe that it is adequate at this
10 time to support an econometric analysis of the volume variability of mail processing
11 labor costs. Hence, for these two activities I recommend that the Commission
12 reaffirm its earlier finding that mail processing labor costs are 100 percent volume
13 variable.

Table 1

Volume Variability Estimates Derived from
Modified Version of Bradley's Cross-Sectional Model

Activity	Results Based Upon the Full Sample*	Standard Errors
MODS Direct		
BCS Sorting	132%	0.0251
OCR Sorting	121%	0.0379
LSM Sorting	121%	0.0151
FSM Sorting	116%	0.0185
Manual Letter Sorting	125%	0.0293
Manual Flat Sorting	131%	0.0333
Manual Parcel Sorting	110%	0.0755
Manual Priority Mail Sorting	110%	0.0462
SPBS - Priority Mail Sorting	129%	0.1254
SPBS - Non Priority Mail Sorting	98%	0.0901
Cancellation and Mail Prep	109%	0.0490
MODS Allied		
Opening - Pref Mail	134%	0.0674
Opening - Bulk Business Mail	128%	0.1584
Pouching	131%	0.1709
Platform	146%	0.0646
BMC Direct		
Sack Sorting Machine	119%	0.1100
Primary Parcel Sorting Machine	159%	0.1904
Secondary Parcel Sorting Machine	89%	0.2705
Irregular Parcel Post	84%	0.1756
Sack Opening Unit	82%	0.0734
Non Machinable Outsides	78%	0.1982
BMC Allied		
Platform	45%	0.3565
Floor Labor	120%	0.5152

* Source: WP I.

1

DEFECTS IN BRADLEY'S APPROACH

2

**A. Bradley Fails to Use Appropriate Measures of Cost
and of Volume**

3

4

Any empirical study of the volume variability of costs must relate a suitable measure of cost to a suitable measure of volume. This is a fundamental threshold requirement. In Bradley's study, however, there is neither a true measure of cost, nor a true measure of volume.

5

6

7

8

1. *Hours Are Not a Suitable Proxy For Cost*

9

10

11

12

13

14

15

At the most basic level, "cost" is a quantity that is defined in monetary units. However, no such measure appears anywhere in Bradley's datasets or results. Instead, he focuses on labor hours "clocked" into the various activities he examines. Of course, labor hours and labor costs are related. That relationship is expressed by average compensation cost per labor hour. By definition, total labor costs are equal to the product of average compensation per labor hour times total labor hours.

16

17

18

19

20

21

22

But average compensation per hour is influenced by a variety of different factors. At a given facility and a given point in time, there will be a schedule that specifies hourly wage rates for different crafts, different levels of seniority, different types of employees (*i.e.*, permanent, casual, temporary, etc.), and for different types of time (*i.e.*, straight time, overtime, holiday time, etc.). This schedule of wages may be higher or lower, depending upon labor market conditions, inflation, collective bargaining agreements, and other factors. All else

1 equal, the higher these wage rates, the higher the average compensation per hour
2 will be.

3 Average compensation per hour will also be influenced, however, by
4 the *mix* of labor hours at a facility. A shift in the mix of hours toward more costly
5 types of time (such as overtime), higher paid crafts, more senior employees, or
6 more highly paid categories of employees will raise average compensation per
7 hour even if the wage schedule remains unchanged. The greater the range of
8 wage rates that are paid, the more powerfully average compensation per hour will
9 be influenced by changes in the mix of types of hours worked.

10 Bradley ignores the effects that changes in the mix of types of hours
11 have on average compensation per hour and therefore on total labor costs. He
12 asserts that:

13 For mail processing labor cost, the variations in mail
14 processing hours are the variations in cost.¹

15 This statement is not correct. For example, it is obvious that if wage
16 rates increase, costs will also increase even in the absence of a change in labor
17 hours. In addition, the cost associated with a given number of labor hours will also
18 increase if the *mix* of hours shifts in the direction of more highly paid types of time.
19 Overtime is perhaps the best illustration of the fallacy in Bradley's assertion that
20 hours are the same as cost; using hours as a proxy for costs will not capture the

1. Direct Testimony of Michael D. Bradley on Behalf of the United States Postal Service, USPS-T-14, p. 12 (emphasis added).

1 total impact of increased volume on costs when the increase in volume leads to a
2 need for higher paid overtime hours.

3 If either of these two factors -- the schedule of wage rates or the mix
4 of types of hours -- changes systematically with volume, this change will influence
5 the overall variability of mail processing costs. Because Bradley's analysis ignores
6 changes in average compensation per hour, it is not capable of determining
7 whether or the extent to which such volume-related effects exist or of factoring
8 them into his estimates of volume variability.

9 While one might argue that the schedule of wage rates is determined
10 largely by general labor market conditions rather than by mail volume, the same
11 cannot be said for the mix of types of time. There are a number of reasons for
12 believing that the mix of hours at a facility might vary systematically with volume.
13 High-volume periods could be characterized by the more extensive use of lower-
14 cost temporary or casual workers. Conversely, high-volume periods could require
15 the involvement of higher-cost senior or supervisory personnel in order to meet
16 mail processing schedules and maintain service standards. It is also possible that
17 maintenance of service standards during high-volume periods could involve greater
18 use of overtime and greater amounts of overtime pay.

19 We have no idea what the net effect is of these different factors. The
20 only way to determine whether average compensation per hour varies
21 systematically with volume and, if so, by how much, is to examine the relationship
22 between actual labor costs and volume. Bradley has not done this.

1 Bradley argues that his use of hours rather than cost to measure cost
2 variation with volume is a virtue rather than a limitation of his study. He
3 characterizes hours as "a 'real' variable that inflation does not influence." Hence,
4 he argues, "hours are directly comparable through time, and I do not have to adjust
5 them for inflation."²

6 These statements are not entirely correct. While it is true that by
7 focusing on hours Bradley has eliminated changes in costs that are associated with
8 shifts in the overall wage schedule rather than with volume, it is *not* true that the
9 resulting measure of hours is comparable across sites or across time, a
10 precondition for the use of labor hours as a proxy for costs. The hours of
11 supervisory personnel and skilled craftsmen are not the same as the hours of
12 unskilled casual workers. Nor is it even true that the straight time and overtime
13 hours of the same individual are comparable, since there are real resource cost
14 differences between the two types of time. Even after removing the effects of shifts
15 in the overall schedule of wages, these other differences remain. Bradley has not
16 dealt with them.

17 The need to account for changes in overall wage levels cannot serve
18 as a justification for failure to account for variations in the mix of hours. While it is
19 true that focusing on compensation costs would have necessitated adjustments for
20 the effects of inflation and changes in wage levels, such adjustments are not
21 difficult to make.

2. USPS-T-14, p. 13.

1 2. *"Total Piece Handlings" Is Not a Suitable Proxy For Volume*

2 It is also obvious that an econometric study of the variability of mail
3 processing costs with changes in volume should involve an analysis of changes in
4 the volume of mail delivered. On this count, too, Bradley's analysis comes up
5 short. With the sole exception of registered mail, Bradley's datasets and results
6 are devoid of any measure of the volume of mail actually delivered. Instead,
7 Bradley bases his conclusions on an analysis of piece handlings. This measure is
8 conceptually distinct from volume and, therefore, using it as a proxy for volume can
9 easily lead to erroneous conclusions regarding the volume variability of costs.

10 On its route toward final delivery, a particular item of mail will
11 generate an additional piece handling every time it passes through a processing
12 step. Thus, the more complex an item's routing, the more piece handlings it will
13 require. An item that passes through a single SCF will undergo less processing
14 than one that must travel through two SCFs, or one that goes from one SCF
15 through a BMC to another SCF, or one that must travel from an SCF through two
16 BMCs to another SCF. An item that requires both a primary and a secondary sort
17 will experience more piece handlings than one that requires only a single sort. A
18 presorted dropshipped item will require less processing than one that is deposited
19 in a corner mailbox with other unsorted items.

20 Even if Bradley is correct in his assertion that "[t]he primary driver of
21 costs in any activity is the number of pieces sorted in that activity,"³ he cannot draw

3. USPS-T-14, p. 13.

1 conclusions about the volume variability of costs from an analysis of piece
2 handlings without first considering the volume variability of piece handlings. If the
3 number of times a piece of mail is handled tends to decline with volume, Bradley's
4 analysis will overstate the volume variability of costs; if the number of times a piece
5 of mail is handled tends to increase with volume, Bradley's analysis will understate
6 the volume variability of costs.⁴

7 A variety of different factors could alter the relationship between piece
8 handlings and volumes. That relationship could be affected, for example, by: (1)
9 changes in the use of presort options by business mailers; (2) changes in the
10 proportion of intra-BMC or intra-SCF movements; or (3) modifications in mail
11 handling procedures that result in the addition or deletion of processing steps.

12 Changes in the relationship between piece handlings and volume
13 could mask significant diseconomies of scale. There are a variety of ways in which
14 this might happen. For example, increases in volume could lead to increases in
15 error sorting rates and could thereby result in mail having to be resorted after being
16 delivered to the wrong processing center. When such missorted mail arrives at the
17 incorrect destination, it would then have to reenter the processing stream and pass
18 a second time through the sequence of sorting and processing steps. Even though
19 the increase in error rates clearly leads to an increase in cost, Bradley's analysis

4. In cross examination on his testimony regarding purchased transportation costs, Bradley conceded that failure of a proxy measure of volume to directly track a true measure of volume can bias estimates of volume variability: "I did not study the relationship between cubic-foot miles and volume. And certainly I think to the extent that that second analysis had a lower variability than my capacity variabilities would be too high." Tr. 7/3823-24.

1 would incorrectly interpret this as an increase in productivity, since it would allow
2 the original sort to handle pieces in less time.

3 It is possible for the number of times an item is handled to increase
4 systematically with volume, even over the long term. At higher volumes it may
5 become economical to incorporate greater specialization and therefore also more
6 individual processing steps into the overall processing sequence.

7 Bradley has provided no information on the relationship between
8 piece handlings and volume. Without such information the Commission cannot
9 determine what his piece handling variability estimates imply for the volume
10 variability of mail processing costs.

11 **B. Flaws In Bradley's Implementation**

12 Apart from the fundamental deficiencies in conceptual approach
13 discussed above, there are a number of significant problems in the implementation
14 of this approach that call into serious question the reliability of its results. These
15 deficiencies have to do with the data sources relied upon, the "scrubbing" process
16 to which the data have been subjected, the treatment of technological change, and
17 the focus on the *short-run* response of hours to changes in piece handlings.
18 Correcting these problems generally results in higher estimates of variability. The
19 sensitivity of the results to changes in sample selection, model specification, and
20 method of estimation raises questions about whether these results are reliable
21 enough and stable enough to provide a sound foundation for ratemaking.

1 1. ***There Are Serious Shortcomings in the Piece Handling Data Used in***
2 ***Bradley's Econometric Analysis***

3 The data quality requirements for a sound econometric study exceed
4 those for simpler forms of analysis. Measurement errors that might cancel out in
5 the latter context can give rise to biased results when the same data are used to
6 develop regression equations. For this reason, it is essential to scrutinize data
7 sources carefully before using them in sophisticated econometric studies. Scrutiny
8 of Bradley's data source for Total Piece Handlings indicates potentially serious
9 problems.

10 The MODS piece handlings data that Bradley relies upon for major
11 portions of his analysis have been the target of considerable criticism. A recent
12 review of measurement systems conducted by the U.S. Postal Inspection Service
13 found large variances between the piece handling figures contained in the MODS
14 system and actual piece counts.⁵ These variances were attributed to a variety of
15 different causes, including inadequate conversion factors,⁶ improper data input,
16 and out-of-tolerance scales. The magnitudes of these variances could be
17 substantial. In one instance, the count projected by the MODS system for 57 trays

5. National Coordination Audit: Mail Volume Measurement and Reporting Systems, United States Postal Inspection Service, December 1996, LR-H-220.

6. In many situations, the MODS system records number of trays, sacks, or pounds of mail and then uses conversion factors to convert these estimates to piece counts. See LR-H-220, p. 8.

1 was 29,637 pieces, while the actual piece count was 17,842 pieces -- an error of 66
2 percent.⁷

3 In one of his interrogatory responses, Bradley claimed that "several of
4 the report's findings are irrelevant for my analysis because much of the data set
5 used in my analysis is not based upon FHPs [First Handling Pieces], but rather on
6 end-of-run data and machine counts."⁸ However, First Handling Pieces is a part of
7 the piece handling variable used by Bradley; the MODS Manual⁹ states clearly in
8 Section 212.2 that Total Piece Handlings is the sum of First Handling Pieces and
9 Subsequent Handling Pieces. Even if the MODS counts of downstream handlings
10 are totally free of the measurement problems that infect estimates of First Handling
11 Pieces, all of the problems surrounding the measurement of First Handling Pieces
12 are still passed forward into Bradley's analysis. The questions that have been
13 raised regarding the accuracy of the MODS piece handling data naturally lead one
14 to question whether the same problems infect the PIRS piece handling data upon
15 which Bradley based his analysis of BMC mail processing costs.

16 In fact, examination of Bradley's datasets reveals many problems.
17 There are, for example, hundreds of instances in which a site reports piece
18 handlings for a specific activity for only a single period out of the nine years
19 covered by Bradley's dataset. See Table 2, below. It is difficult to imagine actual
20 operational practices that would so frequently bring an activity to life for only a

7. LR-H-220, p. 8.

8. Tr. 11/5369.

9. LR-H-147.

1 single accounting period. Data entry errors, such as recording piece handlings
 2 under the wrong activity or with the wrong facility identifier, would seem to provide
 3 a more plausible explanation.

4

Table 2

5

6

7

Number of Instances in Which Piece Handlings
 Are Reported at a MODS Facility for a Direct
 Activity for Only a Single Accounting Period

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

Activity	Single Period Observations
MODS Direct	
BCS Sorting	59
OCR Sorting	40
LSM Sorting	62
FSM Sorting	43
Manual Letter Sorting	71
Manual Flat Sorting	68
Manual Parcel Sorting	67
Manual Priority Mail Sorting	41
SPBS - Priority Mail Sorting	12
SPBS - Non Priority Mail Sorting	23
Cancellation and Mail Prep	63
Total	549

Source: WP II.

25

26

27

28

29

30

There are also numerous reporting gaps in Bradley's datasets. See
 Table 3, below. Often an activity will "disappear" at a site for a single accounting
 period or for a number of accounting periods, only to reappear at a later date. It is
 possible, of course, for an activity to be temporarily shut down. However, the large
 number of instances in which this occurs suggests that it may also be common for
 the data simply not to make their way into the MODS system.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

Table 3

**Number of Instances in Which Gaps in Piece Handlings
Reported at a Facility Appear for MODS Direct Activities**

Activity	Length of Gap			Total Gaps
	Single Period Gaps	2-6 Period Gaps	6+ Period Gaps	
MODS Direct				
BCS Sorting	15	13	20	48
OCR Sorting	54	48	42	144
LSM Sorting	21	11	4	36
FSM	18	15	24	57
Manual Letter Sorting	38	3	11	52
Manual Flat Sorting	23	10	13	46
Manual Parcel Sorting	163	126	52	341
Manual Priority Mail Sorting	88	75	76	239
SPBS - Priority Mail Sorting	121	169	147	437
SPBS - Non Priority Mail Sorting	65	111	165	341
Cancellation and Mail Prep	35	22	23	80
Total:	641	603	577	1,821

25 Source: WP II.

26 Econometric studies are especially sensitive to data errors. It is a
27 well-established econometric principle that measurement error in an independent
28 variable causes downward bias in coefficient estimates. This result is stated
29 clearly in a recent text:

30 As long as σ_u^2 [the variance of the measurement error in
31 the independent variable] is positive, b [its estimated

1 coefficient] is inconsistent, with a persistent bias toward
2 zero. . . . The effect of biasing the coefficient toward
3 zero is called attenuation.¹⁰

4 Bradley acknowledges the possibility that his data on piece handlings
5 may be subject to measurement error:

6 When using operating data, there is always a concern
7 that the data might contain measurement error. If the
8 measurement error is in the dependent variable, hours,
9 it will simply be part of the specified error term in the
10 econometric regressions. If the measurement error is in
11 the right-hand-side variables, however, traditional least-
12 squares methods will not accurately account for it. This
13 is called the "errors-in-variables" problem.¹¹

14 Although Bradley correctly cites the existence of the errors-in-variables problem, he
15 fails to describe the full nature of the attenuation effect. In the specific context of
16 Bradley's analysis, the attenuation effect means that if there is measurement error
17 in the piece handlings variable, Bradley's analysis will *understate* the true volume
18 variability of mail processing labor costs.

19 The pattern of results reported by Bradley suggests that his results
20 may have been powerfully influenced by errors in the measurement of piece
21 handlings. There are a number of instances in which Bradley reports volume
22 variability estimates for both the manual and the automated sorting of the same
23 type of mail. In the automated sorting activities, the data on piece handlings come

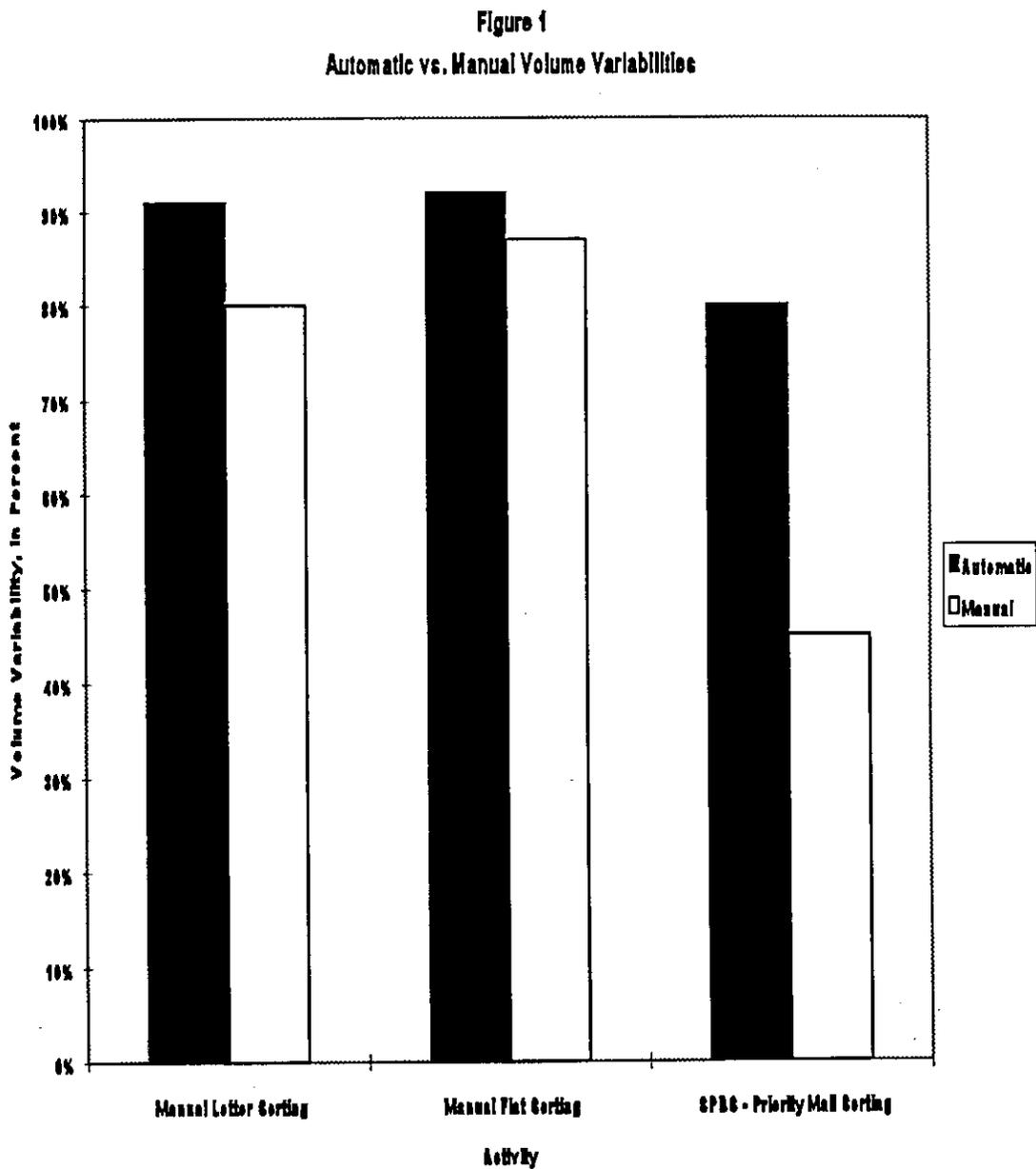
10. Greene, William H., *Econometric Analysis*, Third Edition, Prentice Hall, 1997, p. 437.

11. USPS-T-14, p. 80.

1 from counters on the machinery. In contrast, for manual activities, piece counts are
2 derived indirectly by applying conversion factors to measures of weight, cubic
3 volume, or some other proxy. One would expect, therefore, to find greater
4 measurement error and stronger attenuation effects in the manual activities.
5 Bradley's results confirm this expectation. Figure 1 shows Bradley's volume
6 variability estimates for the mechanized and manual sorting of letters, flats, and
7 Priority Mail. In every case the volume variability estimates are lower for the
8 manual activities, sometimes by a substantial margin.

1
2
3

Figure 1
Automatic vs. Manual Volume Variabilities



1 In his direct testimony Bradley presents the results of an analysis
2 that, he claims, quantifies the effects of measurement error in his piece handlings
3 variable. He does not derive his final estimates of volume variability from this
4 analysis, but he does use it to support an argument that "measurement error in
5 manual letter and flat piece handling volumes is not a critical problem for the
6 estimation of cost elasticities for those activities."¹² However, there are problems in
7 this analysis that call into question its ability to support these claims. Bradley
8 claims to have found *upward* bias in his estimate of the volume variability of the
9 manual letter sorting activity rather than the downward bias that Greene states is
10 the result of measurement error. As shown in Appendix A to my testimony, the
11 formulas that Bradley himself presents in his direct testimony show clearly that
12 upward bias is a mathematically impossible result. Bradley's finding of upward bias
13 is therefore a sign of serious and fundamental flaws in his analysis.

14 It is clear that the effect of measurement error in the piece handlings
15 variable is to cause Bradley to understate the true volume variability of mail
16 processing labor costs. Despite Bradley's attempt to quantify it, the magnitude of
17 this bias remains unknown. The analysis that Bradley puts forward to support his
18 claim that measurement error is not a critical problem is clearly unreliable. Both
19 this analysis and the claim based upon it should be ignored.

12. USPS-T-14, pp. 83-84.

1 **2. Bradley's Data "Scrubbing" Procedures Have Substantively Altered His Results**

2 Bradley's volume variability estimates are derived from a dataset that is
3 the end product of an extensive editing process in which enormous amounts of
4 data are eliminated from his analysis based solely on subjective criteria. The
5 volume variability estimates derived from this reduced dataset are substantially
6 different from those derived from the initial dataset, calling into question the
7 reliability of Bradley's estimates of volume variability.

8 In his direct testimony Bradley describes the elaborate, multi-step
9 process through which he discarded what he regarded as questionable data.
10 These steps included:

- 11 (a) Elimination of observations corresponding to periods in which the site is
12 just starting the activity, and in which volumes are thus still ramping up;¹³
13 (b) Elimination of all sites having less than 39 consecutive usable
14 observations in the activity under examination;¹⁴

-
13. This description is based upon statements contained in Bradley's direct testimony, USPS-T-14, p. 30, lines 22-25. Since the filing of that testimony, his rationale for this particular step in the "scrubbing" process has changed somewhat. Examination of the computer programs used to do the "scrubbing" had indicated that this step in the process had eliminated not just observations corresponding to the first periods in which an activity was present at a facility, but also long runs of observations in the middle of the reporting periods for some established sites. When asked about this under cross-examination, Bradley indicated that his "general intent was to eliminate from the data any period in which the level of activity fell below this minimum, normal operating activity." Tr. 11/5571.
14. For the allied activities he required 26 consecutive observations. Tr. 11/5475.

- 1 (c) If a site has more than one run of 39 or more consecutive usable
2 observations in the activity under examination, elimination of all runs for
3 that site but the most recent;¹⁵
- 4 (d) Elimination of observations corresponding to high or low productivities in
5 the activity under examination;
- 6 (e) If the elimination of high or low productivity observations results in a site
7 having less than 39 consecutive observations that have survived all
8 previous steps in the process, elimination of the site from the analysis;
9 and
- 10 (f) If the elimination of high or low productivity observations results in a site
11 having more than one run of 39 consecutive observations that have
12 survived all previous steps in the process, elimination of all runs for that
13 site but the most recent.

14 This process eliminates an enormous amount of otherwise usable data.
15 Details for the 23 activities Bradley "scrubs" are presented in Table 4, below. In 21
16 of the 23 activities, he discards over ten percent of the data. In seven cases he
17 discards over 20 percent of the data. In two cases he discards over 30 percent of
18 the data, and in one case -- SPBS Priority -- he throws away a staggering 49
19 percent of the potentially usable data. Across all of his models he discards over
20 50,000 observations.

15. For the allied activities he required 26 consecutive observations. Tr.
11/5475.

Table 4

Data Eliminated Due to Data "Scrubbing"

Activity	Usable Observations [4]	Observations Discarded [5]	Observations Remaining [6]	Percent Discarded [7]
MODS Direct [1]				
BCS Sorting	26,426	3,402	23,024	12.87%
OCR Sorting	21,345	2,614	18,731	12.25%
LSM Sorting	23,251	3,278	19,973	14.10%
FSM Sorting	21,544	3,382	18,162	15.70%
Manual Letter Sorting	28,648	3,558	25,090	12.42%
Manual Flat Sorting	28,504	4,215	24,289	14.79%
Manual Parcel Sorting	24,814	7,235	17,579	29.16%
Manual Priority Mail Sorting	21,914	5,977	15,937	27.27%
SPBS - Priority Mail Sorting	3,903	1,906	1,997	48.83%
SPBS - Non Priority Mail Sorting	6,775	2,053	4,722	30.30%
Cancellation and Mail Prep	26,280	6,470	19,810	24.62%
MODS Allied [2]				
Opening - Pref Mail	19,834	2,978	16,856	15.01%
Opening - Bulk Business Mail	17,560	3,123	14,437	17.78%
Pouching	17,122	2,263	14,859	13.22%
Platform	19,684	2,032	17,652	10.32%
BMC Direct [3]				
Sack Sorting Machine	1,916	159	1,757	8.30%
Primary Parcel Sorting Machine	2,094	196	1,898	9.36%
Secondary Parcel Sorting Machine	2,069	211	1,858	10.20%
Irregular Parcel Post	2,032	367	1,665	18.06%
Sack Opening Unit	2,094	511	1,583	24.40%
Non Machinable Outsides	2,094	267	1,827	12.75%
BMC Allied [3]				
Platform	2,094	318	1,776	15.19%
Floor Labor	2,094	435	1,659	20.77%

Sources:

[1] LR-H-148-7, Table H148-1

[2] TR. 11/5447

[3] Tr. 11/5448

[6] = [4] - [5]

[7] = [5]/[4]

1 The extreme lengths to which Bradley takes his "scrubbing" process raise
2 a number of significant questions. How can one be sure that the data that are
3 "scrubbed" away contain errors and not important information about how costs vary
4 with volume? How justifiable are the subjective criteria Bradley used in deciding
5 which observations to discard and which to retain? How have the character of
6 Bradley's results been affected by his decisions to discard large portions of the
7 data? And, of course, if the datasets Bradley is using are so dirty as to require such
8 extreme clean-up measures, how reliable can the conclusions be that are derived
9 from them?

10 How can one be sure that the data that are "scrubbed" away contain
11 errors and not important information about how costs vary with volume? One
12 cannot. Bradley cites no external evidence that could be used to provide
13 independent verification of the accuracy or inaccuracy of any of his data. His
14 "scrubs" eliminate observations that look "unusual" relative to other observations in
15 the dataset. The fact that they may look unusual to a particular observer can be
16 attributed to either of two causes. It is possible that what was in fact going on at
17 the site was quite normal, but that the data were recorded incorrectly. In such
18 cases, the elimination of observations might be appropriate. However, it is also
19 possible that the data were in fact recorded correctly but look unusual even though
20 they are normal for that site. In the latter case the elimination of observations is
21 harder to justify. The rates that will be set as a result of these proceedings will
22 apply to all facilities, so they should reflect the variability of costs at all facilities,
23 both "usual" and "unusual."

1 It is very possible that such "unusual" observations contain the most
2 information about the true relationship between cost and volume. A site that has
3 experienced an enormous increase in volume may well be unusual, but it may also
4 provide the clearest possible picture of how processing costs vary with volume. It
5 is for this very reason that Dennis Cook, an authority on the analysis of outliers,
6 has warned against discarding an observation simply because it exerts a
7 disproportionate influence over the estimated regression results:

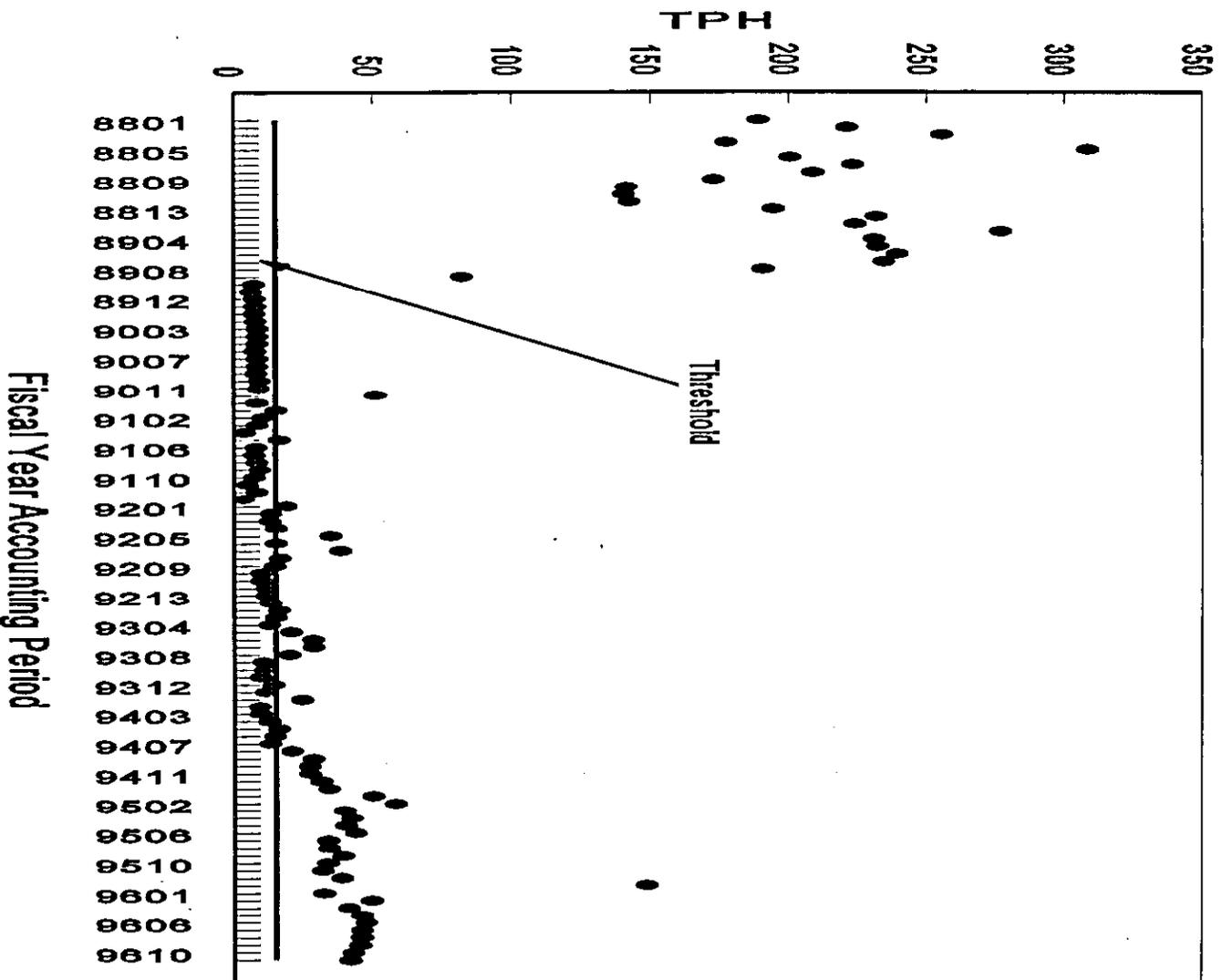
8 . . . influential cases are not necessarily undesirable.
9 Often, in fact, they can provide more important information
10 than most other cases.¹⁶

11 Bradley's decision to eliminate observations involving low levels of piece
12 handlings also raises questions about the representativeness of his results.
13 Examination of the data reveals sites that exhibit low levels of piece handlings over
14 extended periods of time. See, for example, Figure 2, below. The relationship
15 between piece handlings and hours at such sites is part of the normal overall
16 relationship between piece handlings and hours. If these observations have been
17 systematically eliminated from Bradley's analysis, we have no reason to believe
18 that his results are applicable to their circumstances. To give such sites and
19 observations appropriate weight, one needs to include their data in the analysis.

16. R. Dennis Cook and Sanford Weisberg, Residuals and Influence in Regression, Chapman and Hall (1982), p. 104.

1
2

Figure 2
Manual Parcel Sorting Site #242 Threshold Criteria



1 Bradley's decision to include only sites that have 39 periods of
2 continuous data appears to be especially arbitrary. There is nothing about
3 Bradley's models or analysis that mandates such a requirement. Bradley's models
4 include piece handlings for both the current accounting period and the preceding
5 accounting period. Hence, in order for a data point to be included in the estimation
6 of his fixed effects model, it is necessary only that complete data be available for
7 two consecutive accounting periods. In order for a data point to be included in the
8 estimation of his fixed effects model with serial correlation, it is necessary only that
9 complete data be available for three consecutive accounting periods. None of his
10 programs or calculations inherently requires data for 39 consecutive accounting
11 periods.

12 The requirement that a site have complete data for 39 consecutive
13 accounting periods accounts for the largest portion of the observations that are
14 discarded as a result of Bradley's "scrubbing" procedures. Bradley fails to present
15 a rigorous defense of his decision to discard observations with such abandon.
16 Discussing his continuity requirement in his direct testimony, Bradley simply states:

17 The time dimension is an important part of the nature of
18 panel data and if possible, it is preferable to have
19 continuous data. Continuous data facilitate the estimation
20 of accurate seasonal effects, secular non-volume trends,
21 and serial correlation corrections.¹⁷

22 Nothing in this statement refers to his specific decision to require three
23 years of consecutive data, and the assertions which it does contain are not entirely

17. USPS-T-14, p. 31.

1 correct. Estimation of accurate seasonal effects requires simply that the dataset
2 contain adequate numbers of usable observations in each of the different seasonal
3 periods, a requirement that is easily met. It is not necessary that they occur
4 consecutively. Similarly, estimation of accurate secular non-volume trends requires
5 only that the dataset provide adequate coverage of all of the dates within the
6 overall sample period. Again, it is not necessary that they occur consecutively.

7 Estimation of accurate serial correlation corrections does require
8 consecutive observations in order to make it possible to relate prediction errors in
9 one period to prediction errors in the prior period. However, only two consecutive
10 observations are needed to contribute to the estimation of the Baltagi-Li serial
11 correlation coefficient. To contribute to the estimation of the final fixed effects
12 model with serial correlation correction, three consecutive observations are
13 required. Neither estimation requires 39 consecutive observations.

14 Bradley's decision to discard huge volumes of data has had a substantial
15 effect on his results. To illustrate this point, I reran his econometric analyses on
16 the full dataset using all of the observations for which complete data were
17 available. The results of this exercise are shown in Table 5 below, which also
18 compares the estimated volume variabilities to those reported by Bradley. The
19 results differ sharply from those presented by Bradley in his direct testimony.
20 Using the full dataset produces volume variabilities that are often higher than those
21 reported by Bradley. For example, using the full dataset raises the estimated
22 volume variability for the MODS OCR sorting activity from 79 percent to 83 percent.
23 The estimated variability for MODS LSM sorting increases from 91 percent to

- 1 98 percent. For MODS bar code sorting, variability increases from 95 percent to
- 2 108 percent, indicating the presence of diseconomies of scale in this activity.
- 3 Dramatic changes occur for most activities.

Table 5

Effects of Discarding Usable Observations on Bradley's
Estimates of the Volume Variability of Mail Processing Labor Costs

Activity	Bradley's "Scrubbed" Data [1]	All Usable Observations [2]
Estimated Volume Variability of Mail Processing Labor Costs		
MODS Direct		
BCS Sorting	95%	106%
OCR Sorting	79%	83%
LSM Sorting	91%	97%
FSM Sorting	92%	102%
Manual Letter Sorting	80%	84%
Manual Flat Sorting	87%	90%
Manual Parcel Sorting	40%	32%
Manual Priority Mail Sorting	45%	42%
SPBS - Priority Mail Sorting	80%	73%
SPBS - Non Priority Mail Sorting	47%	36%
Cancellation and Mail Prep	65%	53%
MODS Allied		
Opening - Pref Mail	72%	79%
Opening - Bulk Business Mail	74%	108%
Pouching	83%	81%
Platform	73%	76%
BMC Direct		
Sack Sorting Machine	99%	94%
Primary Parcel Sorting Machine	86%	85%
Secondary Parcel Sorting Machine	97%	77%
Irregular Parcel Post	75%	62%
Sack Opening Unit	72%	92%
Non Machinable Outsides	67%	61%
BMC Allied		
Platform	53%	31%
Floor Labor	60%	81%

Source:

[1] USPS-T-14, p. 9

[2] WP IV

1 One should always be suspicious of decisions to discard data when
2 those decisions alter the conclusions of the analysis in substantively important
3 ways. One of the key elements of the scientific method is its emphasis on the
4 reproducibility of results. If Bradley has done his work correctly, it should be
5 possible for someone to independently replicate his analysis and arrive at the same
6 conclusions. Independent replication is more than simply rerunning Bradley's
7 computer programs to produce the same set of computer outputs. It means being
8 able to follow each of the steps of the analysis and verify that each of the specific
9 actions taken is an appropriate response to the problems encountered. Bradley
10 has chosen to require 39 consecutive observations in order to include a site in his
11 analysis of MODS direct activities. Yet, Bradley himself has indicated that 26
12 consecutive observations may be sufficient.¹⁸ Results that depend strongly on
13 such specific judgment calls regarding which data points to include and which to
14 discard do not pass this test. From an economic and policy perspective, decisions
15 to discard data whose implications are this significant require greater and more
16 objective empirical and conceptual justification than Bradley has provided.

18. Tr. 11/5450.

1 **3. Bradley's Results Imply Implausible Patterns of Technological Change**

2 Bradley has included in his cost equations a number of time trend
3 variables intended to account for the effects on productivity of changes in mail
4 sorting technology. The manner in which Bradley has introduced time trends into
5 his models is rather complex. First, he introduces not one time trend variable, but
6 two. Both of these trend variables are mean-centered, along with his other
7 variables. Both are entered into the equations in both linear and squared forms.
8 Interaction terms between the time trends and the other independent variables in
9 the model are also included. The specification that Bradley uses for the MODS
10 direct activities includes eight estimated coefficients for terms involving the time
11 trend variables.¹⁹

12 In his direct testimony Bradley explains their presence as follows:

13 Thus, in my equations, the time trend's coefficient measures
14 the rate of growth (or decline) in hours *not* attributable to
15 increases (or decreases) in piece-handlings. A trend
16 approach is particularly well suited for looking at mail
17 processing labor costs because changes in technology
18 generate smooth changes in mail processing productivity.²⁰

19 This statement accurately describes the rationale for the use of time
20 trend variables to capture the effects of technological change. Such change is
21 driven by the gradual accumulation of knowledge and improvement in technique
22 and by their diffusion into practical application. The use of time trends for the

19. This specification is presented as equation (2) on page 36 of USPS-T-14.

20. USPS-T-14.

1 econometric measurement of the effects of technological change is motivated by
2 the expectation (shared by Bradley) that the effects of such change would be
3 manifested in a steady and gradual improvement in productivity.

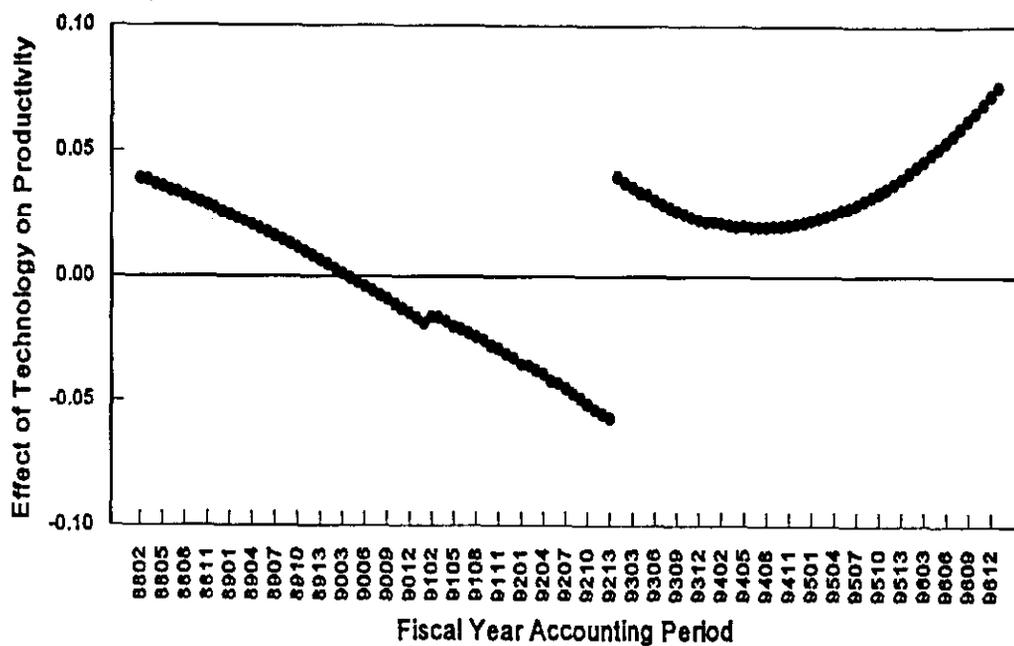
4 In Bradley's analysis we have even more reason to expect the effects of
5 technological change to be manifested in smooth and steady changes in
6 productivity. Bradley's activity-based analysis examines each sorting technology in
7 isolation. Because he examines manual sorting and automated sorting separately,
8 we will never observe in his results the discontinuous jumps in productivity that can
9 result from changes such as the move from manual to automated sorting. Instead,
10 we should see the effects of gradual refinements of the equipment and
11 improvement in workers' familiarity with its operation. We thus have strong
12 reasons to expect the effects of technological change in Bradley's analysis to result
13 in a steady and gradual improvement in productivity.

14 However, the pattern of technological change implied by Bradley's time
15 trend results can best be described as one of lively variation rather than smooth
16 and steady change. His models contain so many terms involving time trends that
17 their effects are hard to summarize.

18 Figures 3 and 4 show results for the manual letter sorting and manual
19 parcel sorting activities. In each case, the horizontal axis shows the time period
20 covered by Bradley's analysis. The vertical axis shows the products of the time
21 trend variables and their estimated coefficients.

1
2
3

Figure 3
Effects of Time Trend Variables in Bradley's
Manual Letter Sorting Model

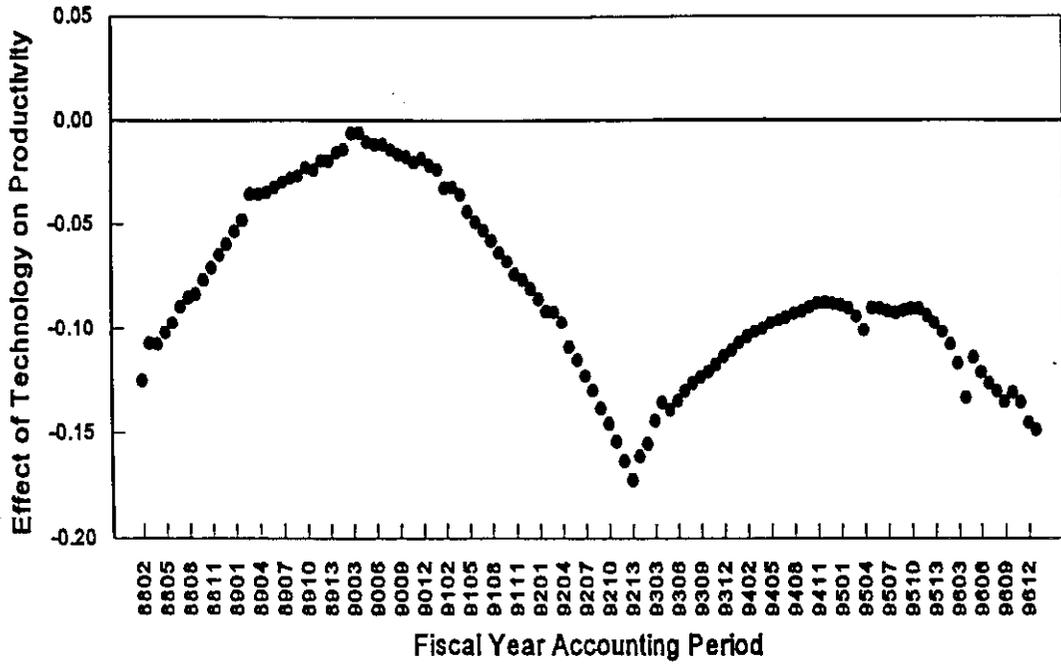


4

Source: WP VI.

1
2
3

Figure 4
Effects of Time Trend Variables in Bradley's
Manual Parcel Sorting Model



4

Source: WP VI.

1 The patterns revealed in these two manual activities are complex, and
2 strikingly different. In manual letter sorting we see an initial period of sharply
3 declining productivity. Then, suddenly, in the beginning of 1993 there is a large
4 and discontinuous jump in productivity. From that point on productivity continues to
5 rise for a time, but eventually it levels off and then begins to decline. Again, in
6 manual parcel sorting we see a period of rising productivity, followed by a period of
7 falling productivity, followed by a period of rising productivity, followed by a period
8 of falling productivity.

9 The results presented in Figures 3 and 4 are indicative of the general
10 patterns that appear in Bradley's time trend results. In Bradley's world,
11 technological progress is neither gradual nor smooth. Nor does it always move in a
12 positive direction. At the same points in time one finds some activities rapidly
13 gaining in efficiency, while others show losses. One also finds discontinuous jumps
14 and declines and rapid alterations between increases and decreases in
15 productivity.

16 The magnitudes of these shifts are not trivial. The vertical axes in
17 Figures 3 and 4 are measured in terms of percentages of average labor hours in
18 the activity. In the case of manual parcel sorting, the gap between the lowest
19 efficiency point and the highest efficiency point amounts to approximately 17
20 percent of labor hours. In the case of manual letter sorting it amounts to
21 approximately 13 percent.

22 The pattern of Bradley's time trend results causes me to question his
23 interpretation of their meaning. Although he has alluded to a "major restructuring"

1 that took place in FY 1993, he has not explained the nature or significance of this
2 change. Moreover, he has provided little substantive explanation of what changes
3 could account for such erratic patterns within the periods prior to and following the
4 restructuring. I am hard pressed to envision a pattern of technological change that
5 would produce such variations in productivity, and hence I do not believe that his
6 time trend coefficients are really picking up the effects of technological progress.

7 **C. Bradley's Analysis Sheds Little Light on the**
8 **Long-Run Volume Variability of Costs**

9 The fixed effects models that Bradley relies upon for his variability
10 estimates do not appear to be capable of providing reliable estimates of the long-
11 run variability of mail processing labor costs. Those models relate mail processing
12 labor hours in a four-week accounting period to the number of piece handlings in
13 that same period and in the previous period. Because these models look back only
14 a single accounting period, they are not capable of detecting or accounting for
15 changes that take place over longer periods of time. Their short-run view of labor
16 cost variability calls into question their relevance to this proceeding.

17 The extent to which mail processing labor costs vary with volume will
18 depend upon the time horizon over which volumes and costs change. It is possible
19 that productivity might increase in response to a temporary surge in volume.
20 Workers might increase the pace of work, take fewer or shorter breaks, or adopt
21 other strategies for dealing with the added workload. In his responses to

1 interrogatories, Bradley concedes this point.²¹ Such increases in productivity may
2 not be sustainable, however, and if the increase in volume persists it may
3 eventually be necessary to hire additional workers to handle the increased
4 workload. Thus, after an initial surge it is likely that productivity would decline to
5 something closer to its original level. Over an even longer period of time,
6 increases in volume could facilitate greater reliance on specialization or automation
7 and thereby lead to higher productivities. Thus, the estimate that one gets for the
8 volume variability of mail processing labor costs may differ, depending upon how
9 long a time is allowed for costs to respond to changes in volume.

10 In past proceedings, the Commission has relied upon evidence of the
11 long-run volume variability of costs in its findings regarding the attribution of costs.
12 "Long-run," in this context, has been interpreted as changes that occur over
13 periods longer than a year.²² The eight week adjustment period provided for in
14 Bradley's fixed effects models falls well short of this threshold.

15 **BRADLEY'S CROSS-SECTIONAL MODEL**
16 **PROVIDES SUPERIOR RESULTS**

17 In his workpapers, Bradley presents regression results for what he calls
18 the "between" model for each of the mail processing activities he examines. These
19 "between" models are essentially cross-sectional versions of the specification he

21. Tr. 11/5512.

22. National Association of Greeting Card Publishers v. United States Postal Service, 462 U.S. 810, 815-16 (1983).

1 uses in his fixed effects analysis. The volume variability estimates produced by
 2 these cross-sectional models are presented in Table 6.

3 **Table 6**
 4 **Volume Variability Estimates from**
 5 **Bradley's "Between" Model**

Activity	Volume Variability
MODS Direct	
BCS Sorting	113%
OCR Sorting	111%
LSM Sorting	105%
FSM Sorting	103%
Manual Letter Sorting	106%
Manual Flat Sorting	110%
Manual Parcel Sorting	99%
Manual Priority Mail Sorting	107%
SPBS - Priority Mail Sorting	120%
SPBS - Non Priority Mail Sorting	93%
Cancellation and Mail Prep	108%
MODS Allied	
Opening - Pref Mail	109%
Opening - Bulk Business Mail	110%
Pouching	99%
Platform	133%

24 Source: USPS-T-14 WP I and II

25 The results of Bradley's cross-sectional analysis appear to provide a
 26 superior basis for estimating the volume variability of mail processing labor costs.
 27 They are more likely to show long-run effects, and they are less sensitive to data
 28 quality problems and to judgments about how to "scrub" the data.

29 Adoption of a cross-sectional approach de-emphasizes the effects of
 30 short-term increases and decreases in volume, focusing the analysis instead on the

1 long-run effects of changes in mail volumes. A cross-sectional approach
2 emphasizes the contrast between facilities that differ systematically in the volume
3 of mail they process and that have had the chance to adjust fully to those
4 systematic differences. Indeed, one would expect decisions regarding staffing
5 levels, degree of automation, layout of the processing flows, and other significant
6 factors affecting the volume variability of processing costs to be closely related to
7 the volumes typically processed at a facility.

8 Under cross-examination on his testimony regarding purchased
9 transportation costs, Bradley readily conceded the ability of cross-sectional
10 analysis to yield simpler and more direct estimates of the volume variability of
11 costs:

12 And one of the advantages of a cross-sectional analysis is it
13 allows me to estimate how quickly cost rises or falls with
14 increases or decreases in volume without the necessity of
15 tracing the size of total accrued cost through time.²³

16 Later he conceded that cross-sectional analysis is not just an appropriate way to
17 address these issues, but also perhaps the more common approach:

18 However, another approach which is widely used, perhaps
19 even more so for the type of analysis I'm doing, is to, for a
20 cross-section of facilities or in this case contracts, collect
21 the information on costs and cubic-foot miles and use the
22 variation between the small contracts, that is small cubic-

23. Tr. 7/3809.

1 foot miles, and the large cubic-foot miles, to measure how it
2 is costs vary with cubic-foot miles.²⁴

3 He concluded with a strong affirmation of the relevance of cross-sectional analysis:
4 ". . . I believe it's an entirely valid methodology to collect a cross-sectional cross-
5 section of data and to analyze . . . how it is costs increase with cubic-foot miles."²⁵

6 Bradley's between model offers advantages over and above those cited
7 in his purchased transportation testimony. Cross-section results are less subject to
8 attenuation due to errors-in-variables bias than his fixed effects model results. He
9 constructs the observations that enter into his cross-sectional analysis by
10 averaging across time periods the values for the dependent and independent
11 variables associated with each facility. The averages created in this way become
12 the inputs to his cross-sectional regression model. In this averaging process,
13 instances of over-estimation and under-estimation of piece handlings will tend to
14 cancel out, with the result that net measurement error in the independent variables
15 will become proportionately less significant.

16 The volume variabilities implied by the cross-sectional models are often
17 higher than those reported by Bradley and are generally very close to 100 percent
18 (or greater than 100 percent, implying diseconomies of sale). The differences
19 between the cross-sectional results and the fixed effects results can be attributed to
20 the fact that the cross-sectional results are closer to the long-run volume
21 variabilities and are less subject to attenuation effects caused by measurement

24. Tr. 7/3813-14.

25. Tr. 7/3814.

1 error in the piece-handlings variables. For these reasons, the cross-sectional
2 results provide a more appropriate basis for the attribution of mail processing labor
3 costs.

4 **BRADLEY HAS NOT DEMONSTRATED THAT VOLUME**
5 **VARIABILITY IS LESS THAN 100 PERCENT**

6 Bradley's analysis is not sufficiently reliable to justify rejection of the
7 Commission's established determination that mail processing labor costs are 100
8 percent volume variable. Taken at their plain face value, these analyses do not
9 address the right question, nor do they use the right variables.

10 Even if one were to set aside concerns about the appropriateness of
11 Bradley's measures of cost and volume, ample reasons for skepticism remain.
12 Many aspects of his data, his sample selection criteria, his model, and his results
13 seem questionable. His econometric results do not appear to be stable. Changes
14 in approach, or even changes in data "scrubbing" criteria, lead to substantially
15 different results. Moreover, there is good reason to believe that his econometric
16 estimates understate the true variabilities.

17 **A RELIABLE ECONOMETRIC ESTIMATE**
18 **OF VOLUME VARIABILITY?**

19 The points discussed above indicate the presence of serious problems
20 with Bradley's econometric results. The Commission should not use those results
21 to draw any conclusions regarding the volume variability of mail processing labor
22 costs. Nonetheless, it is necessary at times to make policy decisions even in the

1 absence of definitive empirical information. This fact logically raises an important
2 question: If the Commission is seeking the best econometric estimate of volume
3 variability that is achievable given the available data and resources, to which set of
4 results should they turn? This section of my testimony attempts to answer that
5 question.

6 **A. Bradley's Cross-Sectional Model Provides**
7 **An Appropriate Starting Point**

8 As I have stated, the most accurate and reliable estimates of the volume
9 variability of mail processing labor costs to be found in Bradley's results are those
10 provided by the cross-sectional analysis embodied in his "between" models. My
11 reasons for this belief are set forth above, but are worth repeating here. Most
12 important, the cross-sectional approach is inherently better able to provide
13 estimates of long-run volume variability. Also, the averaging across time that is
14 part of the cross-sectional model development process mitigates some of the
15 deleterious effects of the measurement error problems in the MODS and PIRS
16 piece handlings data.

17 **B. Some Modifications of Bradley's Cross-Sectional**
18 **Model Are Appropriate**

19 If the Commission were to rely upon an econometric analysis of mail
20 processing labor cost variability, two modifications to Bradley's "between" model
21 results would be in order. I recommend dropping the time trend variables and
22 interaction terms from the model. In Bradley's fixed effects analysis, these

1 variables give rise to some curious coefficient estimates that raise questions about
2 whether they are in fact capturing the effects of technological change. In the cross-
3 sectional context, they have little meaning. Also, it is clearly necessary to extend
4 Bradley's "between" approach to all of his activities.

5 **C. Data "Scrubbing"**

6 If the Commission decides to rely upon an econometric approach to the
7 estimation of volume variability, it will have to decide how much "scrubbing" of the
8 data is appropriate. In the absence of any external validity checks, it is hard to find
9 a clear and objective basis for deciding which data to use and which data to
10 discard. For this reason, as described above, the best approach is to dispense
11 with all of the "scrubbing" and run the analyses on the full set of data.

12 Bradley's "threshold" scrub seems designed systematically to eliminate
13 certain types of facilities or time periods from his analysis. Since these facilities
14 and time periods do exist and their effect on costs must be dealt with in the rate
15 setting process, I see no justification for eliminating them from the analysis. In fact,
16 eliminating them almost guarantees that the results will not be representative of the
17 cost-volume relationship that actually exists over all postal facilities. I therefore
18 recommend dropping the threshold "scrub." For similar reasons, I would
19 recommend against adoption of Bradley's "productivity" scrub. It systematically
20 eliminates observations and reduces the representativeness of Bradley's analysis
21 sample. Finally, I would also recommend dropping the continuity "scrubs." They
22 have no clear justification in the context of the fixed effects model and even less in

1 the context of the cross-sectional analysis. They also result in the elimination of
2 large numbers of observations from the analysis.

3 Econometric estimates of the volume variability of mail processing labor
4 costs that are based upon these recommendations are presented on page 7 above,
5 in Table 1.

6 **D. Implementation of These Changes Still Leaves**
7 **a Model That Fails to Consider Either Actual**
8 **Costs or Actual Volumes**

9 Implementation of all of the recommendations presented above will still
10 result in a model that (1) fails to include either a true measure of cost or a true
11 measure of volume and (2) relies heavily on a data source of uncertain and
12 unproven accuracy. As a result, I recommend that the Commission stand by its
13 long-established determination that mail processing labor costs are 100 percent
14 variable.

15 **CONCLUSION**

16 Bradley's econometric analysis contradicts the common sense conclusion
17 that labor is inherently a highly variable cost factor. Bradley urges the Commission
18 to reject its traditional treatment of mail processing labor costs as 100 percent
19 variable in favor of an alternative approach that would move significant portions of
20 mail processing labor costs into the institutional cost category. A call for such a
21 sweeping departure from precedent bears a substantial burden to support the

1 assertion that such a departure is in fact warranted. Bradley has not met this
2 burden.

3 At the most basic level, Bradley has failed to address the questions that
4 are really relevant to this proceeding. His analysis fails to include a true measure
5 either of cost or of volume. He cannot, therefore, claim to have measured
6 accurately the volume variability of costs. His model also adopts an excessively
7 short-term view of volume variability; it is constructed to allow for a complete
8 adjustment of costs to a change in volume in two accounting periods and can
9 reflect only the changes that take place over that brief period. The relevance of
10 such short-run effects to the process of setting rates that will remain in effect for
11 years is highly questionable.

12 Moreover, there are a number of problems with the implementation of
13 Bradley's econometric analyses. He has relied heavily on data of uncertain
14 accuracy. He has discarded from his analysis huge volumes of data on the basis of
15 highly subjective judgments. These exclusions have substantially altered the
16 character of his empirical results. His empirical results do not appear to be robust;
17 equally defensible changes in approach lead to quite different estimates of the
18 volume variability of mail processing labor costs.

19 For all of these reasons, Bradley's results should be rejected. He has not
20 offered a compelling reason for the Commission to reject its traditional approach to
21 mail processing labor costs. In fact, a more appropriate cross-sectional analysis
22 suggests that the traditional, common sense conclusion that mail processing labor
23 costs are 100 percent volume variable is correct.

1

APPENDIX A

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

The essence of Bradley's errors-in-variables analysis involves the comparison of two alternative estimators of volume variability that are subject to differing degrees of attenuation. The comparison of the two estimates, Bradley claims, allows him both to quantify the degree of measurement error in piece handlings and to determine the true value of volume variability. The formulas showing the magnitudes of the attenuation effects for the two alternative estimators are shown in equations (19) and (21) on pages 81 and 82 of Bradley's direct testimony (USPS-T-14). Combining these two expressions, Bradley derives the formula shown in equation (22) on page 82 of USPS-T-14 for the true value of volume variability. Equation (22) is derived from equations (19) and (21) by replacing the probability limits shown there with the two estimated coefficient values, combining the two resulting expressions, and solving for the true value of volume variability. Equation (22), therefore, is derived from and depends upon the accuracy of equations (19) and (21).

Both equation (19) and equation (21) demonstrate the attenuation effects cited by Greene. Equation (19) takes the following form:

$$\text{plim}\hat{\beta}_f = \beta \left[1 - \frac{(T-1)\sigma_\psi^2}{T\text{Var}(x_{ii}^* - \bar{x}_i^*)} \right]$$

1 where $\hat{\beta}_f$ is the estimate of volume variability generated by the fixed effects
 2 estimator, β is the true volume variability, T is the number of time periods in the
 3 dataset, σ_ψ^2 is the variance of the measurement error in the piece-handlings
 4 variable, x_{it}^* is the recorded number of piece handlings for site i in period t , and
 5 \bar{x}_i^* is the average across all time periods of the recorded piece handlings for site i .

6 This equation shows that the estimate of volume variability provided by
 7 the fixed effects estimator will be equal to the true volume variability multiplied by a
 8 term that is equal to one minus the ratio of two variances. Since variances must be
 9 positive, the ratio of the two variances will also be positive. Hence, the estimated
 10 volume variability will be equal to the true volume variability multiplied by a number
 11 less than one. In other words, the estimated variability will be less than the true
 12 variability.

13 Analysis of equation (21) yields a similar result. That equation takes the
 14 following form:

$$\text{plim}\hat{\beta}_d = \beta \left[1 - \frac{2\sigma_\psi^2}{\text{Var}(x_{it}^* - x_{i,t-1}^*)} \right]$$

15 where $\hat{\beta}_d$ is the estimate of volume variability generated by the first difference
 16 estimator. For the same reasons as those set forth above, the estimate of volume
 17 variability provided by the first difference estimator will be equal to the true volume

1 variability multiplied by a number less than one. Again, the estimated variability will
2 therefore be less than the true variability.

3 These mathematical facts call into question the reliability of the estimates
4 of the true volume variabilities presented by Bradley in Table 17 on page 84 of his
5 direct testimony. For the manual letter sorting activity he presents values of .6048
6 for the true volume variability,²⁶ .6316 for the volume variability estimate produced
7 by the fixed effects estimator, and .7232 for the volume variability estimate
8 produced by the first difference estimator. Note that the value that Bradley
9 presents for the true volume variability is *higher* than either of the two attenuated
10 estimates. If equations (19) and (21) are correct, the only way to arrive at such a
11 conclusion would be for the variance of the measurement error to be negative, a
12 mathematically impossible result.

13 The reasons for these anomalous results are not completely clear.
14 Strictly speaking, Bradley's equation (22) holds only as his sample size grows
15 toward infinity. It is possible that these results reflect the small sample properties
16 of equation (22), although, as Bradley often points out, he has quite a large sample
17 available. The source for equations (19) and (21) cited by Bradley in his direct
18 testimony bases the derivation of these assumptions upon a number of specific
19 assumptions about the structure of the data²⁷ – assumptions that may not hold for

26. This quantity is identified in the table as the "Errors-in-Variables β ." Under cross-examination (Tr. 11/5575, 5576) Bradley stated that this quantity was calculated from equation (22), and so it is identical to what I have called here the true value of the volume variability coefficient.

27. Cheng Hsiao, Analysis of Panel Data, Cambridge University Press, 1986,
(continued...)

1 the data used by Bradley. Regardless of the explanation, however, it is clear that
2 Bradley's errors-in-variables analysis produces nonsensical results in the case of
3 the manual letter sorting activity. We cannot place any credence in an estimate of
4 the "true" volume variability that depends upon the existence of a measurement
5 error process with a negative variance.

6 This result is not limited to the manual letter sorting activity. Table A-1
7 shows the results that are obtained when Bradley's errors-in-variables methodology
8 is applied to all of the MODS direct activities. The mathematically impossible result
9 of a negative measurement error variance appears in connection with a number of
10 activities.

27.(...continued)
pp. 63-65.

Table A-1

Results Obtained When Bradley's Errors-in-Variables
Methodology Is Applied to All MODS Direct Activities

Activity	"Errors-In-Variables"	Implied "Piece Handlings" Measurement Error Variance
MODS Direct		
BCS Sorting	1.0040	0.0026
OCR Sorting	0.9708	0.0035
LSM Sorting	0.8263	-0.0011
FSM Sorting	1.1359	0.0028
Manual Letter Sorting	0.5881	-0.0047
Manual Flat Sorting	0.6967	-0.0002
Manual Parcel Sorting	0.5938	0.0195
Manual Priority Mail Sorting	0.5539	-0.0010
SPBS - Priority Mail Sorting	0.9619	0.0121
SPBS - Non Priority Mail Sorting	0.7751	0.0072
Cancellation and Mail Prep	0.5470	0.0000

Source: WP III.

1 MR. McKEEVER: Mr. Chairman, I might note, and I
2 apologize, in one or two of the equations in the appendix
3 there were some minor typographical errors that did not
4 change the equations. For example, a capital X was there
5 instead of a small x, or an x that was italicized should not
6 have been. We have made those revisions in the copies
7 provided to Dr. Neels. The equations were correct. It was
8 just as I said format things which we have corrected.

9 CHAIRMAN GLEIMAN: Thank you.

10 BY MR. McKEEVER:

11 Q Dr. Neels, I'm now handing you a document entitled
12 Supplemental Testimony of Kevin Neels in response to
13 Commission's Notice of Inquiry No. 4 on mail processing
14 variability, and marked UPS-ST-1. Was that document
15 prepared by you or under your supervision?

16 A It was.

17 Q And if you were to testify orally here today on
18 the subject of that document, would your testimony be as set
19 forth in it?

20 A It would.

21 MR. McKEEVER: Mr. Chairman, I move that the
22 supplemental testimony of Kevin Neels in response to
23 Commission's Notice of Inquiry No. 4 on mail processing
24 variability and marked UPS-ST-1 be admitted into evidence
25 and transcribed into the record.

1 CHAIRMAN GLEIMAN: Are there any objections?

2 Hearing none, the supplemental testimony and
3 exhibits of Witness Neels are received into evidence, and I
4 direct that they be transcribed into the record at this
5 point.

6 [Supplemental Testimony and
7 Exhibits of Kevin Neels, UPS-ST-1,
8 was received into evidence and
9 transcribed into the record.]

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

UPS-ST-1

BEFORE THE
POSTAL RATE COMMISSION

POSTAL RATE AND FEE CHANGES, 1997

DOCKET NO. R97-1

SUPPLEMENTAL TESTIMONY OF
KEVIN NEELS IN RESPONSE TO
COMMISSION'S NOTICE OF INQUIRY NO. 4
ON MAIL PROCESSING VARIABILITY

BEFORE THE
POSTAL RATE COMMISSION

POSTAL RATE AND FEE CHANGES, 1997

:
:
:
:
DOCKET NO. R97-1

SUPPLEMENTAL TESTIMONY OF
KEVIN NEELS IN RESPONSE TO
COMMISSION'S NOTICE OF INQUIRY NO. 4
ON MAIL PROCESSING VARIABILITY

BACKGROUND

1 On January 16, 1998, the Commission issued Notice of Inquiry No. 4 on
2 Mail Processing Variability. In this Notice, the Commission noted that the fixed effects
3 model of mail processing labor cost variability proposed by Postal Service witness
4 Bradley in USPS-T-14 restricts the slope coefficients of the explanatory variables to be
5 identical across facilities. It also noted at page 1 that several parties had requested
6 that the Postal Service "elaborate upon the statistical support for the restriction that the
7 fixed-effects model represents." In Presiding Officer's Information Request No. 7, the
8 Postal Service was asked to run witness Bradley's model separately by site and to test

1 whether the restriction that slope coefficients be equal across facilities is statistically
2 supported. Witness Bradley did this only for eight sites, asserting that it would take too
3 long to review each of the regression outputs that would be generated if he were to run
4 his model separately for all facilities. In Notice of Inquiry No. 4, the Commission
5 questioned Bradley's assertions regarding the necessity of such separate review.

6 The Notice asks interested parties to evaluate whether the restriction of
7 equality of slope coefficients is supported by the data. It asks specifically for a
8 statistical test of the equality of slope coefficients across facilities, and for comment on
9 the results of the test. This statement responds to that request.

10

APPROACH

11

12 I focused on the MODS direct activities. My analysis comprised the
13 following steps for each of the four activities:

- 14 ● Use Bradley's data scrubs to shrink down to the sample used in his analysis;
- 15 ● Carry out the data transformations needed to create the dependent and
16 independent variables appearing in Bradley's fixed effects models. These
17 include calculating values for the two time trends and seasonal dummies, taking
18 the natural logarithms of the various underlying variables, expressing the
19 variables in terms of deviations from overall sample means, and constructing the
20 various interaction terms called for by the translog specification;
- 21 ● Using the values estimated by Bradley for the serial correlation coefficients for
the various activities, transform the variables to eliminate serial correlation.

- 1 Specifically, I multiplied the first observation in Bradley's sample for each site by
 2 the square root of one minus the square of the square of the serial correlation
 3 coefficient. Subsequent observations were transformed by subtracting from
 4 each variable the product of the serial correlation coefficient and the value for
 5 that variable in the preceding time period;¹
- 6 • Using Bradley's specification, run separate regressions (including intercept
 7 terms) for each of the facilities in each of the samples;
 - 8 • For each activity, sum the error degrees of freedom and sum of squared errors
 9 from the separate regressions; and
 - 10 • Combine this information with the values for sum of squared error and error
 11 degrees of freedom from Bradley's fixed effects model to calculate the F statistic
 12 for testing the null hypothesis that the slope coefficients are the same for all
 13 facilities against the alternative that they are different.

14 The F statistic cited above takes the following form:

$$15 F_{k(n-1), T-(k+1)n} = ((SSE_{FE} - SSE_{SS}) / (kn - k)) / (SSE_{SS} / (T - kn - n)) \quad (1)$$

-
1. Using the value for the serial correlation coefficient estimated from the residuals of Bradley's fixed effects model is but one of a number of possible approaches to handling the problem of serial correlation. One could also maintain the assumption that there is a single correlation coefficient that is common to all facilities, but then estimate the value of that coefficient from the residuals of the model that allows slope coefficients to vary by facility. One could also allow the serial correlation coefficient to vary by facility. In the latter case one would have to take the separate serial correlation coefficients into account in testing whether or not the model coefficients differ significantly by facility.

- 1 Where: k is the number of slope (i.e., non-intercept) coefficients in the model;
- 2 n is the number of sites;
- 3 T is the total number of observations in Bradley's sample for the activity in
- 4 question;
- 5 SSE_{FE} is the sum of squared errors for Bradley's fixed effects model; and
- 6 SSE_{SS} is the sum of squared errors for the model that allows both slope
- 7 and intercept coefficients to vary by site.

8 **RESULTS**

9 Table 1 presents the results of my analysis for all MODS direct activities.

10 Specifically, this table shows the calculated F statistic testing whether one can reject

11 the null hypothesis that all facilities share a common set of slope coefficients in favor of

12 the alternative hypothesis that slope coefficients differ by facility. The rightmost column

13 of the table shows for each activity the probability of rejecting the null hypothesis using

14 this test when the null hypothesis is in fact true. The null hypothesis is soundly rejected

15 for all MODS direct activities. These results indicate clearly that the slope coefficients

16 in Bradley's model differ significantly across mail processing facilities.

Table 1

MODS Direct Activities

Results of Statistical Test of the Hypothesis That All
Facilities Share Common Slope Coefficients

MODS Direct Activity	Numerator		Denominator		F-Statistic	Probability
	SSE	DOF	SSE	DOF		
Bar Code Sorting	120.666	7540	93.820	14833	2.54	0.000
Cancellation and Mail Prep	95.709	5287	89.8470	13990	2.82	0.000
Flat Sorting Machines	35.671	5740	25.904	11956	2.87	0.000
Letter Sorting Machines	23.127	6326	16.033	13142	3.00	0.000
Manual Flat Sorting	92.814	7647	68.494	16015	2.84	0.000
Manual Letter Sorting	133.519	8116	74.6293	16329	3.60	0.000
Manual Parcel Sorting	384.077	5028	368.724	12056	2.50	0.000
Manual Priority Mail Sorting	299.610	4291	255.722	11217	3.06	0.000
Optical Character Reading	108.957	6180	96.243	12056	2.21	0.000
SPBS - Non Priority Mail Sorting	28.654	1327	25.843	3242	2.71	0.000
SPBS - Priority Mail Sorting	38.197	617	39.121	1293	2.05	0.000

Source: Library Reference UPS-LR-6.

1 The failure of Bradley's fixed effects model to pass the F test for any of
2 the MODS direct activities does not by itself prove that volume variability differs across
3 facilities. It is possible that the differences in slope coefficients detected by the F test
4 occur in other parts of Bradley's specification. The only way to determine whether or
5 not this is in fact the case is to inspect the individual facility-specific volume variability
6 estimates. Table 2 presents the results of this inspection.

7 Within any activity there are substantial differences across facilities in
8 estimated volume variability. Referring to Table 2 below, notice that the highest
9 variability estimated in each activity is generally 300 percent or more, and runs as high
10 as 1,105 percent. Similarly, the lowest variabilities estimated are negative, and some
11 extremely so.

Table 2

MODS Direct Activities

Range of Facility-Specific Volume Variability Percentages

MODS Direct Activity	First Quartile: The lowest 25% of the estimated variabilities fall between:	Second Quartile: The next 25% of the estimated variabilities fall between:	Third Quartile: The next 25% of the estimated variabilities fall between:	Fourth Quartile: The highest 25% of the estimated variabilities fall between:
Bar Code Sorting	-68480.1 and 58.9	58.9 and 91.7	91.7 and 138.3	138.3 and 520.1
Cancellation and Mail Prep	-205.0 and 15.0	15.0 and 61.8	61.8 and 125.6	125.6 and 346.8
Flat Sorting Machines	-206.4 and 50.1	50.1 and 93.1	93.1 and 126.7	126.7 and 355.3
Letter Sorting Machines	-43.3 and 78.8	78.8 and 93.1	93.1 and 111.5	111.5 and 349.6
Manual Flat Sorting	-425.0 and 40.7	40.7 and 81.0	81.0 and 146.7	146.7 and 484.3
Manual Letter Sorting	-490.7 and 31.8	31.6 and 102.8	102.8 and 168.5	168.5 and 420.3
Manual Parcel Sorting	-421.8 and 8.7	8.7 and 42.9	42.9 and 81.9	81.9 and 1001.2
Manual Priority Mail Sorting	-137.9 and 19.4	19.4 and 45.2	45.2 and 90.3	90.3 and 481.9
Optical Character Reading	-1783.3 and 40.5	40.5 and 82.1	82.1 and 130.7	130.7 and 1105.2
SPBS - Non Priority Mail Sorting	-69.4 and 32.4	32.4 and 54.1	54.1 and 99.1	99.1 and 210.3
SPBS - Priority Mail Sorting	-117.5 and 9.1	9.1 and 62.7	62.7 and 92.1	92.1 and 185.1

Source: Library Reference UPS-LR-6.

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, DC 20268-0001

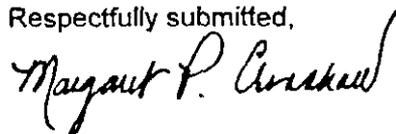
Postal Rate and Fee Changes, 1997

Docket No. R97-1

DESIGNATION OF WRITTEN CROSS-EXAMINATION
OF UNITED PARCEL SERVICE
WITNESS KEVIN NEELS
(UPS-T1)

<u>Party</u>	<u>Interrogatories</u>
Magazine Publishers of America	MPA/UPS-T1-1-3 USPS/UPS-T1-4-6, 8, 14-16, 20-21, 23, 26, 28-29, 32-35, 37, 39, 41-42, 44-45
Office of the Consumer Advocate	MPA/UPS-T1-1-3 USPS/UPS-T1-1-6, 8-9, 11, 14-24, 26, 28-29, 32-37, 39-40, 42-45
United States Postal Service	MPA/UPS-T1-1-3 USPS/UPS-T1-1-45

Respectfully submitted,



Margaret P. Crenshaw
Secretary

INTERROGATORY RESPONSES OF
UNITED PARCEL SERVICE
WITNESS KEVIN NEELS (T1)
DESIGNATED AS WRITTEN CROSS-EXAMINATION

Interrogatory:

MPA/UPS-T1-1
MPA/UPS-T1-2
MPA/UPS-T1-3
USPS/UPS-T1-1
USPS/UPS-T1-2
USPS/UPS-T1-3
USPS/UPS-T1-4
USPS/UPS-T1-5
USPS/UPS-T1-6
USPS/UPS-T1-7
USPS/UPS-T1-8
USPS/UPS-T1-9
USPS/UPS-T1-10
USPS/UPS-T1-11
USPS/UPS-T1-12
USPS/UPS-T1-13
USPS/UPS-T1-14
USPS/UPS-T1-15
USPS/UPS-T1-16
USPS/UPS-T1-17
USPS/UPS-T1-18
USPS/UPS-T1-19
USPS/UPS-T1-20
USPS/UPS-T1-21
USPS/UPS-T1-22
USPS/UPS-T1-23

Designating Parties:

MPA, OCA, USPS
MPA, OCA, USPS
MPA, OCA, USPS
OCA, USPS
OCA, USPS
OCA, USPS
MPA, OCA, USPS
MPA, OCA, USPS
MPA, OCA, USPS
USPS
MPA, OCA, USPS
OCA, USPS
USPS
OCA, USPS
USPS
USPS
MPA, OCA, USPS
MPA, OCA, USPS
MPA, OCA, USPS
OCA, USPS
OCA, USPS
OCA, USPS
MPA, OCA, USPS
MPA, OCA, USPS
OCA, USPS
MPA, OCA, USPS

Interrogatory:

USPS/UPS-T1-24
USPS/UPS-T1-25
USPS/UPS-T1-26
USPS/UPS-T1-27
USPS/UPS-T1-28
USPS/UPS-T1-29
USPS/UPS-T1-30
USPS/UPS-T1-31
USPS/UPS-T1-32
USPS/UPS-T1-33
USPS/UPS-T1-34
USPS/UPS-T1-35
USPS/UPS-T1-36
USPS/UPS-T1-37
USPS/UPS-T1-38
USPS/UPS-T1-39
USPS/UPS-T1-40
USPS/UPS-T1-41
USPS/UPS-T1-42
USPS/UPS-T1-43
USPS/UPS-T1-44
USPS/UPS-T1-45

Designating Parties:

OCA, USPS
USPS
MPA, OCA, USPS
USPS
MPA, OCA, USPS
MPA, OCA, USPS
USPS
USPS
MPA, OCA, USPS
MPA, OCA, USPS
MPA, OCA, USPS
MPA, OCA, USPS
OCA, USPS
MPA, OCA, USPS
USPS
MPA, OCA, USPS
OCA, USPS
MPA, USPS
MPA, OCA, USPS
OCA, USPS
MPA, OCA, USPS
MPA, OCA, USPS

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
MAGAZINE PUBLISHERS OF AMERICA**

MPA/UPS-T1-1. Please refer to table A-1 on page A-of your testimony, and to table 17 of page 84 of witness Bradley's testimony.

(a) Please confirm that your "errors-in variables" estimates of variability for the Manual Letters and Manual Flats activities are 0.5881 and 0.6967 respectively. If you do not confirm, please explain.

(b) Please confirm that witness Bradley's "errors-in-variables" estimates of variability for the Manual Letters and Manual Flats activities are 0.6048 and 0.6999, respectively. If you do not confirm, please explain.

(c) Since your testimony appears to claim (at page A-4, lines 6-8) that you reproduced witness Bradley's methodology for obtaining these estimates, please reconcile the apparant discrepancies between these two sets of estimates.

Response to MPA/UPS-T1-1. (a) Confirmed.

(b) Confirmed.

(c) Since I did not have the program used by witness Bradley in his errors-in-variables analysis, I relied upon the description of his methodology contained in his direct testimony on pages 80-83. Following the steps described therein, I arrived at the results shown in my direct testimony. Those results differ somewhat from those of witness Bradley.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
MAGAZINE PUBLISHERS OF AMERICA**

MPA/UPS-T1-2. Please refer to page 31, lines 20-22, of your testimony and define the phrase "full data set."

Response to MPA/UPS-T1-2. The full data set indicates all usable observations. In other words, only observations with missing values for one or more of the variables in the model were discarded from the data provided in the electronic version of LR-H-148.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
MAGAZINE PUBLISHERS OF AMERICA**

MPA/UPS-T1-3. Please refer to page 35, lines 18-21, of your testimony, where you described how you calculated the "effects of technological change" in witness Bradley's model, which you subsequently graphed in Figures 3 and 4. Refer also to witness Bradley's equation (2) at page 36 of his testimony.

a. By "the products of the time trend variables and their estimated coefficients," did you mean that the vertical distance between the horizontal axis and each of the points in Figures 3 and 4 was calculated by summing the products of each term on the righthand side of equation (2) in which t_1 or t_2 appears and its corresponding coefficient? Please answer "yes" or "no."

b. By "the products of the time trend variables and their estimated coefficients," did you mean that the vertical distance between the horizontal axis and each of the points in Figures 3 and 4 was calculated by summing the products of each term on the righthand side of equation (2) in which a linear or quadratic term in t_1 or t_2 appears by itself and its corresponding coefficient (i.e., excluding interaction terms)? Please answer "yes" or "no."

c. By "the products of the time trend variables and their estimated coefficients," did you mean that the vertical distance between the horizontal axis and each of the points in Figures 3 and 4 was calculated by summing the products of each term on the righthand side of equation (2) in which a linear term in t_1 or t_2 appears by itself and its corresponding coefficient (i.e., excluding interaction and higher-order terms)? Please answer "yes" or "no."

d. If your answers to parts a. through c. are all "no," please provide and explain the correct interpretation of the phrase, "the products of the time trend variables and their estimated coefficients", using witness Bradley's notation.

Response to MPA/UPS-T1-3. (a) Yes. The details of this calculation are set forth in my workpaper VI.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
MAGAZINE PUBLISHERS OF AMERICA**

- (b) No.
- (c) No.
- (d) N/A

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-1. Do you consider yourself to be a professional
econometrician?

Response to USPS/UPS-T1-1. Yes.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-2. In what disciplines do you hold your B.A. and Ph.D. degrees?

Response to USPS/UPS-T1-2. My B.A. is in Government. My Ph.D. is in Urban and Regional Theory.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-3. Please refer to Workpaper III. Please refer to the single unnumbered page in the workpaper. Please provide definitions for the following undefined terms listed in the workpaper:

- (a) Bf
- (b) Bd
- (c) $\text{Var}(X_{it} - X_{\text{Mean}})$
- (d) $\text{Var}(X_{it} - X_{it-1})$
- (e) T
- (f) Numerator
- (g) Denominator
- (h) Beta
- (i) Variance
- (j) Bf-Beta

Response to USPS/UPS-T1-3.

- (a) β_f is the fixed effects estimate of β .
- (b) β_d is the first difference estimate of β .
- (c) $\text{Var}(X_{it} - X_{\text{mean}})$ is the variance of piece handlings around site means.
- (d) $\text{Var}(X_{it} - X_{it-1})$ is the variance of the difference between current and lagged piece handlings.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

- (e) T is defined in footnote 5 of the single unnumbered page in WP III.
- (f) Numerator indicates the expression in the top portion of a simple fraction.
- (g) Denominator indicates the expression in the bottom portion of a simple fraction.
- (h) Beta is the "Errors in Variables" estimate of β .
- (i) Variance is the variance of the measurement error in volume.
- (j) Bf-Beta is the difference between the fixed effects estimate of β and the "Errors in Variables" estimate of β .

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-4. Please refer to Workpaper III. Please refer to the single unnumbered page in the workpaper. There are a series of numbers listed under the column entitled "Bd." For example, for the row entitled "Manual Letter Sorting" the number is "0.7586." The only citation in footnote 2 is "Bradley, WP I". Please provide an exact citation to Bradley Workpaper WP-1 for each of the 11 numbers listed in the column entitled "Bd."

Response to USPS/UPS-T1-4. The citation in footnote 2 is incorrect. These numbers were generated by computer programs attempting to reproduce Bradley's first difference estimator as described in his testimony on page 82, equation (20). Because I did not have copies of the computer programs and data sets he used for his calculations, I was not able to reproduce his results exactly. Copies of the programs used to produce the numbers shown in Workpaper III and the output they generated are being produced as Library Reference UPS-LR-2.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-5. Please refer to Workpaper III. Please refer to the single unnumbered page in the workpaper. There are a series of numbers listed under the column entitled "Bf." For example, for the row entitled "Manual Letter Sorting" the number is "0.6266". The only citation in footnote 2 is "Bradley, WP 1". Please provide an exact citation to Bradley Workpaper WP-1 for each of the 11 numbers listed in the column entitled "Bf."

Response to USPS/UPS-T1-5. The citation in footnote 2 is incorrect. These numbers were generated by computer programs attempting to reproduce Bradley's fixed effects estimator as described in his testimony on page 81, equation (17). Because I did not have copies of the computer programs and data sets he used for these calculations, I was not able to reproduce his results exactly. Copies of the programs used to produce the numbers shown in Workpaper III and the output they generated are being produced as Library Reference UPS-LR-2.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-6. Please refer to Workpaper III. Please refer to the single unnumbered page in the workpaper. There are a series of numbers listed under the column entitled "Var(Xit - XMean)." For example, for the row entitled "Manual Letter Sorting" the number is "0.0716". The only citation in footnote 2 is "Bradley, WP 1". Please provide an exact citation to Bradley Workpaper WP-1 for each of the 11 numbers listed in the column entitled "Var(Xit - Xmean)."

Response to USPS/UPS-T1-6. The citation in footnote 2 is incorrect. These numbers were generated by computer programs attempting to reproduce Bradley's consistent estimator of β as described in his testimony on page 82, equation (22). Because I did not have copies of the computer programs and data sets he used for these calculations, I was not able to reproduce his results exactly. Copies of the programs used to produce the numbers shown in Workpaper III and the output they generated are being produced as Library Reference UPS-LR-2.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-7. Please provide a list of all Postal Rate Commission Opinions and Recommended Decisions that you reviewed prior to preparing your written testimony. If you reviewed only part(s) of a document, please provide page numbers for each part that you reviewed.

Response to USPS/UPS-T1-7. At a point in the past prior to preparation of my testimony and for an unrelated project, I had reviewed Postal Rate Commission Opinions relating to purchased transportation. I did not retain those documents, and am unable now to provide exact citations.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-8. Please refer to Workpaper III. Please refer to the single unnumbered page in the workpaper. There are a series of numbers listed under the column entitled "Var(Xit - Xit-1)." For example, for the row entitled "Manual-Letter Sorting" the number is "0.0327". The only citation in footnote 2 is "Bradley, WP 1". Please provide an exact citation to Bradley Workpaper WP-1 for each of the 11 numbers listed in the column entitled "Var(Xit - Xit-1)."

Response to USPS/UPS-T1-8. The citation in footnote 2 is incorrect. These numbers were generated by computer programs attempting to reproduce Bradley's consistent estimator of β as described in his testimony on page 82, equation (22). Because I did not have copies of the computer programs and data sets he used for these calculations, I was not able to reproduce his results exactly. Copies of the programs used to produce the numbers shown in my Workpaper III and the output they generated are being produced as Library Reference UPS-LR-2.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-9. Please refer to Workpaper III. Please refer to the single unnumbered page in the workpaper.

(a) There is apparently a formula listed in footnote 6. Please provide a mathematical representation of this formula along with a definition for each term used in the formula.

(b) There is apparently a formula listed in footnote 7. Please provide a mathematical representation of this formula along with a definition for each term used in the formula.

(c) There is apparently a formula listed in footnote 9. Please provide a mathematical representation of this formula along with a definition for each term used in the formula.

(d) There is apparently a formula listed in footnote 9. Please provide a mathematical representation of this formula along with a definition for each term used in the formula.

Response to USPS/UPS-T1-9. Footnotes 6 through 9 on the single unnumbered page in WP III refer to the errors in variables analysis discussed by Postal Service witness Bradley, in USPS-T-14 at pages 80 through 84, as well as by me in my testimony at pages A1-A5 of Appendix A. Footnotes 6 through 9 are used successively to arrive at consistent estimators of Beta (the true estimate of volume variability) that

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

are free of measurement error and the variance of the measurement error. Referring to page 65 in Hsiao, Analysis of Panel Data, equations 3.9.8 and 3.9.9, or to page 82 equation 22 of Witness Bradley's testimony, it follows that:

(a) Footnote 6 represents part of the fraction that calculates the consistent estimator of Beta. In particular, it represents the numerator or first term of the expression. Each term is clearly defined by Witness Bradley, USPS-T-14, pages 80-83, in Analysis of Panel Data by Hsiao, and in my response to USPS/UPS-T1-3, 4, 5, 6, and 8.

(b) Footnote 7 represents part of the fraction that calculates the consistent estimator of Beta. In particular, it represents the denominator or second term of the expression. Each term is clearly defined by Witness Bradley, USPS-T-14, pages 80-83, in Analysis of Panel Data by Hsiao, and in my response to USPS/UPS-T1-3, 4, 5, 6, and 8.

(c) Footnote 8 describes the expression that calculates the consistent estimator of Beta by dividing the numerator by the denominator. Each term is clearly defined by Witness Bradley, USPS-T-14, pages 80-83, in Analysis of Panel Data by Hsiao, and in my response to USPS/UPS-T1-3, 4, 5, 6, and 8.

(d) Footnote 9 is the equation that solves for the variance of the error in the measurement of volume. Each term is clearly defined by Witness Bradley, USPS-T-14,

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

pages 80-83, in Analysis of Panel Data by Hsiao, and in my response to USPS/UPS-
T1-3, 4, 5, 6, and 8.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-10. Please refer to Workpaper III. Please refer to the single unnumbered page in the workpaper. Please provide the source for the number "81" which is listed in the column entitled "T".

Response to USPS/UPS-T1-10. The source is identified in footnote [5] of the single unnumbered page of Workpaper III. The backup calculations are contained in Library Reference UPS-LR-2.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-11. For the purposes of this question, assume that the data for a particular site (a unique IDNUM) has the following pattern: continuous data for 5 periods, a one-period break, continuous data for 25 periods, a three period break, continuous data for 45 periods.

- (a) In your proposed method of using "all useable data," how many observations from this site would be included in a fixed effects regression?
- (b) Would you consider the data for this site to be continuous or discontinuous?

Response to USPS/UPS-T1-11.

- (a) 70. By taking fully into account the specific lag structure created by the breaks in the data, one could in principle increase the number of useable observations to 72.
- (b) Discontinuous.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-12. Please refer to your Workpaper IV at the program log entitled "wpivmd.log." Please refer to page 30 of the log:

(a) Please confirm that the following code appears on page 30. If the code is not correct, please provide the correct code.

```
DATA LAGSET;
RETAIN RUN 0;
SET OPER;
IF (IDNUM NE IDNUM1) THEN RUN = RUN+1;
ELSE (IF DIFAP NOT IN (1,88) AND (IDNUM-IDNUM1)) THEN RUN=RUN+1;
RUN;
```

(b) Please provide definitions for the variables "RUN", "IDNUM1", and "DIFAP".

(c) Please document each line of code by describing what operation you intended the code to perform.

Response to USPS/UPS-T1-12.

(a) No, the code is not on page 30 of wpivmd.log, but it is on other pages.

(b) RUN: ID number for a continuous string of observations within a site

IDNUM1: The value of the variable IDNUM in the previous observation

DIFAP: The difference between FYAP and FYAP1 (see FYAP1 definition

below)

(c) DATA LAGSET:: Begins a data step for a data set titled LAGSET.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

RETAIN RUN 0; Initializes the variable RUN at 0 and causes RUN to retain its value from one iteration of the DATA step to the next.

SET OPER; Reads observations from the data set OPER.

IF (IDNUM NE IDNUM1) THEN RUN=RUN+1; Increases the value of the RUN variable if the site changes.

ELSE (IF DIFAP NOT IN (1,88) AND (IDNUM=IDNUM1) THEN RUN=RUN+1; This statement increases the value of the RUN variable within a site's data if there is a break in the series.

RUN; Executes the above data step.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-13. Please refer to the program "wpivmd.sas" contained in your Workpaper IV. Please provide definitions of the following variables that are contained in the program. Please provide both a mathematical and an intuitive definition for each variable:

- (a) idnum1
- (b) fyap1
- (c) difap
- (d) n3
- (e) ri1
- (f) ri2
- (g) rin1
- (h) rin2
- (i) frstid

Response to USPS/UPS-T1-13.

- (a) IDNUM1: The value of the variable IDNUM in the previous observation
- (b) FYAP1: The value of the variable FYAP in the previous observation
- (c) DIFAP: The difference between FYAP and FYAP1 ($FYAP_t - FYAP_{t-1}$)

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

Note: The following variables in (d)-(h) are integers and are defined in
wpivmd.sas

- (d) N3: Total number of runs
- (e) RI1: First observation for run i in OLS section
- (f) RI2: Last observation for run i in OLS section
- (g) RIN1: First observation for run i in AR1 section
- (h) RIN2: Last observation for run i in AR1 section
- (i) FRSTID: The variable IDNUM

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-14. Please refer to Table 5 on page 32 of your testimony.

Please refer to the column entitled "All Useable Observations."

(a) For each row in the table, there is a percentage provided. For each row in the table, please provide the number of observations used in estimating that percentage.

(b) Please confirm that you discarded some data in estimating these percentages. If you did not confirm, please explain the source of the numbers of observations provided in part a above.

(c) If you did discard some data, please provide, for each estimated equation, the number of observations discarded and the reasons for discarding the data.

(d) If you did discard data, for each estimated equation implied by Table 5 please provide a complete mapping from the data frame to the number of observations used in estimating the equation. That is, please provide the number of observations deleted for each individual reason listed in response to subpart (c) above.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

Response to USPS/UPS-T1-14.

(a)	# of Obs. Used [1]
BCS Sorting	25,964
OCR Sorting	20,981
LSM Sorting	22,873
FSM Sorting	21,203
Manual Letter Sorting	28,164
Manual Flat Sorting	28,020
Manual Parcel Sorting	24,058
Manual Priority Mail Sorting	21,318
SPBS - Priority Mail Sorting	3,591
SPBS - Non Priority Mail Sorting	6,620
Cancellation and Mail Prep	25,462
Opening - Pref Mail	20,438
Opening - Bulk Business Mail	18,429
Pouching	18,115
Platform	20,266
Sack Sorting Machine	2,073
Primary Parcel Sorting Machine	2,073
Secondary Parcel Sorting Machine	2,046
Irregular Parcel Post	1,997
Sack Opening Unit	1,864
Non Machinable Outsides	2,073
Platform	2,073
Floor Labor	2,073
[1] UPS-T-1 WP-IV	

(b) - (c) Not confirmed. Only missing values were removed. These were not "usable" data.

(d) N/A

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-15. Suppose that a data set had 15 observations.

Suppose that one of the data points was known to contain erroneous data. Would it be appropriate to drop that data point from the econometric regression? Please explain fully.

Response to USPS/UPS-T1-15. The hypothetical posed by this question provides no background information about the regression, the data set, or the nature of the error that is known to be present. The absence of such background information makes the question difficult to answer. In general, it is better to have accurate data than erroneous data. Hence, it may well be appropriate to delete the erroneous observation. However, empirical studies often have to rely on data that are not perfectly accurate, and so the presence of error does not necessarily imply that deletion of the observation is appropriate. The hypothetical situation indicates that the observation is known to be in error, but does not indicate whether anything is known about the magnitude or the direction of the error. These factors may have some bearing on the decision whether or not to include the data point in the regression, especially since the data set that is available for the analysis is very small. Other factors might also be relevant. These could include: whether the error infects a dependent or an independent variable; whether or not the remaining data points are known to be error free; and the nature of the process that caused the error.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-16. Please refer to page 30, line 1 of your testimony where you discuss the estimation of seasonal effects.

(a) Suppose that data are collected at the accounting period frequency with 13 observations per year. Suppose that one wishes to estimate a translog econometric regression for a single mail processing site by regressing the variable $\ln(\text{hours})$ on the variable $\ln(\text{TPH})$ and $\ln(\text{MANR})$. Please confirm that it would be impossible to estimate "accurate seasonal effects" for that site with only 13 observations. If you do not confirm, please explain how "accurate seasonal effects" could be estimated for the single site using only 13 observations.

(b) Please provide what you believe to be the minimum number of observations required to accurately estimate seasonal effects for an individual site when the data are collected on an accounting period frequency.

Response to USPS/UPS-T1-16.

(a) Confirmed.

(b) This question cannot be answered precisely because it fails to specify the degree of accuracy sought in the seasonal effect estimates. Furthermore, the relationship between the number of observations and the accuracy of the estimated seasonal effects will depend upon the values of the independent variables and the variance of the residual error term. For the same sample size, different sets of

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

independent variable values may yield different degrees of accuracy in the estimation of seasonal effects.

The question postulates a two variable translog cost function. I assume because they are not mentioned that this model contains no lagged values of hours, time trends, or other variables. Such a model will contain 6 estimated coefficients. The addition of season dummy variables will add another 12 coefficients to the model. Thus, the minimum number of observations needed to estimate ANY seasonal effects would be 19 observations. Such a regression would have only one degree of freedom, and would be unlikely to provide accurate estimates of any of the coefficients. The accuracy of the estimated seasonal effects will then be an increasing function of the sample size. Without information about the level of estimation accuracy required, the values of the independent variables, and the variance of the residual error term, it is impossible to calculate the minimum number of observations needed "to accurately estimate seasonal effects."

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-17. Please provide a list of all studies containing econometric analyses that you performed.

Response to USPS/UPS-T1-17. In answering this interrogatory I have relied upon my memory and such records as I have. I cannot confirm that the list is complete. I have interpreted "performed" to mean that I made the detailed technical decisions regarding the design and conduct of the analysis.

HASE Deterioration Rate Studies – As part of the Housing Assistance Supply Experiment I conducted studies aimed at the econometric measurement of the deterioration rate of housing capital.

HASE Capital Index – As part of the Housing Assistance Supply experiment I conducted econometric studies relating the quantity of residential capital present to the hedonic attributes of the structure.

ATM Transactions Demand – In support of an expert witness testifying on behalf of a financial institution I conducted econometric studies of the demand for automated teller machine transactions.

Trident Base Economic Impacts – As part of an effort to measure the economic impacts of the opening of the Trident Missile nuclear submarine base in Kings Bay, Georgia, I conducted econometric analyses of the relationship between employment growth and exogenous income transfers.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

Direct Mail Response Analysis – I conducted econometric analyses of response rates to direct mail fund raising appeals as part of an effort to devise ways of targeting future mailings to higher response probability households.

Wood Product Price Relationships – As part of an effort to define geographic markets in a merger case I conducted econometric analyses of relationships between prices for wood products in different geographic regions.

Urban Family Budget Study – To provide a way of measuring cross-sectional price differentials between areas not directly covered by BLS surveys I conducted an econometric analysis of cross-sectional and intertemporal variations in BLS's estimated budgets for an urban family of four.

Retail Computer Sales – To support expert testimony in a commercial dispute involving retail computer outlets I conducted econometric studies of trends in monthly sales in individual retail computer stores.

Pay Per View Video Pricing – To assist a supplier of pay per view in-hotel movies services in the development of a pricing strategy I designed a pricing experiment and conducted a series of econometric analyses of the response of buy rates to the experimental price changes.

Instant Camera Demand – To support expert testimony regarding damages in a patent infringement lawsuit involving instant cameras I conducted a

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

series of econometric studies of instant camera demand in the U.S. and in six foreign markets.

Instant Film Demand – To support expert testimony regarding damages in a patent infringement lawsuit involving instant cameras I conducted a series of *econometric studies of instant film demand in the U.S. and in six foreign markets.*

Regional Economic Indicator Trends – To support expert testimony in a legal proceeding involving a financial institution I conducted an econometric study of trends over time in a number of regional economic indicators.

Big Six Partner Tenure – To support expert testimony in an employment lawsuit involving a Big Six accounting firm I conducted an econometric study of duration of partner tenure.

Value of Commercial Time Slots – To support expert testimony in an antitrust lawsuit involving the broadcast industry I conducted econometric studies relating the prices charged for commercial time slots on network television to audience demographics.

Stewart Airport Trans Hudson Rail Service Demand – To assess the likely demand for a proposed new rail link to Stewart Airport in New York I conducted an econometric study of the response of travel demand to changes in prices and service levels for alternative transportation modes.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

Petroleum Products Pipeline – As part of a petroleum products pipeline rate case I conducted econometric studies of factors influencing variations in shipment volumes.

Time of Day Demand Modeling – As part of an investigation of demand for work travel from New Jersey to Manhattan I conducted econometric studies of the effects of changes in congestion and travel time on the distribution of travel demand across the peak commuter period.

Modal Split Demand Modeling – As part of an investigation of demand for work travel from New Jersey to Manhattan I conducted econometric studies of the effects of changes in fares and service levels on travelers' choices between auto, bus, and rail alternatives.

Facility Choice Demand Modeling – As part of an investigation of demand for work travel from New Jersey to Manhattan I conducted econometric studies of the effects of congestion and travel time on travelers' choices of routes.

Station Choice Modeling – As part of an investigation of demand for work travel from New Jersey to Manhattan I conducted econometric studies of the effects of travel times, fare, and access options on travelers' choices of rail stations.

Transit Benefits Study – As part of an effort to measure the welfare benefits of the availability of transit service I conducted an econometric analysis of market research data exploring consumers' choices of travel modes to work.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

Auto Demand Modeling – As part of work conducted in connection with litigation regarding allegations of theft of intellectual property I conducted econometric analyses of automobile demand.

High Speed Rail Demand – As part of an effort to assess future demand for a proposed high speed rail project I directed econometric analyses of market research data regarding travelers' choices of travel modes for intercity trips.

Effects of Urban Form on Travel Demand – As part of a research project to measure the effects of urban development patterns on travel behavior I conducted a series of econometric studies examining choices of modes to work, trip frequency, trip length, and other aspects of urban travel behavior.

Determinants Of Urban Traffic Volumes – As part of an effort to evaluate the plausibility of traffic forecasts for a metropolitan region and the highway construction plans based upon them I conducted a cross-sectional econometric analysis of the determinants of trip frequency, trip length, and auto usage.

Studies of Patient Population Dynamics – As part of a study of likely future markets for a medical device manufacturer I conducted econometric studies of disease incidence, prevalence and mortality for a list of conditions potentially treatable using the company's products.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

Orphan Drug Pricing Study – As part of a project to develop a pricing strategy for a new orphan drug I conducted a descriptive econometric study of factors influencing the introduction price for new orphan drugs.

Post AMI Complications – To support the development of an economic model of the value of diagnostic testing in heart attack patients I conducted econometric studies of the likelihood of developing complications in the weeks following a heart attack.

Post AMI Patient Population Studies – To support the development of an economic model of the value of diagnostic testing in heart attack patients I conducted a series of econometric studies of the characteristics of heart attack patients.

Diagnostic Accuracy in the Detection of Coronary Artery Disease – I conducted an econometric analysis of the relative accuracy of alternative techniques for diagnosing the presence of coronary artery disease.

Effects of Repair Behavior on Housing Deterioration and Quality – In a line of research funded by the U.S. Department of Housing and Urban Development and the U.S. Department of Energy I developed an econometric model based upon a generalized Leontieff production function relating the quantity of residential capital present to the quantity of capital carried over from the prior time period and the volume of new repair and upgrading inputs supplied in the current period.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

Rental Housing Repair Behavior – In a line of research funded by the U.S. Department of Housing and Urban Development and the U.S. Department of Energy I developed an econometric model relating expenditures for repairs and upgrading to landlord demographics and the estimated marginal value product of incremental repair inputs.

Rental Housing Services Production Functions – As part of the Housing Assistance Supply Experiment and for completion of the requirements for receipt of my Ph.D. I estimated a translog production function relating current housing services production to inputs of land, residential capital, energy, and other operating inputs.

Housing Resale Model – For a state Realtor association I developed an econometric model of the determinants of sales volumes for existing single family houses.

Heating Oil Price Studies – To support the development of expert testimony in a legal dispute regarding allegations of manipulation of the heating oil market I conducted econometric studies of heating oil prices and prices on the heating oil futures market.

Residential Energy Demand – As part of the Housing Assistance Supply Experiment I conducted econometric studies of the determinants of residential energy demand.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

Travel Agent Booking Behavior – I conducted a series of econometric studies relating the shares of individual travel agency sales achieved by the various air carriers to their quality of service, sales efforts, and travel agent incentive agreements.

Effects of CRS Display Bias on Airline Bookings – To support expert testimony in a commercial dispute I conducted econometric analyses of the determinants of CRS booking levels on two domestic airlines.

Aviation Activity Forecasts – As part of an effort to develop an airport system plan I conducted econometric analyses of the determinants of growth in air carrier enplanements and departures and general aviation operations.

Airport Access Demand – As part of an effort to develop new airport access services I conducted econometric analyses of market research data on the choice of access mode by air passengers.

Time Series Analyses of the Effects of CRS Display Bias – To support the development of expert testimony in an antitrust case involving airline computerized reservation systems I conducted a time series econometric analysis of the effects of CRS display bias on one of the parties to the case.

Analyses of Advance Booking Behavior – To support the development of expert testimony in an antitrust case involving airline computerized reservation systems I conducted econometric analyses of how far in advance of flight time reservations are made by air passengers.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

Determinants of Airline Market Share – To support the development of expert testimony in an antitrust case involving airline computerized reservation systems I conducted econometric analyses of the determinants of airline market shares.

Effect of Bankruptcy on Airline Bookings – As part of work performed in connection with an antitrust case involving the domestic airline industry I conducted econometric analyses of the effects that declarations of bankruptcy have had on bookings for the bankrupt carriers.

Metropolitan Area Economic Growth – As part of a university research project I conducted econometric studies of the factors influencing the long term economic growth of the Boston Metropolitan area.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-18. Please provide a list of all studies containing econometric analyses that you directed but did not perform.

Response to USPS/UPS-T1-18. In answering this interrogatory I have relied upon my memory and such records as I have. I cannot confirm that the list is complete. I have interpreted "directed" to mean that I worked with an assistant who contributed substantially to technical decisions regarding the design and conduct of the analysis.

Disposable Diaper Sales – To support expert testimony in a commercial dispute involving disposable diapers I directed an econometric analysis of scanner data on sales of different brands and lines of disposable diapers.

Effects of Sales Force Behavior on Medical Device Sales – To support expert testimony in a commercial lawsuit involving a new medical device I directed econometric studies of the effects of sales effort on the penetration rate of the new technology through the target physician audience.

Analysis of Business Jet Resale Prices – To support the development of expert testimony in an antitrust case involving the business jet market I directed econometric analyses of trends in resale prices for business jet aircraft.

Analysis of Airline Pricing Behavior – To support the development of expert testimony in an antitrust case involving the domestic airline industry I directed econometric analyses of airline pricing behavior at the fare basis code level.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

Hedonic Automobile Price Analysis - As part of work conducted in connection with litigation regarding allegations of theft of intellectual property I directed econometric analyses relating automobile prices to automobile features.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-19. Please provide a description and documentation of all alternative analyses you considered but did not use in your testimony.

Response to USPS/UPS-T1-19. I considered an alternative analysis in which the lagged value of total piece handlings was replaced by the lagged value of hours logged in for the activity. Documentation for this alternative analysis is contained in Library Reference UPS-LR-3.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-20. Please refer to page 5, line 9 of your testimony where you refer to the "Commission's well-established determination that mail processing costs are fully volume variable."

(a) Please provide the exact citations to Postal Rate Commission Opinions and Recommended Decisions that determined that mail processing costs are fully volume variable.

(b) Please provide copies of all studies of the variability of mail processing labor costs that you reviewed in preparation of your testimony.

Response to USPS/UPS-T1-20.

(a) In past decisions, the Commission has consistently treated mail processing costs as 100 percent variable. This is evident from the tables entitled "Comparison of Costs Attributed by Cost Segment and Component" contained in Appendix D, page 1 of 4 in Docket Nos. R94-1, R90-1, and R87-1 where mail processing labor costs are clearly shown to be 100 percent attributable.

(b) I have examined Witness Bradley's Direct Testimony and Workpapers, as well as the published article by him cited on page 41 of his Direct Testimony. Since I assume that he already has these materials, I have not enclosed copies.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-21. Please refer to Table 1 on page 7 of your testimony.

Please provide the number of observations used to estimate each of the volume variability estimates provided in that table.

Response to USPS/UPS-T1-21. The following numbers of observations were taken directly from wpimd.lst, wpima.lst, wpibd.lst, and wpiba.lst:

BCS:	25,964
OCR:	20,981
LSM:	22,873
FSM:	21,203
MANL:	28,164
MANF:	28,020
MANPAR:	24,058
MANPRI:	21,318
SPBSP:	3,591
SPBSNP:	6,620
CNCL:	25,462
OPNPRF:	20,438
OPNBBM:	18,429
POUCH:	18,115

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

PLAT:	20,266
SSM:	2,073
PSM:	2,073
SPS:	2,046
IPP:	1,997
SOU:	1,864
NMO:	2,073
PLAT:	2,073
ALLIED:	2,073

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-22. Please refer to page 10, line 9 of your testimony

where you state:

While one might argue that the schedule of wage rates is determined largely by general labor market conditions rather than mail volume, the same cannot be said for the mix of types of time.

(a) Please provide your understanding of the process by which wages for United States Postal Service mail processing workers are set.

(b) Please provide your understanding how often this wage schedule is changed.

(c) Are you familiar with the terms "clerk" and "mailhandler"? If you are familiar with these terms, please provide your understanding of each.

(d) Do you understand how the Postal Service staffs its mail processing operations? If your answer is anything but an unqualified no, please provide all documents that you relied upon to form your understanding.

Response to USPS/UPS-T1-22.

(a) I understand that wages are set through collective bargaining between the Postal Service and the union representing postal workers.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

(b) I understand that the schedule changes every few years when new labor agreements are reached. It may also change over the life of a specific agreement as a result of periodic cost of living increases.

(c) My familiarity with the terms "clerks" and "mailhandlers" comes from USPS LR-H-1, Chapter 3, Page 3-1, Section 3.0:

This work includes mail processing, window service, and administrative and support activities that are performed in post offices and in more specialized and centralized mail processing centers by clerks and mailhandlers. Whereas clerk work occurs in all components in this segment, mailhandler work is mainly mail processing work and involves loading, unloading, and moving mail.

(d) I have some understanding of how the Postal Service staffs its mail processing operations. The sources I have relied upon include Witness Bradley's Direct Testimony and the transcript of his cross-examination. I assume that these documents are available to him, and that it is unnecessary to provide copies of them.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-23. Suppose that a BCS mail processing activity is in long run equilibrium. Now suppose that there is a sustained increase in mail volume flowing through that activity. Please confirm that the Postal Service is more likely to use overtime labor in its short run response to the volume increase than in its long run response to the volume increase. If you do not confirm, please explain how the Postal Service would be more likely to use overtime labor in its long run response than in its short run response.

Response to USPS/UPS-T1-23. I am not sufficiently familiar with the staffing practices of the Postal Service to offer a firm opinion on what it would do in this hypothetical situation. As a general proposition, I would expect that an employer would be more likely to use overtime labor in the short run than in the long run. I have encountered instances, however, in which employers have felt that it was more economical to incur overtime expenses even over the long run rather than incur the benefit costs associated with the hiring of new workers. I have also noted that employers have been willing to incur overtime expenses for extended periods of time when they lacked confidence that the volume increase they were experiencing would persist indefinitely. Your hypothetical postulate of a "sustained" volume increase would seem to exclude these latter reactions, however.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-24. Please refer to page 12 of your testimony. Please confirm that it is your testimony that the number of times a piece is handled is a function of volume.

Response to USPS/UPS-T1-24. Not confirmed. I have testified that this is a possibility, and that Bradley has provided no evidence either to confirm it occurs or to confirm that it does not occur.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-25. Please refer to page 33, line 3 where you refer to the term "scientific method." Please provide a precise definition of that term.

Response to USPS/UPS-T1-25. Webster's Third New International Dictionary 2033

(1993) defines the term scientific method as: "[T]he principles and procedures used in the systematic pursuit of intersubjectively accessible knowledge and involving as necessary conditions the recognition and formulation of a problem, the collection of data through observation and if possible experiment, the formulation of hypotheses, and the testing and confirmation of the hypotheses formulated."

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-26. Please refer to pages 46-49 of USPS-T-13 and Table 15 on page 50, of USPS-T-13 (copies attached).

(a) Please confirm that there are two sets of variabilities presented in that table. If you do not confirm, please indicate how many sets of variabilities are presented.

(b) Please confirm that the first set of variabilities are based upon a set of data before some unusual observations are eliminated. If you do not confirm please explain.

(c) Please confirm that the second set of variabilities are based upon a set of data after some unusual observations are eliminated. If you do not confirm, please explain.

(d) Please confirm that the approach that you espouse in your testimony of using "all useable data" and avoiding "subjective judgement calls" would require recommending use of the first set of variabilities (based upon the large data set) as opposed to the second set of variabilities (with the unusual observations deleted). If you do not confirm, please explain your justification for recommending the use of the second set of variabilities.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

Response to USPS/UPS-T1-26.

- (a) Confirmed.
- (b) Confirmed.
- (c) Confirmed.
- (d) Not necessarily confirmed. I note that the situation to which this

interrogatory refers differs in some important respects from that which I criticized in my testimony.

In USPS-T-13 Witness Bradley made inquiries to determine why the observations in question appear to be unusual, and as a result he knows why they differ from the bulk of the observations. In USPS-T-14 he appears to know nothing about the excluded observations other than that they are outliers within his data set. It is not necessarily inappropriate to decide to conduct an econometric analysis of cost variability for contracts involving the transportation of items other than, for example, baby chicks, to exclude contracts for the transportation of baby chicks, and to then apply the estimated variabilities to expenditures for the transportation of items other than baby chicks. Excluding observations on the basis of such specific criteria is quite different from excluding them simply because they look like outliers.

Another important difference has to do with the amount of data eliminated from the analysis. The numbers of observations eliminated in Table 15 of USPS-T-13 are at most a few dozen, and in the worst case amount to less than ten percent of the

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

original data set. In USPS-T-14, however, the eliminations amount to as much as 30 to 40 percent of the original data set. I believe in general that one needs to have a reason for dropping data from an analysis. I also believe, however, that this need is especially pressing when one wishes to drop a lot of the data, as Witness Bradley has done in USPS-T-14.

1 lowest calculated chi-square statistic is for the intra-BMC cost account. Its value
2 is 6.0137. The critical value for the chi-square distribution with one degree of
3 freedom at the 95 percent level is 3.481.

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

Table 14 Chi Square Tests for Significance of the Region Dummy Variables		
Equation	Degrees of Freedom	Calculated χ^2 Statistic
Box Route	7	1,053.37
Intra-City	1	9.98
Intra-SCF Van	10	334.47
Intra-SCF Trailer	6	142.97
Inter-SCF Van	6	37.93
Inter-SCF Trailer	6	68.66
Intra-BMC	1	6.01
Inter-BMC	4	12.35
Plant Load	5	55.33

19

20 **F. Accounting for Unusual Observations**

21 The HCSS replaced the system of paper contracts. Because of availability of
22 data in electronic form, the current variability analysis did not require collecting
23 and keypunching the data from more than two thousand hard copy contracts.
24 This allowed a more complete data set to be constructed and allowed more
25 detailed analyses to be performed. However, the absence of hard copy
26 contracts precluded review of the specific characteristics of each contract cost
27 segment. This raises the possibility that some of the contract cost segments

1 may be atypical of the general cost-generating function.

2 To investigate this possibility, I manually reviewed the data used in each of
3 the econometric equations presented above. That review revealed that there are
4 a small number of observations in each account category that seem to be quite
5 different from the other observations.

6 These observations are different along the following dimensions. They have:

- 7 a. Extremely low annual cost;
- 8 b. Extremely low annual CFM;
- 9 c. Extremely short or long (for the account) route length;
- 10 d. Extremely low annual miles;
- 11 e. Extremely low or high cost per CFM;
- 12 f. Extremely low or high cost per mile.

13 The existence of these observations raises a difficult problem. The fact they
14 are different does not imply that they are necessarily wrong or contain incorrect
15 data. Yet, if their characteristics are not common to the general population, their
16 inclusion in the econometric equation *could* cloud the identification of the true
17 cost variability.²⁰

18 Eliminating data from an analysis should only be done with great caution. On

1 ²⁰ A request was made to the DNO's to provide feedback on these
2 contracts. The DNO's were asked to verify the information, submit any corrected
3 information or provide an explanation of the unusual nature of the contracts.
4 Review of those response shows that these contracts do indeed contain some
5 unusual circumstances like the transportation of baby chicks, the use of windsled
6 transportation, short-length plant load contracts and low cost, "as needed"
7 contracts. See Library Reference H-181, Responses Concerning Unusual
8 Observations in the HCSS Data Set.

1 one hand, there should always be a presumption for using valid observations,
2 even if the values for a particular observation are not typical of the rest of the
3 data. On the other hand, if the data are from special cases, or do include data
4 entry errors, their use could, potentially, lead to misleading results.

5 Finally, there is the issue of identifying what are "unusual" observations, a
6 process which should always be done *before* the effect on the estimated
7 equations is known. In addition, care should be taken that only truly
8 unrepresentative observations are removed.

9 After examining the data and identifying the small number of unusual
10 observations in each cost pool, I re-estimated all of the econometric equations.
11 The complete results are presented in Workpaper WP-7, but a summary of those
12 results is presented in Table 15.

13 In five cases, Box Route, Intra-City, Intra-SCF trailers, Inter-SCF trailers, and
14 inter-BMC, the elimination of these observations did not affect the results. In
15 these cases, the new estimated variability was within 2 percentage points of the
16 old estimated variability. Elimination of the unusual observations is not
17 important in these cases. The remaining four cases, Intra-SCF vans, Inter-SCF
18 vans, Intra-BMC, and Plant Load, were quite different because elimination of a
19 small number of observations has a large impact. In each case, the estimated
20 variability rises by a large amount. The most extreme case was the intra-SCF
21 van category where the elimination of 30 observations out of 5,464 observations
22 caused the variability to rise by 10.5 percentage points. In addition, in three of
23 these four cases, the fit of the equation was significantly improved by eliminating

1 the unusual observations. In the last case, the fit was improved but not by a
2 large amount.

3 Although both the previously reported results and these results have merit, I
4 recommend that the Commission use the variabilities calculated on the data set
5 with the unusual observations removed. My judgment is based upon three
6 factors: the great difference between the characteristics of the omitted
7 observations and the rest of the data, the material increase in certain of the
8 variabilities from omitting the observations, and the material increase in the
9 goodness of fit of several equations from omitting the observations.

10

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

Category	# Of Observations			R ²			Variables		
	Before	After	Change	Before	After	Change	Before	After	Change
Box Route	5,503	5,474	-29	0.7341	0.7184	-0.0157	27.76%	29.51%	1.75%
Intra-City	421	385	-36	0.6100	0.8274	0.2174	63.52%	64.88%	1.36%
Intra-SCF Vans	5,484	5,434	-30	0.7772	0.8515	0.0743	51.04%	61.51%	10.47%
Intra-SCF Trailers	570	559	-11	0.8604	0.8514	-0.0090	86.34%	87.73%	1.39%
Inter-SCF Vans	997	982	-15	0.6311	0.8437	0.2126	56.90%	65.74%	8.84%
Inter-SCF Trailers	683	669	-14	0.9420	0.9073	-0.0347	93.49%	95.34%	1.85%
Intra-BMC	344	328	-16	0.8597	0.9520	0.0923	93.21%	97.43%	4.22%
Inter-BMC	177	172	-5	0.9727	0.9473	-0.0254	94.85%	94.88%	0.03%
Plant Load	510	476	-34	0.6948	0.8790	0.1842	87.84%	94.66%	6.82%

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-27. Please refer to your testimony at page 34 where you discuss the complexity of the time trend in USPS-T-14.

(a) Are you familiar with the econometric term "segmented trend"? If so, please provide a mathematical definition of the term.

(b) Are you familiar with the econometric term "shifting trend"? If so, please provide a mathematical definition of the term.

(c) Are you familiar with the term "broken trend"? If so, please provide a mathematical definition of the term.

Response to USPS/UPS-T1-27.

(a) Not as a precisely defined econometric term.

(b) Not as a precisely defined econometric term.

(c) Not as a precisely defined econometric term.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-28. Please refer to Figure 4 on page 37 of your testimony. The only documentation of that figure is the note that says "Source: WP VI."

(a) Please confirm that there are no plots or listings of data presented in your Workpaper VI. If you do not confirm, please provide exact citations where the data listings or plots are included in your Workpaper VI.

(b) Please confirm that Figure 4 was not produced by the SAS program listed in Workpaper VI, entitled, "wpvimd.sas." If you do not confirm, please provide the exact code that generates Figure 4. Also, please show where Figure 4 appears in the SAS listing.

(c) Please provide, in electronic format, the data points that were plotted in Figure 4.

(d) The program in your Workpaper VI appears to create a data set entitled, "trend.csv." Please provide a copy of the data set along with appropriate documentation.

Response to USPS/UPS-T1-28.

(a) Confirmed.

(b) The SAS program contained in Workpaper VI produced the plotting points for Figure 4. The program did not do the actual plotting. Figure 4 was generated from the plotting points produced by the SAS program using Freelance Version 96.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

(c) Trend.csv, provided as Library Reference UPS-LR-4 in response to part (d), contains the data used to create the plot.

(d) See Library Reference UPS-LR-4. The columns for the data set trend.csv are activity, FYAP, and TREND as seen in the PUT statement in wpvimd.sas. The calculations for the TREND variable are clearly defined in wpvimd.sas, with the fixed effect coefficients being those provided in Bradley's workpapers.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-29. Please refer to Figure 3 on page 36 of your testimony. The only documentation of that figure is the note that says "Source: WP VI."

(a) Please confirm that there are no plots or listings of data presented in your Workpaper VI. If you do not confirm, please provide exact citations where the data listings or plots are included in your Workpaper VI.

(b) Please confirm that Figure 3 was not produced by the SAS program listed in Workpaper VI, entitled, "wpvimd.sas." If you do not confirm, please provide the exact code that generates Figure 3. Also, please show where Figure 3 appears in the SAS listing.

(c) Please provide, in electronic format, the data points that were plotted in Figure 3.

Response to USPS/UPS-T1-29.

(a) Confirmed.

(b) The SAS program calculated the plotting points for Figure 3, but did not do the actual plotting. Figure 3 was generated from the plotting points produced by the SAS program using Freelance Version 96.

(c) Provided in data set trend.csv.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-30. Please provide electronic versions of the following programs.

- (a) WPIMD.SAS
- (b) WPIMA.SAS
- (c) WPIBD.SAS
- (d) WPIBA.SAS
- (e) WPIIIMD.SAS
- (f) WPIVMD.SAS
- (g) WPIVMA.SAS
- (h) WPIVBD.SAS
- (i) WPIVBA.SAS
- (j) WPVMD.SAS
- (k) WPVIMD.SAS

Response to USPS/UPS-T1-30. This has already been provided as Library Reference
UPS-LR-1.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-31. Please provide an electronic version of the spreadsheet entitled "WPIII.XLS."

Response to USPS/UPS-T1-31. This has already been provided as Library Reference UPS-LR-1.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-32. Please refer to Table I of your testimony.

- (a) Please confirm that this table is based upon what you call a "cross-sectional" data set. If you do not confirm, please explain.
- (b) Please confirm that the cross-sectional values are found by calculating the average values for the variables like HOURS, MANR and TPH for each site. If you do not confirm, please explain how the cross-sectional values are formed.
- (c) Please confirm that on lines 4-5 of page 6 you state: "I have rerun Bradley's cross-sectional analysis on a data set that uses all of the data." If you do not confirm, please explain.
- (d) Please refer to page 17, lines 11-22. Please confirm that you claim that the MODS data includes multiple instances in which there is only a single observation for a site for a given mail processing activity. If you do not confirm, please explain the statement on lines 17 and 18 of page 16: "There are, for example, hundreds of instances in which a site reports piece handlings for a specific activity for only a single period."
- (e) Please confirm that this means that some of the observations used in the cross sectional analysis presented are based upon a single observation, while others are based upon more than 100 observations. If you do not confirm, please explain.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

(f) Please provide the number of observations that went into forming the average value for each of the cross-sectional observations used to estimate the Table 1 variabilities for:

- (1) BCS Sorting
- (2) OCR Sorting
- (3) LSM Sorting
- (4) Manual Letter Sorting
- (5) Manual Flat Sorting
- (6) Manual Parcel Sorting
- (7) Manual Priority Mail Sorting
- (8) SPBS Priority Mail Sorting
- (9) SPBS Non Priority Mail Sorting
- (10) Cancellation and Mail Prep
- (11) Opening - Pref Mail
- (12) Opening - BBM
- (13) Pouching
- (14) Platform

Response to USPS/UPS-T1-32.

- (a) Confirmed.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

- (b) Confirmed.
- (c) Confirmed.
- (d) Confirmed.
- (e) Confirmed.
- (f) See Library Reference UPS-LR-5.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-33. Please refer to page 30 of your testimony. Please provide the formula for the Baltagi-Li serial correlation coefficient you calculated.

Response to USPS/UPS-T1-33. The formula comes directly from the programs provided in LR-H-147 as they appear in Bradley's program and testimony. See, for example, USPS-T-14, page 50, equations 12-14.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-34. Please refer to Table 5 on page 32 of your testimony.

a. Please confirm that the table provides two columns of variabilities, one entitled "Bradley's Scrubbed Data" and one entitled "All Usable Observations." Please explain anything but an unqualified confirmation.

b. Please confirm that the variability listed for the Manual Parcel Sorting Activity is 40% for the "Bradley's Scrubbed Data" column but 32% for the "All Usable Observations" column. Please explain anything but an unqualified confirmation.

c. Please confirm that the variability listed for the Manual Priority Mail Sorting Activity is 45% for the "Bradley's Scrubbed Data" column but 42% for the "All Usable Observations" column. Please explain anything but an unqualified confirmation.

d. Please confirm that the variability listed for the SPBS-Priority Mail Sorting Activity is 80% for the "Bradley's Scrubbed Data" column but 73% for the "All Usable Observations" column. Please explain anything but an unqualified confirmation.

e. Please confirm that the variability listed for the Cancellation and Mail Prep Activity is 65% for the "Bradley's Scrubbed Data" column but 53% for the "All Usable Observations" column. Please explain anything but an unqualified confirmation.

f. Please confirm that the variability listed for the Pouching Activity is 83% for the "Bradley's Scrubbed Data" column but 81% for the "All Usable Observations" column. Please explain anything but an unqualified confirmation.

g. Please confirm that there are 12 activities for which the variability is higher in the "Bradley's Scrubbed Data" column than it is in the "All Usable Observations" column. If you do not confirm, please provide the number of activities for which the variability is higher in the "Bradley's Scrubbed Data" column.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

h. Please confirm that there are 11 activities for which the variability is lower in the "Bradley's Scrubbed Data" column than it is in the "All Usable Observations" column. If you do not confirm, please provide the number of activities for which the variability is lower in the "Bradley's Scrubbed Data" column.

Response to USPS/UPS-T1-34. (a) Confirmed.

- (b) Confirmed.
- (c) Confirmed.
- (d) Confirmed.
- (e) Confirmed.
- (f) Confirmed.
- (g) Confirmed.
- (h) Confirmed.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-35. Suppose that an estimated variability is 20 percentage points different from 100 percent. In your opinion, does that estimated variability support the assumption that the true variability is 100 percent? Please explain fully.

Response to USPS/UPS-T1-35. How one should interpret the evidence posed by this hypothetical depends upon a number of factors. Most important among these is the quality of the analysis that produced the estimate of variability. If the data upon which the study is based are unreliable, if the model is misspecified, or if the analysis is technically flawed, one should be extremely cautious in basing conclusions regarding variability on the study's results, regardless of the specific numerical value of the estimate. If, however, one has no reason for concern regarding the quality of the analysis, other considerations come into play. If the estimate of variability produced by the study is, say, 80 percent and the standard error of that estimate is 2 percent, these results would suggest that it is unlikely that the true variability is 100 percent. If the estimate of variability produced by the analysis is 80 percent and the standard error of that estimate is 30 percent, one's interpretation of the results would probably depend upon what other evidence regarding variability is available. If one had prior reason to believe that variability is 100 percent, an imprecise variability estimate of 80 percent could be interpreted as being consistent with that prior belief.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-34. Please refer to Table 5 on page 32 of your testimony.

a. Please confirm that the table provides two columns of variabilities, one entitled "Bradley's Scrubbed Data" and one entitled "All Usable Observations."

Please explain anything but an unqualified confirmation.

b. Please confirm that the variability listed for the Manual Parcel Sorting Activity is 40% for the "Bradley's Scrubbed Data" column but 32% for the "All Usable Observations" column. Please explain anything but an unqualified confirmation.

c. Please confirm that the variability listed for the Manual Priority Mail Sorting Activity is 45% for the "Bradley's Scrubbed Data" column but 42% for the "All Usable Observations" column. Please explain anything but an unqualified confirmation

d. Please confirm that the variability listed for the SPBS-Priority Mail Sorting Activity is 80% for the "Bradley's Scrubbed Data" column but 73% for the "All Usable Observations" column. Please explain anything but an unqualified confirmation.

e. Please confirm that the variability listed for the Cancellation and Mail Prep Activity is 65% for the "Bradley's Scrubbed Data" column but 53% for the "All Usable Observations" column. Please explain anything but an unqualified confirmation.

f. Please confirm that the variability listed for the Pouching Activity is 83% for the "Bradley's Scrubbed Data" column but 81% for the "All Usable Observations" column. Please explain anything but an unqualified confirmation.

g. Please confirm that there are 12 activities for which the variability is higher in the "Bradley's Scrubbed Data" column than it is in the "All Usable Observations" column. If you do not confirm, please provide the number of activities for which the variability is higher in the "Bradley's Scrubbed Data" column.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

h. Please confirm that there are 11 activities for which the variability is lower in the "Bradley's Scrubbed Data" column than it is in the "All Usable Observations" column. If you do not confirm, please provide the number of activities for which the variability is lower in the "Bradley's Scrubbed Data" column.

Response to USPS/UPS-T1-34. (a) Confirmed.

- (b) Confirmed.
- (c) Confirmed.
- (d) Confirmed.
- (e) Confirmed.
- (f) Confirmed.
- (g) Confirmed.
- (h) Confirmed.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-35. Suppose that an estimated variability is 20 percentage points different from 100 percent. In your opinion, does that estimated variability support the assumption that the true variability is 100 percent? Please explain fully.

Response to USPS/UPS-T1-35. How one should interpret the evidence posed by this hypothetical depends upon a number of factors. Most important among these is the quality of the analysis that produced the estimate of variability. If the data upon which the study is based are unreliable, if the model is misspecified, or if the analysis is technically flawed, one should be extremely cautious in basing conclusions regarding variability on the study's results, regardless of the specific numerical value of the estimate. If, however, one has no reason for concern regarding the quality of the analysis, other considerations come into play. If the estimate of variability produced by the study is, say, 80 percent and the standard error of that estimate is 2 percent, these results would suggest that it is unlikely that the true variability is 100 percent. If the estimate of variability produced by the analysis is 80 percent and the standard error of that estimate is 30 percent, one's interpretation of the results would probably depend upon what other evidence regarding variability is available. If one had prior reason to believe that variability is 100 percent, an imprecise variability estimate of 80 percent could be interpreted as being consistent with that prior belief.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-36. Suppose that an estimated variability is 30 percentage points different from 100 percent. In your opinion, does that estimated variability support the assumption that the true variability is 100 percent? Please explain fully.

Response to USPS/UPS-T1-36. See my response to USPS/UPS-T1-35.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-37. Please refer to page 11 lines 20-21 of your testimony where you state that adjustments for inflation and changes in wage levels "are not difficult to make."

a. Would you recommend the same easy adjustment for inflation that you would for wage levels.

b. Please explain in detail, the easy adjustments that you would make for inflation and changes in wage levels.

c. Would your recommended adjustment be the same for all activities? Please explain fully.

d. Would your recommended adjustments be the same for all sites? Please explain fully.

Response to USPS/UPS-T1-37. (a)-(b). No. These adjustments involve the use either of an index of prices or an index of wages. One could follow either of two approaches. The first approach involves the division of mail processing labor costs by an appropriate index to express those costs in real (i.e., inflation-adjusted) terms. One would then proceed with the analysis, taking the natural logarithm of real labor costs as the dependent variable. The second approach takes nominal (i.e., unadjusted) mail processing labor costs as the dependent variable and includes the natural logarithm of the inflation index as an independent variable. The second approach is probably superior, since it includes the first as a special case.

(c) Yes. The purpose of this adjustment is to capture the effects of general labor market conditions on labor costs. All activities at a given point in time at a given facility are subject to the same general labor market conditions.

(d) The answer to this question depends on the characteristics of the index used to make the adjustment, and on which of the two approaches described

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

above in my response to part (b) is chosen. If the index were included in the model as an additional independent variable, then other characteristics of facilities that needed to be taken into account in the adjustment process could also be incorporated into the model as additional independent variables. Building the adjustments into the model in this way would make it possible to apply a single adjustment process to all facilities.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-38. Consider two estimated variabilities, Variability A which is 85% and Variability B which is 75%.

- a. Please confirm that the difference between the two variabilities is 10 percentage points. If you do not confirm, please provide the correct difference.
- b. Suppose that the estimated Variability A is greater than the estimated Variability B for three reasons, (1) the technology of sorting is different, (2) the time periods of estimation are different, and (3) the use of the operations are different. Please provide what part of the 10 percentage point difference is ascribable to each of the three reasons.

Response to USPS/UPS-T1-38. (a) Confirmed.

- (b) The hypothetical situation posed by this question provides no basis for forming an opinion on the relative importance of the three factors cited.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-39. Please refer to page 27 of your testimony where you state:

Bradley's decision to eliminate observations involving low levels of piece handling also raises questions about the representativeness of his results.

- a. Please confirm that Table H148-1 on page H148-7 of Library Reference H-148 shows that 9 observations were eliminated for the OCR activity as a result of this scrub. If you do not confirm, please provide what you think to be the correct number.
- b. Please confirm that there are 21,345 observations in the OCR data set on which this scrub was run. If you do not confirm, please provide the correct number of observations in the data set on which this scrub was run.
- c. Please confirm that Table H148-1 on page H148-7 of Library Reference H-148 shows that 57 observations were eliminated for the manual letter activity as a result of this scrub. If you do not confirm, please provide what you think to be the correct number.
- d. Please confirm that there are 28,648 observations in the manual letter data set on which this scrub was run. If you do not confirm, please provide the correct number of observations in the data set on which this scrub was run.
- e. Please confirm that Table H148-1 on page H148-7 of Library Reference H-148 shows that 47 observations were eliminated for the BCS activity as a result of this scrub. If you do not confirm, please provide what you think to be the correct number.
- f. Please confirm that there are 26,426 observations in the BCS data set on which this scrub was run. If you do not confirm, please provide the correct number of observations in the data set on which this scrub was run.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

g. Please confirm that Table H148-1 on page H148-7 of Library Reference H-148 shows that 73 observations were eliminated for the LSM as a result of this scrub. If you do not confirm, please provide what you think to be the correct number.

h. Please confirm that there are 23,251 observations in the LSM data set on which this scrub was run. If you do not confirm, please provide the correct number of observations in the data set on which this scrub was run.

i. Please confirm that Table H148-1 on page H148-7 of Library Reference H-148 shows that 118 observations were eliminated for the manual flat activity as a result of this scrub. If you do not confirm, please provide what you think to be the correct number.

j. Please confirm that there are 28,504 observations in the manual flat data set on which this scrub was run. If you do not confirm, please provide the correct number of observations in the data set on which this scrub was run.

k. Please confirm that Table H148-1 on page H148-7 of Library Reference H-148 shows that 74 observations were eliminated for the FSM activity as a result of this scrub. If you do not confirm, please provide what you think to be the correct number.

l. Please confirm that there are 21,544 observations in the FSM data set on which this scrub was run. If you do not confirm, please provide the correct number of observations in the data set on which this scrub was run.

m. Please confirm that Table H148-1 on page H148-7 of Library Reference H-148 shows that 1,148 observations were eliminated for the manual parcel activity as a result of this scrub. If you do not confirm, please provide what you think to be the correct number.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

n. Please confirm that there are 24,814 observations in the manual parcel data set on which this scrub was run. If you do not confirm, please provide the correct number of observations in the data set on which this scrub was run.

o. Please confirm that Table H148-1 on page H148-7 of Library Reference H-148 shows that 15 observations were eliminated for the SPBS Non-Priority activity as a result of this scrub. If you do not confirm, please provide what you think to be the correct number.

p. Please confirm that there are 6,775 observations in the SPBS Non-Priority data set on which this scrub was run. If you do not confirm, please provide the correct number of observations in the data set on which this scrub was run.

Response to USPS/UPS-T1-39. (a) Confirmed. However, these eliminations break the continuity of the data series and result in further eliminations when the data are subsequently scrubbed to eliminate data points that fail to meet Bradley's continuity requirements.

(b) Confirmed.

(c) Confirmed. However, these eliminations break the continuity of the data series and result in further eliminations when the data are subsequently scrubbed to eliminate data points that fail to meet Bradley's continuity requirements.

(d) Confirmed.

(e) Confirmed. However, these eliminations break the continuity of the data series and result in further eliminations when the data are subsequently scrubbed to eliminate data points that fail to meet Bradley's continuity requirements.

(f) Confirmed.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

(g) Confirmed. However, these eliminations break the continuity of the data series and result in further eliminations when the data are subsequently scrubbed to eliminate data points that fail to meet Bradley's continuity requirements.

(h) Confirmed.

(i) Confirmed. However, these eliminations break the continuity of the data series and result in further eliminations when the data are subsequently scrubbed to eliminate data points that fail to meet Bradley's continuity requirements.

(j) Confirmed.

(k) Confirmed. However, these eliminations break the continuity of the data series and result in further eliminations when the data are subsequently scrubbed to eliminate data points that fail to meet Bradley's continuity requirements.

(l) Confirmed.

(m) Confirmed. However, these eliminations break the continuity of the data series and result in further eliminations when the data are subsequently scrubbed to eliminate data points that fail to meet Bradley's continuity requirements.

(n) Confirmed.

(o) Confirmed. However, these eliminations break the continuity of the data series and result in further eliminations when the data are subsequently scrubbed to eliminate data points that fail to meet Bradley's continuity requirements.

(p) Confirmed.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-40. Consider the following model:

$$y_{it} = \delta_j + \beta X_{it} + \varepsilon_{it} \quad i = 1, \dots, N; \quad t = 1, \dots, T.$$

where y_{it} is the dependent variable, δ_j is a vector of site-specific constants, X_{it} is the explanatory variable and ε_{it} is independently identically distributed, with mean zero and variance σ^2 .

If this model is estimated by Ordinary Least Squares (OLS) with cross-sectional data, please confirm that the probability limit of the OLS estimator is given by:

$$Plim \hat{\beta}_{LS} = \beta + \frac{COV(X_{it} \delta_j)}{\sigma_x^2}$$

where σ_x^2 is the variance of X_{it} .

If you do not confirm, please provide what you think the probability limit of the OLS estimator is.

Response to USPS/UPS-T1-40. As stated the question is incorrect and cannot be answered. The question assumes a cross-sectional dataset. Therefore, the question assumes $T=1$. As a result, this model cannot be estimated as specified because the number of parameters exceeds the sample size.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-41. Please refer to page 5, lines 9 and 10, of your testimony.

- a. Did you review the professional econometric literature in preparation of your testimony?
- b. Please identify and summarize all empirical studies conducted prior to Docket No. R97-1 that you are aware of that produce volume variabilities of 100% or more for manual letter and manual flat sorting operations at mail processing facilities. Please provide copies of those studies.
- c. With respect to the empirical studies identified and summarized in part (b.) above, please answer the following questions:
 - i. Were any observations eliminated from the data sets in these studies due to erroneous or suspect values?
 - ii. What were the measures of volumes used? Were they piece handlings, RPW pieces, ODIS pieces?
 - iii. How were the dependent variables defined? Specifically, were they defined as costs or workhours?

Response to USPS/UPS-T1-41. (a) Not all of it.

- (b) I am not aware of such studies.
- (c) N/A.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-42. Please refer to the "cross-sectional" volume variabilities that you present at table 1, page 7 and table 6, page 41 of your testimony. Please confirm that, in your view, both the table 1 variabilities and the table 6 variabilities qualify as estimates of "long-run volume variabilities." If you do not confirm, please explain why either set of variabilities do not constitute, in your view, estimates of long-run variabilities.

Response to USPS/UPS-T1-42. Each set of variabilities could be interpreted as estimates of the "long-run" volume variability.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-40. Consider the following model:

$$y_{it} = \delta_i + \beta X_{it} + \varepsilon_{it} \quad i = 1, \dots, N; \quad t = 1, \dots, T.$$

where y_{it} is the dependent variable, δ_i is a vector of site-specific constants, X_{it} is the explanatory variable and ε_{it} is independently identically distributed, with mean zero and variance σ^2 .

If this model is estimated by Ordinary Least Squares (OLS) with cross-sectional data, please confirm that the probability limit of the OLS estimator is given by:

$$\text{Plim } \hat{\beta}_{LS} = \beta + \frac{\text{COV}(X_{it}, \delta_i)}{\sigma_x^2}$$

where σ_x^2 is the variance of X_{it} .

If you do not confirm, please provide what you think the probability limit of the OLS estimator is.

Response to USPS/UPS-T1-40. As stated the question is incorrect and cannot be answered. The question assumes a cross-sectional dataset. Therefore, the question assumes $T=1$. As a result, this model cannot be estimated as specified because the number of parameters exceeds the sample size.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-41. Please refer to page 5, lines 9 and 10, of your testimony.

- a. Did you review the professional econometric literature in preparation of your testimony?
- b. Please identify and summarize all empirical studies conducted prior to Docket No. R97-1 that you are aware of that produce volume variabilities of 100% or more for manual letter and manual flat sorting operations at mail processing facilities. Please provide copies of those studies.
- c. With respect to the empirical studies identified and summarized in part (b.) above, please answer the following questions:
 - i. Were any observations eliminated from the data sets in these studies due to erroneous or suspect values?
 - ii. What were the measures of volumes used? Were they piece handlings, RPW pieces, ODIS pieces?
 - iii. How were the dependent variables defined? Specifically, were they defined as costs or workhours?

Response to USPS/UPS-T1-41. (a) Not all of it.

- (b) I am not aware of such studies.
- (c) N/A.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-42. Please refer to the "cross-sectional" volume variabilities that you present at table 1, page 7 and table 6, page 41 of your testimony. Please confirm that, in your view, both the table 1 variabilities and the table 6 variabilities qualify as estimates of "long-run volume variabilities." If you do not confirm, please explain why either set of variabilities do not constitute, in your view, estimates of long-run variabilities.

Response to USPS/UPS-T1-42. Each set of variabilities could be interpreted as estimates of the "long-run" volume variability.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-43. Please consider the following hypothetical. There are two processing facilities, X and Y. Volume processed in manual letter sorting operations is initially twice as high at facility Y than at facility X. Suppose that manual letter sorting volume at X begins to increase and eventually achieves the level initially found at Y. Further, once this new level is attained at X, it remains there. Please confirm that based on your Table 1 results, workhours in the manual labor sorting operations in facility X would be expected to exceed those initially seen in facility Y. If you do not confirm, please explain the increase in hours predicted by your Table 1 results.

Response to USPS/UPS-T1-43. Not confirmed. If the models upon which Table 1 is based fit the data exactly, then if facilities X and Y wound up with the same volume, they would wind up with the same workhours. However, the models do not fit the data exactly. Random factors not explicitly accounted for by the model could cause workhours at facility X to be higher or lower than those at facility Y.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-44. Please refer to page 39 of your testimony.

a. Please confirm that it is your opinion that the long-run variability of mail processing labor costs exceeds the short-run variability of mail processing labor costs.

b. Please explain how much time it takes to move from the short-run to the long-run in the manual letter sorting activity.

Response to USPS/UPS-T1-44. In my direct testimony I discuss a number of factors that could influence the relationship between the short run and long run volume variability of mail processing labor costs. For example, on page 10 at lines 13-18, I state:

High-volume periods could be characterized by the more extensive use of lower-cost temporary or casual workers. Conversely, high-volume periods could require the involvement of higher-cost senior or supervisory personnel in order to meet mail processing schedules and maintain service standards. It is also possible that maintenance of service standards during high-volume periods could involve greater use of overtime and greater amounts of overtime pay.

As I noted in my response to interrogatory USPS/UPS-T1-23, most firms rely on overtime as a short run measure, hiring additional straight-time workers when they are confident that the increased volume they are attempting to meet will persist in the future. If the Postal Service follows this procedure, the factors cited above would tend to create a situation in which mail processing labor costs were more variable over the short run than over the long run.

On page 39, line 18, through page 40, line 4, of my direct testimony I state:

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

It is possible that productivity might increase in response to a temporary surge in volume. Workers might increase the pace of work, take fewer or shorter breaks, or adopt other strategies for dealing with the added workload. In his responses to interrogatories, Bradley concedes this point.²¹ Such increases in productivity may not be sustainable, however, and if the increase in volume persists it may eventually be necessary to hire additional workers to handle the increased workload. Thus, after an initial surge it is likely that productivity would decline to something closer to its original level.

The effect of the behavior described above would be to make mail processing labor costs less variable over the short term than over the long term.

I have not conducted a study to determine which of the two factors described above dominates, or whether other factors might also come into play to influence the relationship between short run and long run volume variabilities. However, the contrast between Bradley's short run results and the longer run results provided by the cross-sectional model does suggest that the volume variability of mail processing labor costs is higher over the long run than over the short run.

²¹ Tr. 11/5512.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-45. Please refer to your testimony at pages 16-17, where you state:

It is difficult to imagine actual operational practices that would . . . bring an activity to life for only a single accounting period. Data entry errors, such as recording piece handlings under the wrong activity or with the wrong facility identifier, would seem to provide a plausible explanation.

a. Please confirm that it is your testimony that the occurrence of a site with one observation is likely to be due to a data entry error such as a wrong facility identifier. If you do not confirm, please explain fully.

b. Please state for how many consecutive periods a site must report data for an operation before it is reasonable to believe that the recording of the operation is not due to data entry errors.

Response to USPS/UPS-T1-45. (a) Confirmed. However, I do not believe that it is impossible for an activity to be in operation at a particular site for only a single accounting period. Such situations may exist.

(b) One may reasonably accept the possibility that even when only one recorded period of data is present, it may represent real data as opposed to data entry errors. However, when there are very few observations compared to the total possible number of observations, this fact raises suspicions regarding data quality. In such a case investigation is warranted.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

It is possible that productivity might increase in response to a temporary surge in volume. Workers might increase the pace of work, take fewer or shorter breaks, or adopt other strategies for dealing with the added workload. In his responses to interrogatories, Bradley concedes this point.²¹ Such increases in productivity may not be sustainable, however, and if the increase in volume persists it may eventually be necessary to hire additional workers to handle the increased workload. Thus, after an initial surge it is likely that productivity would decline to something closer to its original level.

The effect of the behavior described above would be to make mail processing labor costs less variable over the short term than over the long term.

I have not conducted a study to determine which of the two factors described above dominates, or whether other factors might also come into play to influence the relationship between short run and long run volume variabilities. However, the contrast between Bradley's short run results and the longer run results provided by the cross-sectional model does suggest that the volume variability of mail processing labor costs is higher over the long run than over the short run.

²¹ Tr. 11/5512.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-45. Please refer to your testimony at pages 16-17, where you state:

It is difficult to imagine actual operational practices that would . . . bring an activity to life for only a single accounting period. Data entry errors, such as recording piece handlings under the wrong activity or with the wrong facility identifier, would seem to provide a plausible explanation.

a. Please confirm that it is your testimony that the occurrence of a site with one observation is likely to be due to a data entry error such as a wrong facility identifier. If you do not confirm, please explain fully.

b. Please state for how many consecutive periods a site must report data for an operation before it is reasonable to believe that the recording of the operation is not due to data entry errors.

Response to USPS/UPS-T1-45. (a) Confirmed. However, I do not believe that it is impossible for an activity to be in operation at a particular site for only a single accounting period. Such situations may exist.

(b) One may reasonably accept the possibility that even when only one recorded period of data is present, it may represent real data as opposed to data entry errors. However, when there are very few observations compared to the total possible number of observations, this fact raises suspicions regarding data quality. In such a case investigation is warranted.

1 CHAIRMAN GLEIMAN: Does any participant have
2 additional written cross-examination for the witness?

3 MS. DUCHEK: Yes, Mr. Chairman, the Postal Service
4 has additional written cross-examination for Dr. Neels. We
5 just received yesterday responses to USPS/UPS-T-1-46 through
6 48, which relate to Dr. Neels direct testimony, which we
7 would like designated. In addition we received
8 USPS/UPS-ST-1 through 3 and MPA/UPS-ST-1 through 4. Both of
9 those sets relate to Dr. Neels' supplemental testimony, and
10 we would like those designated as well. I have two packets
11 prepared which I can hand to the witness.

12 CHAIRMAN GLEIMAN: If you would proceed to do
13 that.

14 THE WITNESS: Thank you.

15 CHAIRMAN GLEIMAN: Mr. Neels, if these questions
16 were asked of you today, would your answers be the same as
17 those you previously provided in writing?

18 THE WITNESS: They would.

19 CHAIRMAN GLEIMAN: That being the case, Ms.
20 Duchek, if you would hand the copies to the reporter, I will
21 direct that the additional designated written
22 cross-examination of the witness be accepted into evidence
23 and transcribed into the record at this point.

24 [Additional Designation of Written
25 Cross-Examination of Kevin Neels,

1 UPS-T-1, and Additional Designation
2 of Written Cross-Examination of
3 Kevin Neels, UPS-ST-1, were
4 received into evidence and
5 transcribed into the record.]
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-46. Please refer to your response to USPS/UPS-T1-40 in which you state that the question "cannot be answered." Your answer states:

The question assumes a cross-sectional dataset. Therefore, the question assumes $T=1$. As a result, this model cannot be estimated as specified because the number of parameters exceeds the sample size.

(a) Please confirm that you estimated a cross-sectional version of witness Bradley's model in which $T=1$. If you do not confirm, please provide the value for T in your cross-sectional version of witness Bradley's model.

(b) Please confirm that you estimated a cross-sectional version of witness Bradley's model by dropping the site specific effects and then estimating the model with one observation for each site. If you do not confirm, please provide the estimated values for the site-specific effects from your cross-sectional model.

(c) Please confirm that it is possible to estimate the model (and in particular the β coefficients) presented in USPS/UPS-T1-40 by dropping the facility-specific variables and estimating the model by Ordinary Least Squares with one observation for each site. If you do not confirm, please demonstrate mathematically why this estimation procedure cannot be performed.

(d) Please answer USPS/UPS-T-1-40 assuming the usual procedure of dropping the facility specific effects in estimating the cross-sectional version of the model presented therein.

Response to USPS/UPS-T1-46.

(a) Confirmed.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

(b) Confirmed.

(c) Not Confirmed. Dropping the facility-specific constants and applying Ordinary Least Squares results in the estimation of a different model. Specifically, the suggested procedure implies a model of the form:

$$Y_{it} = \beta X_{it} + \epsilon_{it} \quad (1)$$

This model differs from the model presented in interrogatory USPS/UPS-T1-40 in that it omits the site-specific constants δ_j .

Estimation of the model presented in interrogatory USPS/UPS-T1-40 requires that the right hand side variables include the variable X as well as a zero/one dummy variable for each of the sites in the sample. Attempting to include these variables in a regression to be estimated using a cross-section of data for a single time period would create a situation in which the number of parameters to be estimated would exceed the total number of degrees of freedom in the data set. The cross-products matrix constructed from that set of right hand side variables would not be full rank, and could not be inverted.

The model shown in equation (1) above, which is NOT the model posed in interrogatory USPS/UPS-T1-40, could be estimated using Ordinary Least Squares.

(d) The "usual procedure" in estimating cross-sectional models is to assume that the facility-specific error terms have a zero mean and are uncorrelated with the independent variables (or in this case, variable) in the model. Under this "usual procedure," the probability limit of the Ordinary Least Squares estimator is simply β . If the assumption is unwarranted, dropping the facility-specific effects would yield a misspecified model. I do not agree that the "usual procedure" in such a case would be to estimate a misspecified model.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-47. Please refer to your response to USPS/UPS-T1-43 in which you state that "Random factors not explicitly accounted for by the model could cause workhours at facility X to be higher or lower than those at facility Y."

- (a) Please confirm that the first two words of your answer are "not confirmed."
- (b) Please confirm that USPS/UPS-T1-43 asks "If you do not confirm, please explain the increase in hours predicted by your Table 1 results." (Emphasis added).
- (c) Please provide the increase in hours predicted by your Table 1 results and explain that prediction.
- (d) Please confirm that the question asked if "workhours in the manual labor sorting operations in facility X would be expected to exceed those initially seen in facility Y." (Emphasis added).
- (e) Please confirm that when using an econometric equation to make predictions, the expected values of "random factors not explicitly accounted for by the model" are typically set to zero. If you do not confirm, please explain how those expected values could be calculated in this case.
- (f) Using the standard econometric assumption that the expected values of the "random factors not explicitly accounted for by the model" are zero when using an econometric equation, please answer the question.

Response to USPS/UPS-T1-47.

- (a) Confirmed.
- (b) Confirmed.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

(c) As I stated in my original response to USPS/UPS-T1-43:

"...if facilities X and Y wound up with the same volume, they would wind up with the same workhours."

The values for the dependent variable predicted by the model for the two facilities depend on the values taken by the independent variables for those two facilities. If the independent variables for the two facilities take identical values (including Identical TPH), the model will generate identical predictions for them.

- (d) Confirmed.
- (e) Confirmed.
- (f) See response to (c) above.

FEB 26 '98 14:11 FR PIPER MARBURY LLP 215 656 3301 TO 10257#5487#264#1 P.07/07

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-T1-48. Please refer to USPS/UPS-T1-44. It appears that you did not provide an answer to part b of the question. Please provide that answer.

Response to USPS/UPS-T1-48. In economic discussions the "long run" is generally defined as that period of time required for factor ratios to adjust fully to changes in relative prices. In the context of manual letter sorting, the relevant factors of production are labor and capital in the form of plant and equipment. Adjusting inputs of plant and equipment could potentially take a period of a year or more. The exact time period required would depend upon institutional factors, such as the speed with which the Postal Service recognized and responded to changes in the economic environment. I cannot provide an exact figure.

It is likely that labor inputs could be adjusted more quickly. The time period required to adjust fully to changed economic circumstances would again depend upon institutional factors, such as the speed with which the Postal Service can recruit, hire, and train workers. Very likely, it depends also on factors such as the direction of change (i.e., whether circumstances call for an increase or a decrease in labor inputs) and the magnitude of the required change. Once again, I cannot provide an exact figure, although almost certainly a period of months would be required to effect a change.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-ST1-1. Please refer to page 3, lines 6 and 7 of your supplemental testimony.

a. Please confirm that the specification of the equation that you estimated for your supplemental testimony in response to NOI No. 4 is given by:

$$\begin{aligned} \ln HRS = & [\delta_1 + \delta_2 L] \ln TPH + [\delta_3 + \delta_4 L] (\ln TPH)^2 \\ & + \delta_5 \ln MANR + \delta_6 (\ln MANR)^2 + \delta_7 t_1 + \delta_8 t_1^2 \\ & + \delta_9 t_2 + \delta_{10} t_2^2 + \delta_{11} [\ln TPH * \ln MANR] \\ & + \delta_{12} [\ln TPH * t_1] + \delta_{13} [\ln TPH * t_2] \\ & + \delta_{14} [\ln MANR * t_1] + \delta_{15} [\ln MANR * t_2] \\ & + \sum_{i=1}^{12} \lambda_i D_i + \varepsilon \end{aligned}$$

Where the variables are defined as in USPS-T-14, the D_j are seasonal dummies, and the δ and λ are parameters to be estimated.

If you do not confirm, please provide the exact functional form of the equation that you estimated for that supplemental testimony.

b. Please confirm that the "volume variability" or "elasticity" associated with this specification would be found by calculating the derivative of $\ln HRS$ with respect to $\ln TPH$ and lagged $\ln TPH$. If you do not confirm, please explain in full.

c. Please confirm that this derivative is given by:

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

$$\begin{aligned} \frac{\partial \ln HRS}{\partial \ln TPH} &= \delta_1 + \delta_2 + 2 * [\delta_3 + \delta_4] (\ln TPH) \\ &+ \delta_{11} [\ln MANR] \\ &+ \delta_{12} [t_1] + \delta_{13} [t_2] \end{aligned}$$

If you do not confirm, please provide what you think to be the correct derivative.

d. Please confirm that when the data are "mean centered" that the above derivative reduces to:

$$\frac{\partial \ln HRS}{\partial \ln TPH} = \delta_1 + \delta_2$$

If you do not confirm, please explain why you have used this formula to calculate volume variabilities in both your initial and supplemental testimonies.

e. Please confirm that this mean centered form implicitly assumes evaluation of the regression equation at the global mean. That is, please confirm that the complete form of the derivative of ln HRS with respect to log TPH and lagged log TPH, when the data are mean centered, is given by:

$$\begin{aligned} \frac{\partial \ln HRS}{\partial \ln TPH} &= \delta_1 + \delta_2 + 2 * [\delta_3 + \delta_4] (\ln TPH - \ln \overline{TPH}) \\ &+ \delta_{11} [\ln MANR - \ln \overline{MANR}] \\ &+ \delta_{12} [t_1 - \overline{t_1}] + \delta_{13} [t_2 - \overline{t_2}] \end{aligned}$$

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

where the "bar" notation signifies the global or overall mean from the data set on which the regression was estimated. If you do not confirm, please provide what you think is the correct complete derivative in this case.

f. Please confirm that one obtains the simplified derivative (that is presented in part d.) by evaluating the complete form of the derivative (that is presented in part e) at the global mean values from the data set on which the regression was estimated:

$$\begin{aligned} \frac{\partial \ln HRS}{\partial \ln TPH} = & \delta_1 + \delta_2 + 2 * [\delta_3 + \delta_4] (\ln TPH - \ln \overline{TPH}) \\ & + \delta_{11} [\ln \overline{MANR} - \ln \overline{MANR}] \\ & + \delta_{12} [\overline{t_1} - \overline{t_1}] + \delta_{13} [\overline{t_2} - \overline{t_2}]. \end{aligned}$$

If you do not confirm, please provide the mathematics of how the simplified derivative presented in part d is derived from the complete derivative presented in part e.

g. Please confirm that if the complete derivative is evaluated at any point other than the global mean of the data on which the regression equation was estimated, then the simplified form of the derivative (as given in part d.) is not applicable. If you do not confirm please explain how the simplified form of the derivative (as given in part d.) is applicable when evaluating the derivative at points other than the global mean of the data on which the regression equation was estimated.

Response to USPS/UPS-ST1-1.

- a. Confirmed.
- b. Confirmed.
- c. Confirmed.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

d. The derivative reduces to that value when it is evaluated at the set of means on which the data are centered.

e. The formula that is shown is correct, regardless of whether the "bar" notation signifies a global sample mean, a subsample mean, or some other mean, as long as one is attempting to evaluate the derivative at the set of means on which the data are centered.

f. One obtains the simplified form of the derivative by evaluating the complete form of the derivative at the set of means on which the data have been centered. There is no requirement that this set of means be derived from the data set on which the regressions have been estimated.

g. Not confirmed. Because of the nonlinearity of the model, the value one obtains for a derivative will depend upon the point at which the derivative is evaluated. The simplified formula evaluates the derivative at the point around which the data have been centered, and provides a correct value for the derivative at that point. If the data had been centered around an arbitrary point in the space spanned by the data, the simplified formula would provide a correct value for the derivative at that arbitrary point.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-ST1-2. Please refer to page 3, line 6 of your testimony.

Please confirm that each of the site-specific regressions estimated for your supplemental testimony were estimated on only the data for that site. If you do not confirm, please explain how the regressions could be site-specific.

Response to USPS/UPS-ST1-2. Confirmed.

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

USPS/UPS-ST1-3. Please refer to page 2, line 18 of your supplemental testimony.

a. Please confirm that the "mean centering" you performed in estimating the equations for your supplemental testimony was around the global means for the entire data set for each activity, across all sites, and not on a site-specific basis. If you do not confirm, please identify where in your workpapers the site-specific mean centering is performed.

b. Please confirm that the complete form of the derivative of $\ln HRS$ with respect to $\log TPH$ and lagged $\log TPH$ when site specific equations are run on site-specific data that are globally mean centered is given by:

$$\begin{aligned} \frac{\partial \ln HRS_i}{\partial \ln TPH_i} = & \delta_1 + \delta_2 + 2 * [\delta_3 + \delta_4] (\ln TPH_i - \ln \overline{TPH}) \\ & + \delta_{11} [\ln MANR_i - \ln \overline{MANR}] \\ & + \delta_{12} (t_{1i} - \overline{t_1}) + \delta_{13} (t_{2i} - \overline{t_2}). \end{aligned}$$

where the "bar" notation signifies the global mean from all of the data for an activity (across all sites) and the "i" subscript refers only to the data from site i (the data on which the regression was estimated). If you do not confirm, please provide what you think is the correct complete derivative in this case.

c. Please confirm that the complete derivative, in this case, reduces to the simplified derivative given by $\delta_1 + \delta_2$ only if the site-specific mean just happens to equal the global mean. If you do not confirm, please provide the mathematics of how

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
THE UNITED STATES POSTAL SERVICE**

the complete derivative reduces to the simplified derivative when the site-specific mean does not equal the global mean.

d. Please confirm that the site-specific means for the sites included in your estimated equation do not equal the global or overall mean. If you do not confirm, please provide a listing of all sites for which the site-specific means equal the global means for the variables in the regression equations.

Response to USPS/UPS-T1-3.

- a. Confirmed.
- b. Confirmed.
- c. Not confirmed. The complete derivative reduces to the simplified form at the point defined by the global sample mean. Note that at that point the expressions in parentheses on the first line of the equation and in square brackets on subsequent lines reduce to zero.
- d. Confirmed generally, although I have not checked to determine that the unlikely case of having the site specific means exactly equal to the global means never arose within the data.

02/26/98 THU 19:07 FAX 202 296 0343 MPA DC

Mr. James R. Cregan

From: SIR

2-26-98 5:23pm p. 3 of 11 003

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
MAGAZINE PUBLISHERS OF AMERICA**

MPA/UPS-ST1-1. Please refer to your supplemental testimony at page 2, line 20, through page 3, line 5.

a. Please confirm that in constructing the F statistic to test the fixed-effects model with common slope parameters against the unrestricted model with varying slope parameters, you chose to use the autocorrelation coefficient from the fixed-effects model to perform the serial correlation correction in your unrestricted model. If you do not confirm, please explain.

b. If part a is confirmed, please explain why you believe that, in an unrestricted model in which every other parameter is allowed to vary freely from one facility to another, the autocorrelation coefficient should be restricted to being equal across all facilities.

Response to MPA/UPS-ST1-1.

- a. Confirmed.
- b. In allowing the slope coefficients of the model to differ by facility I was responding to the request of the Commission as set forth in Notice of Inquiry No.4 on Mail Processing Variability. That request was silent on the issue of whether or not the autocorrelation coefficient should be restricted, or should also be allowed to vary by facility.

In my Supplemental Testimony I point out that alternative treatments of the autocorrelation coefficient are possible. Specifically, in footnote 1 on page 3 I state:

Using the value for the serial correlation coefficient estimated from the residuals of Bradley's fixed effects model is but one of a number of possible approaches to handling the problem of serial correlation. One could also maintain the assumption that there is a single correlation coefficient that is common to all facilities, but then estimate the value of that coefficient from the residuals of the model that allows slope coefficients to vary by facility. One could also allow the serial correlation

02/26/98 THU 19:07 FAX 202 296 0343

MPA DC

: Mr. James R. Cregan

From: SIR

2-26-98 5:24pm p. 4 of 11 004

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
MAGAZINE PUBLISHERS OF AMERICA**

coefficient to vary by facility. In the latter case one would have to take the separate serial correlation coefficients into account in testing whether or not the model coefficients differ significantly by facility.

I concede the validity of these alternative approaches. They constitute slightly different alternative hypotheses, and hence also slightly different statistical tests.

If a decision is made to allow autocorrelation coefficients to vary by facility one needs to account appropriately for the fact that a large number of new parameters have been added to the model. The resulting unrestricted model is no longer linear in parameters, and so a simple F test is no longer appropriate. If one were to estimate the parameters (both slope coefficients and autocorrelation coefficients) of the individual facility-specific equations using maximum likelihood techniques one could construct a likelihood-ratio test of the null hypothesis that the facilities share a common set of slope and autocorrelation coefficients against the alternative that those coefficients differ by facility.

The specific approach I adopted in my analysis was based upon two considerations. The Commission specifically mentioned an F test in the Notice of Inquiry, which seemed to rule out the different approaches that varying autocorrelation coefficients would require. I also sought a test that included Bradley's exact model as the null hypothesis. Using Bradley's autocorrelation coefficient produced just such a test.

02/26/98 THU 19:07 FAX 202 296 0343

MPA DC

: Mr. James R. Cregan

From: SIR

2-26-98 5:24pm

p. 5 of 11 005

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
MAGAZINE PUBLISHERS OF AMERICA**

MPA/UPS-ST1-2. Please refer to your supplemental testimony at page 2, lines 16-18, and confirm that you estimated the unrestricted model using data that had been deviated from the overall sample means. If you do not confirm, please explain.

Response to MPA/UPS-ST1-2. Confirmed.

02/26/98 THU 19:07 FAX 202 296 0343

MPA DC

: Mr. James R. Cregan

From: SIR

2-26-98 5:25pm p. 6 of 11 006

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
MAGAZINE PUBLISHERS OF AMERICA**

MPA/UPS-ST1-3. Please refer to your supplemental testimony at page 6, lines 1-6, where you stated that "[t]he failure of Bradley's fixed effects model to pass the F test for any of the MODS direct activities does not by itself prove that volume variability differs across facilities. It is possible that the differences in slope coefficients detected by the F test occur in other parts of Bradley's specification. The only way to determine whether or not this is...the case is to inspect the individual facility-specific volume variability estimates."

a. Please confirm (i) that in order to test the restriction implied in the passage quoted above - namely the null hypothesis that volume variability is constant across sites while the other slope parameters are not against the alternative that volume variability is not constant across sites - it would be necessary to take the variances and covariances among the parameter estimates at the individual sites into account; and (ii) that while the F test of this hypothesis would take these variances and covariances into account, visual inspection of the numbers presented in your Table 2 does not. If you do not confirm, please explain.

b. Please confirm that you did not formulate the restriction discussed in part a. (namely that, for each MODS direct cost pool, volume variability is stable across facilities while the remaining slopes differ by site) as a hypothesis and test it statistically using an F test or similar procedure. If you do not confirm, please explain.

c. If part b. is confirmed, please explain how one should take the variances and covariances of the separate parameter estimates into account when inspecting the numbers you present in Table 2 at page 7 of your supplemental testimony.

02/26/98 THU 19:08 FAX 202 296 0343 MPA DC

: Mr. James R. Cregan

From: SIR

2-26-98 5:25pm p. 7 of 11 007

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
MAGAZINE PUBLISHERS OF AMERICA**

Response to MPA/UPS-ST1-3.

a. An appropriately designed F test could determine whether volume variability is constant across sites even though other slope coefficients differ. Volume variability in Bradley's model is the sum of two coefficients – the coefficient on the log of current period TPH and the coefficient on the log of TPH in the prior accounting period. One could test the significance of the restriction that each of these two coefficients is the same across all facilities. Alternatively, one could test the significance of the restriction that the sum of these coefficients is the same for all facilities even though the contributions to that sum made by the coefficients of current period TPH and lagged TPH differ by facility. The F statistics one would calculate for either of these two tests would reflect the residual sums of squares and degrees of freedom of the restricted and unrestricted models, and would not directly take into account "variances and covariances among the parameter estimates at the individual sites." I believe, therefore, that the correct answer is "not confirmed," although I find the wording of the question confusing.

I confirm that visual inspection of the numbers presented in Table 2 does not take into account the "variances and covariances among the parameter estimates at the individual sites."

b. Confirmed.

c. As I stated above in my answer to (a), this can be done in two ways. The first would involve estimation of separate equations for each facility subject to the cross-equation constraint that the coefficients for the log of current TPH and the log of lagged TPH are the same for all facilities. One would then construct the following F statistic:

$$F_1 = ((SSR_1 - SSR_U)/(2(N-1)))/(SSR_U/(M - N(K+1)))$$

02/26/98 THU 19:08 FAX 202 296 0343

MPA DC

To: Mr. James R. Cregan

From: SIR

2-26-98 5:26pm

p. 8 of 11 008

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEEDS TO INTERROGATORY OF
MAGAZINE PUBLISHERS OF AMERICA**

Where SSR_1 is the sum of squared residuals for the set of equations described above, SSR_U is the sum of squared residuals obtained by estimating separate equations by facility without the cross-equation constraint, N is the number of sites, M is the overall sample size, and K is the number of non-intercept parameters in Bradley's model. Note that adjustments to the denominator degrees of freedom may be required if data limitations necessitate the dropping of variables from some of the site specific regressions.

The second would involve estimation of separate equations for each facility subject to the cross-equation constraint that the sum of the coefficients for the log of current TPH and the log of lagged TPH is the same for all facilities. One would then construct the following F statistic:

$$F_2 = ((SSR_2 - SSR_U)/(N-1))/(SSR_U/(M - N(K+1)))$$

Where SSR_2 is the sum of squared residuals for the set of equations described above, SSR_U is the sum of squared residuals obtained by estimating separate equations by facility without the cross-equation constraint, N is the number of sites, M is the overall sample size, and K is the number of non-intercept parameters in Bradley's model. Again, adjustments to the denominator degrees of freedom may be required for the reasons set forth above.

02/26/98 THU 19:09 FAX 202 296 0343 MPA_DC

fr. James R. Cregan

From: SIR

2-26-98 5:27pm p. 9 of 11 009

**ANSWER OF UNITED PARCEL SERVICE
WITNESS NEELS TO INTERROGATORY OF
MAGAZINE PUBLISHERS OF AMERICA**

MPA/UPS-ST1-4. In addition to testing the fixed-effects model against the unrestricted model in each of the direct MODS cost pools, did you also perform a test of the pooled model against the unrestricted model? If you did perform such a test, please supply the SAS program(s), SAS log file(s), and SAS listing file(s) used to do so, as well as a summary of your results.

Response to MPA/UPS-ST1-4. No.

1 CHAIRMAN GLEIMAN: Is there any other written
2 cross-examination that anyone has?

3 [No response.]

4 CHAIRMAN GLEIMAN: If not, that brings us to oral
5 cross. The Postal Service is the only party that requested
6 oral cross-examination.

7 Does any other party wish to cross-examine this
8 witness?

9 [No response.]

10 CHAIRMAN GLEIMAN: If not, Ms. Duchek, when you
11 are ready.

12 MS. DUCHEK: Yes, I am. Thank you, Mr. Chairman.

13 CROSS-EXAMINATION

14 BY MS. DUCHEK:

15 Q Good morning, Dr. Neels.

16 A Good morning.

17 Q For clarity of the record, I will break my
18 cross-examination into two parts and we will talk first
19 about your direct testimony and then I will let you know at
20 what point I am asking about your supplemental testimony.

21 A Very well.

22 Q So we are starting with your direct testimony, Dr.
23 Neels, UPS-T-1, and would you please refer to your responses
24 to Postal Service Interrogatories T-1-17 and 18, please.

25 A Okay, I have them.

1 Q In those responses you listed econometric studies
2 that you either performed or directed but did not perform.

3 Have you ever published any econometric studies?

4 A I have.

5 Q Could you provide us -- I understand you may not
6 be able to do it off the top of your head, although maybe
7 you can, could you provide us complete citations to those
8 articles, article name, journal name, date, and Mr.
9 McKeever, if he is not able to do that today, if you could
10 get that to us in writing, that would be fine.

11 A I can't provide exact citations off the top of my
12 head, but I would be happy to provide the information.

13 Q That's fine.

14 MR. MCKEEVER: We would be prepared to do that,
15 Mr. Chairman.

16 CHAIRMAN GLEIMAN: Thank you.

17 MS. DUCHEK: Mr. McKeever and Dr. Neels, if I
18 could further request that given the short timeframe for the
19 filing of rebuttal testimony that we get those as early as
20 possible next week?

21 MR. MCKEEVER: We will endeavor to supply them as
22 promptly as we can.

23 MS. DUCHEK: Thank you.

24 BY MS. DUCHEK:

25 Q Dr. Neels, would you now look at your response to

1 Postal Service Interrogatory Number 10, please.

2 A I have it.

3 Q If you'll give me a minute -- I don't yet.

4 You indicate there that the calculations for the
5 value 81, which is listed as capital T in your Work Paper 3
6 are contained in United Parcel Service Library Reference
7 Number 2.

8 Would you please indicate exactly where in UPS
9 LR-2 the value 81 is calculated?

10 A I don't have the Library Reference with me at the
11 moment.

12 I am afraid I might have to get back to you on
13 that. I would be happy to do so.

14 MR. McKEEVER: We will be happy, Mr. Chairman, to
15 supply that as promptly as possible as well.

16 THE WITNESS: My apologies for that.

17 MS. DUCHEK: Fine, thank you.

18 BY MS. DUCHEK:

19 Q Dr. Neels, will you now please turn to page 5,
20 lines 10 to 11, of your testimony?

21 A Okay, I have it.

22 Q Specifically I am looking at the statement where
23 you say "simple, straightforward, unadorned plots of the raw
24 data tend to confirm this view."

25 By raw data, are you referring to the MODS data?

1 A I was.

2 Q So you are referring to plots of MODS hours on
3 MODS TPH or plots of the log of MODS hours on the log of
4 MODS TPH, correct?

5 A Correct.

6 Q As a general matter, Dr. Neels, is it not correct
7 that you can determine the number of observations in data by
8 adding the degrees of freedom and the number of parameters
9 to be estimated?

10 A In general it is true. Different econometric
11 packages sometimes treat the intercept term in the
12 regression differently so one needs to be aware of the
13 conventions that are being followed by the specific package.

14 Q Well, specifically, if you could look at page 2 of
15 your Work Paper 1, and if you don't have that, I can give
16 that to you.

17 In fact, it may be easier, because I had a little
18 trouble figuring out exactly what was page 2, if I handed
19 you the page I am talking about.

20 A Thank you.

21 Q Specifically, Dr. Neels, I am looking at the
22 middle of the hard copy page I handed you but you'll^{see} a
23 number two off to the side. The title is "MODS Direct BCS
24 Cross-Section Regression Full Sample."

25 A I see that.

1 Q And there is a column, is there not, listed as DF
2 under the Output for the MODS Direct BCS Regression?

3 A That's correct.

4 Q And can you confirm that there are five parameters
5 estimated in this model?

6 A That's correct.

7 Q That would be the row under the word Source that
8 says Model?

9 A That's correct.

10 Q And then can you further confirm that the degrees
11 of freedom for this regression is 375 -- that is the row
12 listed as Error?

13 A That is the error degrees of freedom, that's
14 correct.

15 Q Okay. So this means that 380 observations are
16 used to estimate this regression, correct?

17 A That's correct.

18 MS. DUCHEK: Mr. Chairman, I really have no strong
19 feeling one way or the other if counsel feels the record
20 would be enhanced by having this just made clearer if it
21 were put in as a cross-examination exhibit. I am prepared
22 to do that.

23 MR. McKEEVER: I don't feel any need to put it in,
24 Mr. Chairman.

25 I think the questions and the answers were clear.

1 MS. DUCHEK: That's fine. Okay.

2 BY MS. DUCHEK:

3 Q Dr. Neels, I want to turn now to your supplemental
4 testimony.

5 Specifically, Dr. Neels, I would like you to look
6 at your response to Postal Service Interrogatory ST-1-1,
7 subpart (c).

8 A I have that.

9 Q Now in that interrogatory subpart you were asked
10 to confirm that the variability formula based upon Dr.
11 Bradley's translog cost equation takes on a specific
12 functional form.

13 I don't dare try to read what that form is, but
14 would you agree that the variability depends on the
15 parameters of the cost equation and the TPH volume, the
16 value of the manual ratio and the time trend variables?

17 A I agree. That's correct.

18 Q So if these latter variables, that is the TPH
19 volume, the value of the manual ratio, and the time trend
20 variables, differ by observation, site, or whatever, the
21 variabilities can differ even if we were to find that the
22 cost equation parameters were the same for every site, isn't
23 that correct?

24 A That is correct.

25 Q Now isn't there only one way to get the

1 variabilities to be the same with certainty? That is, if
2 the cost equation parameters are the same, and the
3 parameters on higher order and cross terms of TPH are zero?

4 A Let me ask for just a clarification.

5 When you say "be the same" are you saying these
6 are the conditions that must be met in order for variability
7 to be the same across all facilities, all time periods and
8 regardless of the values of TPH and the manual ratio and the
9 time trends?

10 Q Yes.

11 A And could I ask you to repeat the question just to
12 make sure that I can answer it correctly?

13 Q Yes. I asked isn't there only one way to get the
14 variabilities to be the same with certainty. That is if the
15 cost equation parameters are the same and the parameters on
16 higher order and cross terms of TPH are zero.

17 A I believe that is correct.

18 Q So isn't it true that the F test for ^{equality}~~quality~~ of
19 the cost equation parameters across sites is not equivalent
20 to a test against the hypothesis that all variabilities are
21 equal?

22 A The F test that was specified by the Commission in
23 the notice of inquiry was not the same thing as a test that
24 variabilities are equal across facilities, so that is
25 correct.

1 Q Would you agree that if we reject the hypothesis
2 of equal parameters across sites that it would be unlikely
3 that the variabilities would all be equal?

4 A If we reject the hypothesis of equality of slope
5 coefficients across sites I think it would be very unlikely
6 that the variabilities would be equal.

7 Q Would you turn now to your response to Postal
8 Service Interrogatory ST-1-3, subpart (c), please.

9 A Okay. I have it.

10 Q Specifically, Dr. Neels, and I know they are on
11 separate pages so take a minute if you need it to do it, I
12 want you to focus on the first sentence of the question and
13 then the second sentence of your response.

14 A I have it.

15 Q Thank you. If I look at the first sentence of the
16 question and the second sentence of your response, the only
17 real difference that I see is that the Postal Service refers
18 to the global mean and you refer to the global sample mean.

19 Is that the only thing that kept you from making
20 this response a confirmation?

21 A My interpretation was that in asking the question
22 in (c) the references to the site specific mean and this is
23 in the context -- well, my interpretation given the flow of
24 the questions here was that this was a question asking about
25 the conditions under which the full derivative reduces to

1 the simplified form, but with the presumption that the mean
2 centering is always being based upon the sample on which the
3 regression was run, and I interpreted that to mean the
4 specific sample associated with one facilities, and I was
5 drawing a distinction between mean centering the data on the
6 sample for a specific facility, which would necessarily mean
7 that each facility would be centered at a different point,
8 and the alternative procedure of centering the data across
9 all facilities on the global mean, and with that distinction
10 in mind -- it was with that distinction in mind, I should
11 say, that I answered that question as not confirmed.

12 Q Would you look now at your response to Postal
13 Service ST-1-1, subpart (g), please.

14 A Okay, I have that.

15 Q Specifically I am looking at your last sentence in
16 subpart (g) where you state, "If the data had been centered
17 around an arbitrary point in the space spanned by the data,
18 the simplified formula would provide a correct value for the
19 derivative at that arbitrary point."

20 Do you have that sentence?

21 A I have that.

22 Q If that is the case, then doesn't it follow that
23 if the data are centered around an arbitrary point not in
24 the space spanned by the data, then the simplified formula
25 would not provide a correct value for the derivative at that

1 arbitrary point?

2 A It would -- in the simple mathematical sense it
3 would as long as the site specific regressions were run with
4 a constant term, that as long as the constant term is
5 present then mean centering the data with respect to an
6 arbitrary point would not affect the values of the estimated
7 slope coefficients.

8 Now given that condition, that precondition, I
9 think it is true in a simple mathematical sense that if you
10 were to evaluate the derivative at a point outside the
11 sample space you would get the mathematically correct
12 answer, but at this point you would have extrapolated the
13 results far beyond the data, which is something that is
14 usually unreliable for a function like the translog, so I
15 think you would get a correct answer, but it might be a
16 nonsensical answer.

17 In that sense, it was for that reason that I
18 qualified my answer to limit it to points within the sample
19 space.

20 Q Dr. Neels, did you check whether the global sample
21 means falls in the range of data for each site?

22 A I did not.

23 Q Doesn't that mean then that we simply don't know
24 for how many sites the variabilities were calculated at
25 volume levels that those sites never experienced?

1 A That's correct, though I would expect that if the
2 derivatives were evaluated at the global mean it would be at
3 a volume level that should be broadly applicable across a
4 large number of sites.

5 There are undoubtedly individual sites that have
6 peculiar characteristics where the condition that you have
7 stated might have been present.

8 Q Well, let's take a really very simple example here
9 ~~in~~ ^{and} acknowledging that it is a hypothetical.

10 Let's assume there is a site that since 1988 has
11 handled between 10,000 and 20,000 pieces per accounting
12 period and let's say for this site the global sample mean
13 is -- I'm sorry, for that operation the global sample mean
14 falls at 500,000 pieces per AP, so in layperson's terms you
15 would have calculated a variability based on the operation
16 handling 500,000 pieces per AP when in reality it never
17 handled more than 20,000 pieces per AP, correct?

18 A That would be correct in that hypothetical case.

19 Q Wouldn't that mean that for those sites where you
20 calculated a variability at volume levels that the site
21 never experienced you could get a pretty extreme value for
22 the variability?

23 MR. McKEEVER: Mr. Chairman, may I just ask for a
24 clarification -- only because counsel used the term "you" --
25 I think counsel intended, and this what I seek to clarify,

1 you in a general sense, not that Dr. Neels did such a
2 calculation.

3 MS. DUCHEK: That's fine, although Dr. Neels has
4 stated he doesn't know for how many sites the variabilities
5 were calculated outside, where the global mean sample mean
6 fell outside the range of data for the site.

7 BY MS. DUCHEK:

8 Q Do you want me to restate the question, Dr. Neels?

9 A That might be helpful at this point.

10 Q Okay, and by "you" I am referring to a generic
11 you -- wouldn't that mean for those sites where you
12 calculated variability at volume levels that the site never
13 experienced you could get a pretty extreme value for the
14 variability?

15 A If the site were very unusual relative to the
16 global mean, one might get peculiar results, but I think in
17 a setting like this, you know, sometimes there are no good
18 simple answers.

19 If you were to calculate variabilities at
20 individual sample means, then you would have variabilities
21 that differ in that they refer to very different levels of
22 activity.

23 In trying to pick the global mean I was trying to
24 establish some standardization across facilities and I
25 achieved some commonalities I'm sure for many facilities

1 that wouldn't be yielded by a sample mean by sample mean
2 approach, but it does have other problems as are potential
3 peculiarities, as you pointed out.

4 So I think it is possible. Again as I said I
5 suspect that if you are looking at the global mean you are
6 generally in the middle of the relevant area with respect to
7 a large number of facilities, so I think that these -- they
8 might account for some of the outlier values but not the
9 spread in variabilities across many facilities.

10 Q Well, if you -- you could get -- you have
11 acknowledged that you could get a pretty extreme value for
12 the variability. You could get a negative variability or a
13 variability well above 100 percent for example.

14 A It is possible to do that, and it is really for
15 that reason that in my supplemental testimony I didn't focus
16 just on the extreme values but tried to show something about
17 the range of outcomes one achieves.

18 For example, in my Table 2 I look not just as the
19 very extreme values but I show the first, second, third, and
20 fourth quartile, so one can get a sense of what the whole
21 distribution looks like, and I think there is quite a bit of
22 variability even within the middle quartiles, which I would
23 not expect to be heavily influenced by the point that you
24 are raising here.

25 Q Isn't it the case that this issue, if you will,

1 would be worse for the largest and smallest facilities?

2 A The largest and smallest facilities would be the
3 ones most likely to have sort of scales of operation that
4 were very far from the global mean, so in that sense you
5 would -- it is probably correct to say you have the greatest
6 likelihood of extrapolating the results far beyond the data
7 for that specific site.

8 Q Dr. Neels, have you reviewed the responses of Dr.
9 Bradley and Mr. Higgins to Notice of Inquiry Number 4?

10 A I have.

11 Q And isn't it correct that neither followed your
12 procedure of centering at the global sample mean for the
13 entire dataset for each activity across all sites?

14 A That is correct.

15 Q Okay. Can you identify any econometric advantage
16 for the procedure you followed?

17 A It has the advantage that it yields Dr. Bradley's
18 exact model as the null hypothesis for the test, and I
19 sought to devise a testing procedure that took -- started
20 from Dr. Bradley's model and disaggregated from there.

21 I think if you begin doing transforming data into
22 deviations from sample means you get somewhat afield from
23 the original model and you are starting to look at the
24 individual models in a different way.

25 I tried to adhere very closely to the spirit of

1 Dr. Bradley's initial work because that was my
2 interpretation of the Commission's request.

3 Q Well, wouldn't the advantage that you just posited
4 be offset by the econometric disadvantage of high prediction
5 error variance?

6 A Well, not -- not in connection with the
7 Commission's initial request, because their focus was really
8 on the statistical test of commonality across -- a
9 commonality of coefficients across facilities. And I think
10 my results, those of Dr. Bradley, and those of Mr. Higgins,
11 all, I think, came to the same conclusion that if one tests
12 this, one rejects the hypothesis that there is a common set
13 of slope coefficients.

14 The interpretation of the variabilities was a
15 second order issue that I thought was worth commenting upon,
16 but it wasn't, as I saw it, the initial focus of the
17 Commission's request.

18 Q If it was a first order of priority, would you
19 recommend your procedure or Dr. Bradley's?

20 A If the first order was to find out whether
21 variabilities were -- took separate values, as opposed to
22 other coefficients, I think one might then be led to some
23 sort of a statistical test of the two coefficients that go
24 -- you know, the coefficients on total piece handlings and
25 lagged piece handlings, because those contribute very

1 importantly to the variability estimate.

2 I think, beyond that, if one wanted to -- if your
3 focus was to look at the implications for variabilities of
4 models in which the -- all the slope coefficients varied
5 from facility to facility, I suspect that one would get
6 equivalent -- or one would get -- let me think a second. I
7 guess I would recommend evaluating the derivatives then at
8 the means for the facilities. One could do that with the
9 full derivative, one doesn't really need to go back to the
10 mean centered data to do that. So it would just mean a
11 somewhat more complicated calculation. That seems
12 reasonable.

13 Though, as I said, I think there is also some
14 justification in trying to see what these site by site
15 models imply at a common level of activity, just to
16 eliminate from the comparison the fact that the facilities
17 operate at quite different scales. So it's -- Professor
18 Bradley's approach to this, I think is defensible, but there
19 are other approaches one might use to address somewhat
20 different questions.

21 THE REPORTER: Total piece handlings and lagged?

22 THE WITNESS: Lagged piece handlings.

23 MR. VOLNER: L-A-G-G-E-D?

24 THE WITNESS: L-A-G-G-E-D, yes.

25 BY MS. DUCHEK:

1 Q If you will give me a minute, I think -- no, one
2 last question, Dr. Neels, and, actually, I guess this
3 relates to both your initial and your supplemental
4 testimony. Did you run any other any other models on mail
5 processing variabilities, other than those that you have
6 presented in both pieces of testimony?

7 A I think I stated, in my response to one of the
8 Interrogatories, that I had investigated an alternative
9 formulation that included a lagged value of the dependent
10 variable, and I think those results have been provided.

11 Q But other -- and I believe that was just on your
12 direct testimony. Other than that, nothing else?

13 A Nothing else that was in final form. There was a
14 certain amount of testing of programs in the very beginning
15 when we were trying to make sure we understood the
16 functioning of Dr. Bradley's programs. But I think those
17 results weren't really reliable.

18 Q Specifically, with respect to the variabilities
19 you presented in your supplemental testimony, did you
20 attempt to calculate those in any other way?

21 A No, I didn't.

22 MS. DUCHEK: I have no further questions.

23 THE WITNESS: Thank you.

24 CHAIRMAN GLEIMAN: Is there any follow-up?

25 [No response.]

Nested Sequence Of Models

Most General Model
 Allows intercept and slope to vary over time and facilities

$$Y_{it} = \alpha_{it} + X_{it}\beta_{it} + \varepsilon_{it}$$

where (t = 1, ...T indexes Accounting Periods)
 (i = 1, ...N indexes Facilities)
 (the vector X_u contains all of the regressors in witness Bradley's model on page 36 of USPS-T-14).

Drop t index for α and β .
 $Y_{it} = \alpha_i + X_{it}\beta_i + \varepsilon_{it}$

Rejected

Fixed-Effects Among Facilities Model.
 Restrict to common beta; allow alpha to be unique value for each facility.
 $Y_{it} = \alpha_i + X_{it}\beta + \varepsilon_{it}$

Rejected

Random-Effects Among Facilities Model.
 Restrict to common beta; allow alpha to vary randomly over facilities.
 $Y_{it} = \alpha_i + X_{it}\beta + \varepsilon_{it}$

Rejected

The Pooled Model
 Restrict to a common alpha and beta:
 $Y_{it} = \alpha + X_{it}\beta + \varepsilon_{it}$

Drop i index for α and β .
 $Y_{it} = \alpha_t + X_{it}\beta_t + \varepsilon_{it}$

Not Tested

Fixed Effects Among Accounting Periods Model:
 Restrict to common beta; allow alpha to vary over time periods.
 A cross-sectional model.
 $Y_{it} = \alpha_t + X_{it}\beta + \varepsilon_{it}$

Not Tested

Random-Effects Among Accounting Periods Model.
 Restrict to common beta; allow alpha to vary randomly over accounting periods.
 $Y_{it} = \alpha_t + X_{it}\beta + \varepsilon_{it}$

Not Tested

1 CHAIRMAN GLEIMAN: Now, this diagram attempts to
2 describe the nesting sequence of models discussed on the
3 record by Witness Bradley and others, and the hypothesis
4 tests that were applied to determine whether restrictions
5 imposed were justified in a statistical sense.

6 In your opinion, does this diagram summarize the
7 nesting relationships of those models and indicate which
8 restrictions were tested and rejected by the data?

9 THE WITNESS: As I understand, I believe it does.

10 CHAIRMAN GLEIMAN: Is it accurate to say that
11 Witness Bradley began his search for an estimation method by
12 testing and rejecting the most restrictive model that lacks
13 time-indexed coefficients, that is, the pooled model,
14 against the next most restrictive model that lacks
15 time-indexed coefficients, that is, the random effects
16 model?

17 THE WITNESS: I think -- as shown in the diagram,
18 there are two random effects model, one with effects by
19 site, one with effects by time period. And I think, as the
20 diagram shows, you could generalize the pooled model in
21 either direction. He chose one of the two, and along that
22 line of development, he did investigate the -- sort of the
23 next unrestricted model in the sequence.

24 CHAIRMAN GLEIMAN: Did he then test and reject the
25 random effects model against the next most restrictive model

1 that lacks time-indexed coefficients, the fixed index, the
2 fixed effects model?

3 THE WITNESS: I hesitate -- what I recall of Dr.
4 Bradley's, and I may have misspoken before, but my
5 recollection of Dr. Bradley's testimony was that he
6 discussed the random effects and the fixed effects as
7 alternatives and I recall he had somewhat of an a priori
8 argument, not a statistical argument, in favor of the fixed
9 effects model. I don't recall what his test was between
10 those two, whether it was statistical or whether it was
11 theoretical, if you will.

12 CHAIRMAN GLEIMAN: But he did --

13 THE WITNESS: But he did consider it, and move on
14 to the fixed effects model, subject to that qualification.

15 CHAIRMAN GLEIMAN: Okay.

16 THE WITNESS: I guess -- the only reason I am
17 trying to be careful is in the rejection there, I am trying
18 to distinguish between theoretical rejection and statistical
19 rejection.

20 CHAIRMAN GLEIMAN: I understand.

21 THE WITNESS: Okay.

22 CHAIRMAN GLEIMAN: Was the fixed effects model
23 that lacks time-indexed coefficients tested and rejected in
24 response to Notice of Inquiry No. 4?

25 THE WITNESS: It was.

1 CHAIRMAN GLEIMAN: Was the next most restrictive
2 model that lacks time-indexed coefficients, the model that
3 allows both the slope and the intercept to vary by facility,
4 tested to see if it is consistent with the data?

5 THE WITNESS: It was tested relative to the fixed
6 effects model and I think by Higgins and Bradley against the
7 pooled model. I don't believe it was tested against the
8 more general model where both the slope coefficients and the
9 intercept coefficients vary both across facilities and
10 across time. That would be the model shown in the topmost
11 box.

12 CHAIRMAN GLEIMAN: Right. Okay. Does this mean
13 that none of the models that lacked time-indexed
14 coefficients has passed a statistical test of consistency
15 with the data?

16 THE WITNESS: This -- I think of the models that
17 are on the table, the one that has not yet been rejected is
18 the one which has both slope coefficients and intercept
19 coefficients varying across facilities. That has not been
20 rejected in favor of a more general model at this point, on
21 purely statistical grounds.

22 I think I have concerns about the general approach
23 here which are common to all of these models, and they are
24 not concerns directly of a sort one can subject to an F
25 test, but I think I have concerns about all of those models.

1 But I think in a purely statistical ground, the work that
2 was produced in response to the Notice of Inquiry is, in
3 some sense, the last model, set of models left standing.

4 CHAIRMAN GLEIMAN: Now, is it standard econometric
5 practice to search for an estimation method by sequentially
6 testing more restrictive models against less restrictive
7 models, in other words, to go from the specific to the
8 general?

9 THE WITNESS: This is an area of sort of what is
10 considered to be good practice. I think -- my sense is that
11 one, generally, should begin with the more general and ask
12 whether you can move to the more restrictive, because if you
13 start with the more general, you are less likely to make a
14 wrong turn. There are some technical reasons for starting
15 with a more general model. You are less likely to run into
16 a model which is subject to misspecification. So, I think
17 -- I think the counsel of perfection is probably to start
18 with the more general and work your way in the other
19 direction to see, you know, see whether imposing
20 restrictions to get -- to achieve a more parsimonious model
21 leaves you with something that is statistically defensible.

22 CHAIRMAN GLEIMAN: Does the testing sequence on
23 this record leave the family of models that lack
24 facility-indexed coefficients untested for consistency with
25 data?

1 THE WITNESS: No, I think certainly they have been
2 tested in the Notice of Inquiry against the more general
3 model, the ones that lack -- you are talking here about the
4 models that lack facility-indexed coefficients?

5 CHAIRMAN GLEIMAN: Yes.

6 THE WITNESS: Yes. I think they have been tested
7 in the Notice of Inquiry. And they have been -- and general
8 -- and as I interpret the results of my testimony, and that
9 of Dr. Bradley and Mr. Higgins, I think everyone came to the
10 same conclusion that the data were consistent with the more
11 disaggregated models.

12 CHAIRMAN GLEIMAN: Are there theoretical grounds
13 for excluding that family of models from consideration as
14 appropriate models for mail processing variability?

15 THE WITNESS: I think there are.

16 CHAIRMAN GLEIMAN: And if that's the case, could
17 you explain what those theoretical grounds are?

18 THE WITNESS: Well, I think the primary grounds --
19 what I start with is the point I made in my original direct
20 testimony, that I think if one wants to look at the
21 variability of cost with volume, that means one needs to
22 consider costs and one needs to consider volume, and as I
23 noted in my testimony, labor hours are not the same as
24 costs, because if all you're looking at is labor hours,
25 you're not taking into account the real changes in costs

1 that can be associated with variations in the mix of labor,
2 and you're not -- and if you're looking at piece handlings
3 rather than volume, then there's a confounding relationship
4 that needs to be taken into account on which we have no
5 evidence.

6 We don't know whether piece handlings per piece of
7 mail delivered varies systematically with volume, and I
8 think there are a lot of reasons to believe that it might,
9 and that that might systematically bias the results of
10 models that are based solely upon piece handlings.

11 I think also too, as I noted in my direct
12 testimony, I think the particular specification which was
13 used by Dr. Bradley and which is shared, you know, through
14 this sequence of testing, the one which relates labor hours
15 in the current accounting period to volume in the current
16 accounting period and volume one period back, takes too
17 short-term a view of the effect of volumes on costs.

18 I think there's a lot of discussion about how
19 productivity can change over time. You might have a
20 temporary surge in productivity if there's a sharp increase
21 in volume, and as people work harder or take fewer breaks
22 trying to keep up service standards under the pressure.
23 Over time I think you would have to have volume -- or
24 productivity returning back to more normal levels, which
25 would imply an increase in the number of labor hours that

1 are available. And I don't think that those long-term
2 effects are adequately captured by the model.

3 And I think that that is a defect that is shared
4 by all of the different models in the sequence of testing,
5 and I think for those reasons I have concerns about, you
6 know, the adequacy of the set of models with facility
7 varying coefficients.

8 I also have a -- this is a less articulate sense,
9 but I -- looking at the pattern of results here I have a
10 strong impression that there's much going on in the set of
11 analyses that we really don't fully understand.

12 I've raised questions in my direct testimony about
13 the, you know, whether Dr. Bradley's interpretation of his
14 time trend results are really appropriate, that they didn't
15 look like the effects of changing technology, and I thought
16 very likely they were capturing the effects of something
17 else quite distinct which hasn't been really identified.
18 And I think the very fact that you get such sharp
19 differences in model coefficients as you disaggregate the
20 model by facility suggests that there's a lot going on here
21 that affects the relationship between volume that we don't
22 fully understand.

23 My own sense is that this seems too fragile and
24 incomplete a set of results. It's not a theoretical
25 argument so much as a sense of what does this whole set of

1 analysis seem to indicate. I don't think it's quite
2 finished.

3 CHAIRMAN GLEIMAN: Heading off in the right
4 direction, but still some work to be done.

5 THE WITNESS: Certainly that.

6 CHAIRMAN GLEIMAN: If we can turn now to the table
7 that I provided you, which is entitled Comparison of Bradley
8 and Neel's Econometric Results.

9 Let's mark that as PRC/UPS Cross-Examination
10 Exhibit No. 2, and I would request also that it be
11 transcribed into the record.

12 [Cross-Examination Exhibit
13 PRC/UPS-XE-2 was received into
14 evidence and transcribed into the
15 record.]

16
17
18
19
20
21
22
23
24
25

COMPARISON OF BRADLEY AND NEELS ECONOMETRIC RESULTS						
	Sort					
	Manual Letters	Manual Flats	OCR	BCS	LSM	FSM
Bradley Original Econometric Results [USPS-T-14]						
For MODS Activities(Table 7)	79.7%	86.6%	78.6%	94.5%	90.5%	91.8%
From Two-Way Panel Data Model(Table 14)	75.0%	73.1%	63.3%	83.0%	86.8%	79.7%
From the Model Estimated On Annual Data(Table 15)	73.2%	79.9%	97.5%	100.3%	94.7%	104.0%
From Estimating the Model on SPLY Data(Table 16)	52.3%	52.6%	75.9%	84.2%	88.7%	82.7%
Bradley Response to POIR #4						
No Correction for Serial Correlation						
Pooled - All Variables	107.9%	111.7%	109.3%	108.4%	104.8%	103.2%
Fixed Effects - All Variables	58.9%	62.4%	93.7%	100.6%	90.9%	99.7%
Corrected for Serial Correlation						
Pooled - All Variables	106.3%	110.4%	102.6%	105.5%	103.0%	102.3%
Fixed Effects - All Variables (Same as Table 7)	79.7%	86.6%	78.6%	94.5%	90.5%	91.8%
Neels' Estimated Volume Variability of Mail Processing Labor Costs [UPS-T-1]						
"Scrubbed" Data (Table 5, Same as Bradley Table 7)	80.0%	87.0%	79.0%	95.0%	91.0%	92.0%
All Usable Observations (Table 5)	84.0%	90.0%	83.0%	106.0%	97.0%	102.0%
Modified Version of Bradley's Cross Sectional (Table 1)	125.0%	131.0%	121.0%	132.0%	121.0%	116.0%

1 CHAIRMAN GLEIMAN: Now this exhibit's a
2 side-by-side comparison of elasticities derived for several
3 of the most important MODS sorting processes using a number
4 of models fitted by Witnesses Bradley and yourself. These
5 models are identified in the left-hand column. The list
6 includes models with and without fixed effects, models fit
7 to annual and sply data, models with and without correction
8 for serial correlation, and models fit to all of the data.

9 The model recommended by Witness Bradley is shown
10 in the first line of the table, and the model preferred by
11 Witness Neels, yourself, quote, if the Commission does elect
12 to adopt some version of Bradley's econometric analysis,
13 close quote, is shown in the last line.

14 In the past the Commission has taken the view that
15 it is desirable for econometric results to be robust and
16 stable. For me this means that minor and plausible changes
17 in econometric models, data set, or estimation methodology
18 do not yield major changes in econometric results.

19 Now the question is, in your opinion, are any of
20 the econometric results shown in the table robust and
21 stable?

22 THE WITNESS: Not in my opinion. I've actually
23 said to my associates that work with me on econometric
24 studies that a good study should be like shooting elephants.
25 It should be a really big target and easy to hit no matter

1 how you do it. And if differences in methodology give you
2 pretty drastic differences in results, that is always to me
3 a warning sign that we don't fully understand what's going
4 on, and it's really -- that's the basis for my unease with
5 this line of analysis, and I think, you know, the
6 information that's presented in this table to me amply
7 demonstrates the fact that, you know, we haven't yet figured
8 out what the relationship is between labor -- mail-handling
9 labor costs and volume.

10 CHAIRMAN GLEIMAN: I was about to ask you why do
11 the estimates differ so much from model to model. I think
12 you just answered the question. But if you have any
13 additional thoughts that you'd like to offer up on the
14 direct, specific question.

15 THE WITNESS: I'm not sure I understand fully.
16 The one that I will share my thoughts about, the distinction
17 that I thought about the most, and that's the one between
18 Dr. Bradley's recommended results and my own, I think I said
19 in my direct testimony that there were two -- it seemed to
20 me that there were two aspects of the cross-sectional models
21 that I had identified as the best of the bunch, which I
22 thought helped to explain the difference in variabilities.

23 One is the fact that in the cross-sectional model,
24 you know, the way it was implemented you average across all
25 the observations associated with the site, so you're

1 constructing in a sense a composite observation that
2 summarized what we know about volume over an extended period
3 of time. I think -- as I said in my direct testimony, that
4 has the effect of averaging out some of the measurement
5 error that's associated with the MODS data, and as it
6 reduces the relative importance of measurement error, I
7 think it eliminates some of the downward bias and
8 variability estimates that can be attributed to that cause.

9 I think the other thing which partly explains it
10 is that the nature of a cross-sectional model, it's
11 generally held that cross-sectional analysis comes closer to
12 giving you long-run effects, because you're comparing
13 different types of facilities with different levels of
14 volume. I mean, as you know, my cross-examination earlier
15 today indicated there are systematic differences in volume
16 across facilities, and you get a chance to see what the
17 operation looks like as it's ^{adapted} ~~adopted~~ to those different
18 levels of volume.

19 I think the numbers here suggest that if you look
20 across from smaller facilities to larger facilities you find
21 labor hours increasing more than proportionately, and I
22 think that may be closer to the long-run effect, although,
23 you know, I repeat my earlier reservations about this line
24 of approach.

25 I think those two factors account for much of the

1 difference between the top line and the bottom line, and,
2 you know, the various pieces in between -- I'm not sure I
3 can offer much more than speculation about it.

4 CHAIRMAN GLEIMAN: Is it reasonable to assume that
5 you can't say for certainty which of these models is correct
6 and that all of the others are defective?

7 Or could you say that one of them is correct and
8 all of the other are defective?

9 THE WITNESS: Well, I come back to my primary
10 reservation. I think we need to be looking really at volume
11 or at a minimum if we're going to be using piece handlings
12 as a driver here we need to know how that varies with
13 volume. And that makes me hesitant to say that any of them
14 are correct.

15 Looking across the various sets of results that
16 have been put forward, I'm -- if nailed to a wall and told
17 to pick one, I would pick the cross-sectional version.

18 CHAIRMAN GLEIMAN: But again we're back to good
19 starts and lots of work to do.

20 THE WITNESS: I'm afraid so.

21 CHAIRMAN GLEIMAN: Finding bigger elephants, as it
22 were.

23 THE WITNESS: Or different guns.

24 CHAIRMAN GLEIMAN: Moving on now, some more
25 general questions.

1 If there were a ten-percent increase in the volume
2 of mail processed by the system over one rate cycle, about
3 three years, say, do you believe that the Postal Service
4 would increase the number of mail processing facilities in
5 response?

6 THE WITNESS: I have some knowledge of the Postal
7 Service's procedures. I'm not sure that knowledge is deep
8 enough to allow me to offer a very informed answer. I would
9 think it would be likely that there would be some increase
10 in the number of facilities, just because I would suspect a
11 large increase in volume would sort of change the geographic
12 pattern and create some new needs. But I don't want to go
13 beyond my knowledge of how the Postal Service does things in
14 this area.

15 CHAIRMAN GLEIMAN: Now suppose the number of
16 facilities were increased by ten percent while the average
17 volume at those facilities remained unchanged. Would total
18 processing labor cost for the system as a whole increase by
19 ten percent regardless of the mail processing variability
20 observed at the facility level?

21 THE WITNESS: That's what I would expect to see
22 happen. It's -- in assuming that the new facilities look
23 overall like the old facilities, all you're doing is
24 replicating an identical operation at a new site, and if
25 that's true, you would expect cost to just increase linearly

1 with the number of facilities, or in your example with the
2 volume.

3 CHAIRMAN GLEIMAN: Now in your view is the number
4 of MODS and non-MODS facilities likely to volume -- likely
5 to be volume-variable.

6 THE WITNESS: As I said, I would certainly expect
7 that that would be a possibility. I mean, in a lot of
8 production situations, I mean, in the economy, what happens
9 is if you have a need to increase output, you reach a
10 certain point where you're operating one production facility
11 at its most efficient level of activity, and what one should
12 then do would be to replicate the facility elsewhere.
13 That's why you see new factories being built when output
14 increases, and I think that's a general response of any
15 economic enterprise to an increase in volume. So I'd, you
16 know -- so that leads me to say yes, I would expect the
17 number of facilities to vary with volume.

18 CHAIRMAN GLEIMAN: Well, then, if the number of
19 facilities -- if the number of these facilities does -- is
20 volume-variable, does Witness Bradley's method of applying
21 average volume variability overlook this fact?

22 THE WITNESS: I think it does. His analysis is
23 structured to look at what happens within a given facility.
24 He uses data across facilities to estimate that
25 relationship, but essentially he's asking what happens if

1 you increase the scale of activity within one MODS facility,
2 what happens if you run more piece handlings through, and
3 how is that reflected in hours? It doesn't reflect the fact
4 of just replicating the facility, which would -- in which
5 case you'd expect costs to vary linearly with the number of
6 facilities or directly with 100-percent variability.

7 CHAIRMAN GLEIMAN: In your opinion does the
8 Commission have all of the information it needs to use
9 Witness Bradley's average volume variability to correctly
10 estimate system-wide volume variability processing labor
11 costs?

12 THE WITNESS: I don't believe it does. Aside from
13 the reservations I've already made regarding the econometric
14 analysis and the points that you've made in your questions
15 here about changes in the number of facilities, I have to
16 ask whether there are systematic effects across activities
17 as well. There are some allusions to this I think in some
18 of the discussions where, for example, I think there's some
19 discussion of the role of manual sorting as a reserve
20 activity that suggests that once automated activities
21 have -- if volume increases and automated or mechanized
22 activities are running at full capacity, that manual sorting
23 may be resorted to in an effort to maintain service
24 standards.

25 Now that -- if I take that as a hypothetical

1 example, that would be a situation where as volume increases
2 you get a change in the mix of activities. It's a
3 system-wide effect. It goes beyond any one activity.

4 I think one of the other factors that needs to be
5 taken into account is how the whole system, with all the
6 different sorting technologies, responds to a change in
7 volume, even within a given facility, and I think when
8 things have been broken up activity by activity you don't --
9 you necessarily don't see that. And I think that's
10 something else that needs to be fully understood before
11 these results can be used.

12 CHAIRMAN GLEIMAN: Would one of the types of data
13 that would be missing that we would need to use Witness
14 Bradley's approach be the information about volume
15 variability in the new facilities, assuming we had that
16 increase in the number of facilities that we spoke about
17 earlier?

18 THE WITNESS: One would need to know what the
19 volume variability was, although if the new facilities are
20 structured in a way similar to the old, it probably wouldn't
21 be unreasonable to extrapolate those productivities.

22 CHAIRMAN GLEIMAN: Now do you have a copy of
23 Witness Bradley's direct testimony with you by any chance?

24 THE WITNESS: I don't think I have it on the table
25 with me.

1 CHAIRMAN GLEIMAN: If you think you have it, I'll
2 give you a moment to search for it.

3 MR. McKEEVER: I believe we do have it in the
4 room, Mr. Chairman, just not up at the table.

5 CHAIRMAN GLEIMAN: Could you take a moment and dig
6 it out?

7 THE WITNESS: Thank you.

8 CHAIRMAN GLEIMAN: Now, if you could please turn
9 to page 54, I believe that's where you'll find table number
10 7.

11 THE WITNESS: I have it.

12 CHAIRMAN GLEIMAN: This table displays how Witness
13 Bradley computes cost elasticities for MODS pools.

14 THE WITNESS: I have it.

15 CHAIRMAN GLEIMAN: And the elasticities appear on
16 the bottom line of that table.

17 THE WITNESS: Yes, I have that.

18 CHAIRMAN GLEIMAN: Okay. Coefficient estimates
19 involving squares or cross products are omitted from table 7
20 as a consequence of using mean centered data. Some
21 coefficient estimates are in table 7 but do not enter into
22 the calculation of elasticities that appear on the bottom
23 line. Among these are manual ratio at facility time trends
24 -- time trend 1 and time trend 2.

25 Now, I have some questions I want to ask you. If

1 an estimated coefficient is not used to calculate
2 elasticity, does it constitute an assumption that the
3 variable is not influenced by the volume directly or
4 indirectly?

5 THE WITNESS: I believe that's correct.

6 CHAIRMAN GLEIMAN: Is this assumption plausible
7 for a manual ratio?

8 THE WITNESS: I'm not sure that it is. I spoke
9 earlier about a hypothetical situation in which increases in
10 volume could lead to a change in the manual ratio which
11 would have an indirect -- establish an indirect relationship
12 between volume and costs that would not be captured simply
13 by focusing on the coefficients on pieces and lagged pieces
14 shown in table 7.

15 CHAIRMAN GLEIMAN: Should the coefficient of
16 manual ratio be used in elasticity calculation given that
17 the TPH is a determinant of manual ratio?

18 THE WITNESS: If TPH across activities, which
19 would have to be the case, is a determinant of the manual
20 ratio, then that contribution to volume variability should
21 be taken into account.

22 CHAIRMAN GLEIMAN: If fixed effects coefficients
23 in the Bradley model, $\alpha(i)$, reflect differences among
24 facilities that are indirectly influenced by volume, should
25 the fixed effects coefficients also enter into the

1 elasticity calculation?

2 THE WITNESS: I think the same argument holds
3 there. If a relationship can be established between volume
4 and the fixed effects coefficients, then I think that
5 indirect effect should also be incorporated into the overall
6 estimate of the relationship between volume and cost.

7 CHAIRMAN GLEIMAN: Would the size differences
8 among facilities be an effect that's likely to be reflected
9 in the fixed effect variable?

10 THE WITNESS: It might if -- that wouldn't
11 surprise me at all. If you have large and systematic
12 differences between facilities in size such that the
13 variation over time in volumes for a facility is small in
14 relation to the level, it wouldn't surprise me if much of
15 the level effect went into the fixed effects coefficient.
16 So I could certainly see that happening.

17 CHAIRMAN GLEIMAN: Would you expect size
18 differences to be due in part to differences in TPH levels
19 among facilities?

20 THE WITNESS: Well, ultimately, the size of the
21 facility should be a reflection of the total amount of
22 activity going on within it, so I would expect it to be
23 related.

24 CHAIRMAN GLEIMAN: Do you think this is one reason
25 that the coefficient of the fixed effects variable, the

1 alpha (i), should enter into the elasticity calculation on
2 the bottom line of table 7?

3 THE WITNESS: Well, I haven't done an analysis to
4 establish that relationship, but if -- but it seems very
5 plausible to me that that could be one of the reasons for
6 trying to incorporate some of the fixed effects into the
7 variability estimate. I think, in fact, you know, the --
8 among the results that are in the record, the fact that when
9 one eliminates the fixed effects coefficient, the volume
10 variability goes up suggests that that's happening, that
11 that's part of the explanation for that change or that
12 difference in estimated variabilities between the pooled
13 model and the fixed effect model.

14 CHAIRMAN GLEIMAN: Thank you, Dr. Neels.

15 Do any participants have follow up as a
16 consequence of questions from the bench?

17 Mr. McBride.

18 CROSS-EXAMINATION

19 BY MR. McBRIDE:

20 Q Dr. Neels, my name is Michael McBride, I represent
21 Dow Jones & Company, Inc. I just have a few questions for
22 you from the Chairman's second cross examination exhibit.
23 Do you still have that in front of you, sir?

24 A I do.

25 CHAIRMAN GLEIMAN: Would you hold on a second so

1 the chairman can find his?

2 MR. McBRIDE: Oh, certainly.

3 CHAIRMAN GLEIMAN: I have that, thank you.

4 BY MR. McBRIDE:

5 Q I'm going to ask you, Dr. Neels, if you would
6 compare the first line in the first box entitled Bradley
7 Original Economic Results with the first line in the third
8 box entitled Neels' Estimated Volume Variability of Mail
9 Processing Labor Costs. Are you with me?

10 A I'm with you.

11 Q If you compare the numbers in each of those lines,
12 would you agree that the numbers are rather consistent?

13 A They are rather consistent.

14 Q All right. Then would you also make the same
15 comparison now dropping down a line in the box that concerns
16 your numbers; that is, the all useable observation line. Is
17 there now some more significant variation?

18 A There is.

19 Q And is the reason for that that you did not scrub
20 any data and that Professor Bradley did?

21 A The difference between the first line in the third
22 box and the second line in the third box, as I interpret the
23 table --

24 Q Not the third line, the second line.

25 A Excuse me, the second line. I misspoke -- has to

1 do with the elimination of the scrubbing process.

2 Q Yes.

3 A So I believe you are correct.

4 Q All right. So in other words for clarity of the
5 record, Professor Bradley scrubbed data and you did not, is
6 that correct?

7 A That's correct.

8 Q And what is the reason that economists scrub data,
9 in general?

10 A Well, the stated reason is to eliminate errors,
11 and I have questions about whether that is always what is
12 achieved, but that is the stated reason.

13 Q And it is a fairly routine practice in
14 econometrics, is that correct?

15 A It is not a routine practice in my applications.
16 I mean I can't speak for all people.

17 It is very common for people to look at data and
18 to look for problems. I think the scrubbing process of the
19 sort that Professor Bradley subjected the MODS data to I --
20 I wouldn't say that that is common practice.

21 Q If one were looking at data that seemed to make no
22 sense, I take it that you would expect that good econometric
23 work would call that data into question and make it a
24 candidate for scrubbing?

25 A Well, I think that the right way to do this, as I

1 understand it, is if the data looked questionable, looked
2 odd, one then needs to ask questions about the process that
3 generated the data.

4 I think -- I mean it's my very standard practice
5 to ask where did the data come from, what is the process
6 that generated the data, what properties does that process
7 have, and can any of what is known about the process that
8 generates the data explain these apparent anomalies.

9 I think what happens, I mean what I believe is the
10 right way to do this is to go up into the data source, you
11 know, understand how it works, and then use that
12 understanding to guide your decisions about what should be
13 included in the sample.

14 Now if you call that scrubbing, I'd say that is a
15 very common practice.

16 Q And you are not critical of that in any way, I
17 take it?

18 A I am not critical of that if one understands the
19 process and understands what sample of data you wind up
20 with, so that you can interpret your results accordingly.

21 Q Last question, I hope. Now we are on to that
22 third line in the box pertaining to you.

23 What is the reason that all those numbers are so
24 much different than the other numbers?

25 A Well, the -- you know, I talked about that earlier

1 today.

2 I think that the two strongest explanations are
3 attributable to the fact that in -- well, first, that in
4 constructing the observations for the cross sectional
5 regression following Dr. Bradley's procedure, I averaged
6 across all of the observations associated with the site,
7 that averaging the process has the effect of reducing the
8 relative measurement error in the data because over and
9 under estimations of volumes and piece handlings would tend
10 to cancel out, so I think that that reduces the measurement
11 error in the data and reduces the downward bias in the
12 volume variability estimates that is caused by the
13 measurement error.

14 The second effect, which is probably the more
15 quantitatively significant one, is that the cross sectional
16 model compares facilities that differ systematically in
17 terms of the volume of mail that they process and that have
18 had time to adjust fully to those differences in scale, so I
19 think the cross-sectional model is more likely to show the
20 long-run relationship between labor hours and piece
21 handlings, and I think that over the long term you see these
22 things being more directly related than you do just looking
23 at accounting period to accounting period variations.

24 Q Apart from this very complex analysis, and just
25 looking at his from a slightly more common sense standpoint,

1 Dr. Neels, do numbers over 100 percent make any sense?

2 A Well, they signify diseconomies of scale -- I mean
3 that is -- which exist.

4 Now you wouldn't normally expect an enterprise to
5 be operating at that level, but certainly the existence of
6 diseconomies of scale is something that's known.

7 Q That takes me then outside this exhibit for one
8 final question.

9 The Chairman was asking you about increasing
10 volume and increasing facilities. Do you recall --

11 A I recall.

12 Q -- the question and the answer? If it is the case
13 that postal facilities are capable of handling additional
14 volume in their existing set of walls and roof, would it
15 follow that one needs to build more facilities to handle
16 that increasing volume?

17 A If an increase in volume occurs which can be
18 handled entirely within the confines of the existing system
19 of facilities then -- I mean stating it that way it would
20 not seem to be necessary to construct new facilities,
21 but you have to -- you know, whether that occurs or not
22 depends upon the nature of the volume increase and the
23 amount of residual capacity that exists within the system as
24 it now stands.

25 Q So when you were answering the Chairman's question

1 earlier about economies of scale you didn't mean to imply
2 that the increase in volume necessarily required additional
3 facilities?

4 A What I think I said -- I could envision it being
5 necessary to occur. I think what I said was -- as I stated
6 in my earlier testimony -- what one often finds is that one
7 expands -- this is not necessarily specifically in the
8 Postal Service but in the economy in general. One may find
9 that you reach a point at a given production facility where
10 output cannot be economically expanded further, and at that
11 point that is typically when people would expand the number
12 of facilities.

13 You know, they would replicate the existing
14 facilities so that all the facilities can operate closer to
15 the efficient scale of operations.

16 I don't know specifically what the Postal Service
17 would do, but I would not be surprised to see that the
18 Postal Service had similar, faced similar economic realities
19 and reacted to them in the way that many businesses react to
20 them. That would be by expanding the number of facilities
21 when output cannot be economically expanded within the
22 confines of the existing system.

23 Q But if you were running the business and it could
24 be economically expanded within the confines of the existing
25 facilities, that is what you would do first, isn't it?

1 A That would be the sensible thing to do.

2 MR. McBRIDE: Thank you, Dr. Neels.

3 CHAIRMAN GLEIMAN: Ms. Duchek, I understand you
4 have some follow-up.

5 Before you begin though, let me ask a question.

6 On reflection -- I asked a question earlier and I
7 think that Dr. Neels may have been focusing on the opposite
8 side of the nested sequence model diagram that I was talking
9 about, and if I could ask him a question, perhaps it will
10 generate more follow-up and maybe obviate the need for some,
11 I don't know.

12 If you would look back at that diagram for a
13 moment and focus on the flow on the right-hand side --

14 THE WITNESS: I have that.

15 CHAIRMAN GLEIMAN: -- and let me ask you a
16 question that I asked you before.

17 Does the testing sequence on this record leave the
18 family of models that lack facility indexed coefficients
19 untested for consistency with data?

20 THE WITNESS: The set of models that lack
21 facility-specific coefficients shown on this diagram are, if
22 I count them correctly --

23 CHAIRMAN GLEIMAN: Again, we are focusing on the
24 right-hand flow.

25 THE WITNESS: Okay. Well, the right-hand flow has

1 not been fully tested in this proceeding.

2 CHAIRMAN GLEIMAN: Okay.

3 THE WITNESS: That is the simple question that --
4 simple answer.

5 CHAIRMAN GLEIMAN: Well, that is what I was asking
6 before, and I think that I may have confused you, either in
7 the way I asked the question or what we were focusing on
8 just before that. Thank you.

9 THE WITNESS: Okay.

10 CHAIRMAN GLEIMAN: And I apologize for having to
11 interject but better to clarify now than later.

12 Ms. Duchek.

13 MS. DUCHEK: Thank you, Mr. Chairman.

14 FURTHER CROSS-EXAMINATION

15 BY MS. DUCHEK:

16 Q Actually, Dr. Neels, we're still on
17 Cross-Examination Exhibit Number 1, from the Chairman --

18 A Okay.

19 Q Isn't the direction of the arrows which indicate
20 the sequence of model selection actually reversed from the
21 initial discussion you had with Chairman Gleiman?

22 A The sequence shown on this diagram flows
23 presumably from top to bottom, which starts with the most
24 general model and then sort of tests various restrictions
25 and I think in the discussion, if I recall it correctly, we

1 did talk about the pooled model and going in the other
2 direction.

3 Q Correct.

4 A Okay.

5 Q You started with the discussion of statistical
6 hypothesis testing with the pooled model and worked your way
7 back up. Correct?

8 A I believe that is correct.

9 Q Didn't Witness Bradley use the Hausman statistical
10 tests to test the random versus fixed effects model?

11 A I believe he did. I would have to check it. My
12 memory is incomplete on that particular point right now.

13 Shall I do so?

14 Q No. Would you accept subject to check that he
15 did?

16 A I would.

17 Q Dr. Neels, isn't the technical reason for starting
18 with the more restrictive specification that you can know
19 the distribution of test statistics under the restriction
20 but not necessarily under fully general conditions?

21 A If you are using something like -- I'll stick with
22 an F test because we have been talking about that, the F
23 test is a -- it is a statistic one calculates I guess from
24 the point of view of the restricted model.

25 There are other tests around that structure the

1 tests somewhat differently as to whether you are evaluating
2 the test from the point of view of the null hypothesis or of
3 the alternative hypothesis, but with the F test I guess I'll
4 accept that as a reasonable interpretation.

5 Q As a general matter, if some methodologies would
6 produce biased or inconsistent estimates of variabilities,
7 wouldn't you expect to see some large variation in results
8 with specification changes?

9 A If you are changing the specification of the model
10 one often finds big changes in results. I mean that is
11 known as specification bias, so I guess I wouldn't be
12 surprised to see big changes in results when one changes the
13 specification in ways that matter.

14 If you have encompassed most of the essential
15 determinants of the phenomena you are looking at and are
16 exploring the effect on the results of changes in variables
17 and specifications in approach that are of marginal
18 significance, then you wouldn't expect to see big changes in
19 results and in fact that is one of the criteria that I think
20 should be used to determine whether you have gotten it or
21 not.

22 Q But here I am really talking about the choice of
23 estimation technique.

24 A Yes.

25 Q So again if the methodologies would produce biased

1 or inconsistent estimates of variabilities you would expect
2 to see some large variation in results with specification
3 changes, correct? -- and that is the choice of technique.

4 A If some estimation techniques produce biased
5 results and others don't, then one would expect to see big
6 changes -- or I should say one would expect to see changes.
7 I can't speak on the magnitude of those changes.

8 Q If the Postal Service were to add new facilities,
9 should it add facilities that resemble its existing
10 facilities or facilities which represent the best available
11 processing practices?

12 A I would think they should add facilities that
13 represent the best processing practices at the scale of
14 operation and given the mix of activities that were
15 anticipated at the new facilities.

16 Q Wouldn't this imply that the increase in
17 processing costs ^{could} ~~cost~~ be less than proportional?

18 A In other words you are saying if the new
19 facilities had lower productivities than existing
20 facilities --

21 Q Higher productivities.

22 A -- had higher productivity, thank you. It could.
23 A lot would depend upon the nature of the volume increase
24 and where the volume was occurring.

25 One could envision a lot of different

1 circumstances where one had to expand the number of
2 facilities and increase the labor hours and all the other
3 costs associated with the new facility.

4 One could also envision increases in volume that
5 perhaps took place, as we heard earlier, within facilities
6 where there was existing capacity where it wasn't necessary
7 to expand in the same way, so I think you might get less
8 than proportional increases in cost depending on the nature
9 of the increase or you might get more, though certainly if
10 the productivity of facilities is increasing over time and
11 you are increasing output by adding new facilities rather
12 than by expanding within existing facilities, that would
13 tend to suggest that there would be some savings associated
14 with increases in volume.

15 Q In your opinion, is variation in facility size
16 more likely to be the result of variation in local
17 destinating volume, or in systemwide volume?

18 A It would probably depend somewhat on the nature of
19 the facility. I suspect the answer might be different
20 between MODs facilities and BMCs. And I would think you
21 would need to consider not just destinating volume but
22 originating volume.

23 Q But what about local volumes in general?

24 A What type of facility are you speaking of?

25 Q Just a MODs 1 mail processing facility.

1 A MODs 1. Well, I would expect that, you know,
2 changes in, you know, volumes of mail originating from and
3 destinating at the service area of the facility would tend
4 to be a big determinant of growth in that MODs facility.
5 However, those letters are flowing out, letters and other
6 pieces of mail were flowing out from that facility through
7 the rest of the system. So, in that sense, I mean it would
8 be tied into general system volume as well.

9 Q But wouldn't we expect the change in system-wide
10 volume just to cause the average size of facilities to move
11 up or down?

12 A Well, it would, but the change in system-wide
13 volume, I mean all of that mail is going somewhere, and it
14 is all coming from somewhere, and so the system-wide effect
15 is simply the sum of all of those individual effects. So
16 it's -- I mean you can't -- you can't increase mail without
17 having it go somewhere.

18 Q Dr. Neels, do you understand the increase in MOD 1
19 and MOD 2 offices to mean that the Postal Service has
20 created new facilities, or simply that it has added them to
21 the MODs data system?

22 A I know there was an expansion of the number of
23 facilities that were covered by the MODs data system, and my
24 understanding, based upon my reading of Dr. Bradley's
25 testimony, was that that was the result of a change in the

1 number of reporting units, not a change in the number of
2 actual units in operation. Between -- so I know that
3 certainly -- units or facilities have been added to the
4 system that don't represent new construction, if you will.

5 Q Dr. Neels, if you were using a very large data
6 set, an historical data set, and you know that there is an
7 underlying relationship between two of the variables, such
8 as the implicit productivity relationship between TPH and
9 hours, and you identified a set of observations whose ratio
10 was in the outer tails of the distribution, would you want
11 to investigate those observations?

12 MR. McKEEVER: Mr. Chairman, may I just ask that
13 the question be repeated?

14 MS. DUCHEK: Yes.

15 MR. McKEEVER: I missed something in the
16 beginning.

17 MS. DUCHEK: Okay.

18 BY MS. DUCHEK:

19 Q If you were using a very large historical data
20 set, and you knew that there was an underlying relationship
21 between two of the variables, for example, the implicit
22 productivity relationship between TPH and hours, and you
23 identified a set of observations whose ratio was in the
24 outer tails of the distribution, would you want to
25 investigate those observations?

1 A I would like to know what could account for the
2 extreme values that they took.

3 Q And if you determined that those observations were
4 operationally impossible, would you necessarily want to
5 include them in your analysis?

6 A If I had an external standard that I had
7 confidence in, that could tell me that, you know, with
8 certainty, that these data points represented impossible
9 situations, then, under that circumstance, I probably would
10 not want to include them in my analysis.

11 MS. DUCHEK: Thank you, Dr. Neels, I have no
12 further questions.

13 CHAIRMAN GLEIMAN: Is there any further follow-up?

14 [No response.]

15 CHAIRMAN GLEIMAN: That brings us to redirect.
16 Mr. McKeever, we have a choice, you can take five or ten
17 minutes now and we can finish up with your witness, or you
18 can do it during lunch, and we can all take a break and come
19 back at 2:00 o'clock.

20 MR. MCKEEVER: I believe if I take five or ten
21 minutes, that probably would be sufficient. But it is at
22 the Chair's convenience. If you prefer to break now.

23 CHAIRMAN GLEIMAN: If it doesn't spoil your lunch,
24 I would prefer to break now. We will come back at 2:00
25 o'clock and you can have loads of time to talk with your

1 witness.

2 MR. McKEEVER: That's fine.

3 CHAIRMAN GLEIMAN: Okay. Thank you. We will come
4 back at 2:00 o'clock then.

5 [Whereupon, at 12:48 p.m., the hearing was
6 recessed, to reconvene at 2:00 p.m., this same day.]

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1250 I Street, N.W., Suite 300
Washington, D.C. 20005
(202) 842-0034

AFTERNOON SESSION

[2:02 p.m.]

1
2
3 Whereupon,

4 KEVIN NEELS,

5 the witness on the stand at the time of the recess, having
6 been previously duly sworn, was further examined and
7 testified as follows:

8 CHAIRMAN GLEIMAN: I take it you have no redirect,
9 Mr. McKeever?

10 MR. McKEEVER: That's right, Mr. Chairman.

11 CHAIRMAN GLEIMAN: What a guess! I'm on a roll,
12 maybe I should just give the answers and not ask the
13 questions, if I have any this afternoon.

14 You do not have redirect?

15 MR. McKEEVER: We do not have redirect, Mr.
16 Chairman.

17 CHAIRMAN GLEIMAN: If that is the case, then, Mr.
18 Neels, I want to thank you. We appreciate your appearance
19 here today and your contributions to our record. And if
20 there is nothing further, you are excused.

21 THE WITNESS: Thank you very much.

22 [Witness excused.]

23 CHAIRMAN GLEIMAN: Mr. Richardson, if you can
24 identify your witness so that I can swear him in.

25 MR. RICHARDSON: Thank you, Mr. Chairman. The

1 Office of the Consumer Advocate calls J. Edward Smith, Jr.
2 Whereupon,

3 J. EDWARD SMITH, JR.,

4 a witness, was called for examination by counsel for the
5 Office of the Consumer Advocate and, having been first duly
6 sworn, was examined and testified as follows:

7 CHAIRMAN GLEIMAN: Please be seated.

8 THE WITNESS: Thank you, Mr. Chairman.

9 CHAIRMAN GLEIMAN: Get yourself settled in and,
10 Mr. Richardson, you can introduce your witness' testimony.

11 While we are waiting, Mr. Smith, and you are
12 shuffling your papers around, what does the J. stand for?

13 THE WITNESS: Joseph.

14 CHAIRMAN GLEIMAN: I was just wondering whether it
15 was an initial or a name. There are people who have the
16 name Jay.

17 THE WITNESS: I see, now it is the name, however,
18 there are number of Joe Smiths around, so it seemed
19 appropriate to use the middle name. I am ready, Mr.
20 Chairman.

21 CHAIRMAN GLEIMAN: I think I have seen a few
22 movies with Joe Smiths in them over the years.

23 DIRECT EXAMINATION

24 BY MR. RICHARDSON:

25 Q Dr. Smith, do you have before you copies of the

1 direct testimony that was filed in this case?

2 A I do.

3 Q And was that prepared under your direction?

4 A Yes, it was.

5 Q Do you have additions or corrections to make to
6 that today?

7 A Yes, I do. There are two minor changes which have
8 been made to the copies. On page 28, line 10, we will
9 strike the words "logs of the". So the sentence will read,
10 "A summation of all the hours in TPH".

11 And on page 3 of 19, unnumbered line number four
12 up from the bottom, where it says "summation of the logs of
13 total hours", we should strike the words "logs of" so that
14 it reads "summation of the total hours". Those are the two
15 changes.

16 Q And having made those changes, if you were asked
17 those questions today, would your answers be the same as
18 contained therein?

19 A Yes, sir.

20 Q And do you adopt the answers as your testimony in
21 this proceeding today?

22 A I do.

23 MR. MCKEEVER: Mr. Chairman, I would move the
24 admission of the Testimony of J. Edward Smith, Jr. on Behalf
25 of the Office of the Consumer Advocate, OCA-T-600, and

1 exhibits attached, OCA-601 through OCA-603.

2 CHAIRMAN GLEIMAN: Are there any objections?

3 [No response.]

4 CHAIRMAN GLEIMAN: Hearing none, Mr. Smith's
5 testimony and exhibits are received into evidence and I
6 direct that they be transcribed into the record at this
7 point.

8 And, counsel, if you could please provide the two
9 corrected copies to the court reporter.

10 [Direct Testimony and Exhibits of
11 J. Edward Smith, Jr., OCA-T-600,
12 was received into evidence and
13 transcribed into the record.]

14

15

16

17

18

19

20

21

22

23

24

25

OCA-T-600
Docket No. R97-1

DIRECT TESTIMONY OF
J. EDWARD SMITH, JR.

ON BEHALF OF
THE OFFICE OF THE CONSUMER ADVOCATE

December 30, 1997

TABLE OF CONTENTS

STATEMENT OF QUALIFICATIONS	1
I. PURPOSE AND SCOPE OF TESTIMONY.....	2
II. WITNESS BRADLEY'S ANALYTICAL ECONOMIC FRAMEWORK IS NOT CONSISTENT WITH ACCEPTED ECONOMIC THEORY	5
A. The Cost Equation Is Deficient For It Lacks A Production Function Analysis.....	6
B. The Treatment Of Technological Change Is Inadequate	11
C. The Time Trends Analysis Yields Questionable, Inconsistent Results	13
D. The Study Focuses On The Very Short Run: Longer-Run Analysis Is Needed	16
III. ECONOMETRIC ISSUES	19
A. Witness Bradley Should Have Used The Pooled Regression Model In Place Of The Fixed Effects Model.....	19
B. The Actual Data Plots By Facility Also Are Visually Compelling, Leading To A Pooled Regression Model Conclusion.....	27
IV. DATA ASSUMPTIONS ARE NOT SUFFICIENT	30
A. Additional Variables Are Required	30
B. The Mail Processing Analysis Confirms The Need For Additional Variables	32
C. The Data Scrubbing Effort Needs Additional Analysis To Check The Reliability Of The Procedures	33
D. The Absence Of Non-MODS Data Potentially Biases The Conclusions	34

V. COST ALLOCATION STANDARDS.....36

A. The Study Does Not Meet Traditional Regulatory Standards.....36

**B. Application Of The Study's Conclusions Would Be Contrary To
 Requirements Of The Postal Reorganization Act.....39**

VI. CONCLUSIONS41

EXHIBITS

1 **I. PURPOSE AND SCOPE OF TESTIMONY**

2 The purpose of my testimony is to comment on the appropriateness,
3 usefulness and applicability of the testimony of Postal Service witness Bradley. His
4 proposed cost/volume methodology is used to develop the variability of mail
5 processing labor hours as they relate to mail volume (total piece handlings (TPH)).¹
6 Because the determination of the cost of mail processing has a major impact on the
7 rate levels, witness Bradley's work serves as a significant input to the rate-making
8 process.

9 I have reviewed the economic theory, econometric equations, and variables
10 in witness Bradley's testimony. I do not believe that his methodology is theoretically
11 sound, analytically correct, or complete. Methodological changes and data
12 improvements are necessary, and these changes are likely to result in major
13 changes to his conclusions. I therefore conclude that witness Bradley's study does
14 not establish a reliable indication of the degree of causal connection between labor
15 hours and TPH, and, as a result, does not establish a proper foundation for mail
16 processing cost attribution in this proceeding.

17 My comments on witness Bradley's testimony will focus on the following
18 issues:

¹ Witness Bradley's testimony appears in this docket in USPS-T-14.

1 • **The analytical framework underlying witness Bradley's study.** I
2 believe that the economic framework of witness Bradley's study is incomplete in
3 terms of the explanation and justification of his cost equations and in his failure to
4 base his analysis on a production function; nor is there adequate consideration of
5 capital, technological change, and time trends. He also focuses incorrectly on short-
6 run costs without considering the longer term during which the rates will be in effect.
7 Finally, the study is deficient in that it omits considerations of equipment
8 characteristics, *e.g.*, capital investment, age of equipment, and layout of equipment.
9 The analysis needs to incorporate additional variables to provide an improved
10 understanding of the cost drivers.

11 • **Witness Bradley's use of a fixed effects regression model.** I believe
12 that witness Bradley has focused excessively on short-run cost analysis and that his
13 fixed effects model is inappropriate, because it models short-run costs. I conclude
14 that a pooled regression approach is more consistent with the underlying form of the
15 data and the longer-run time period over which the rates will be in effect.

16 • **Witness Bradley's analysis of the underlying data.** The analysis needs
17 to incorporate additional variables to provide an improved understanding of cost
18 drivers. Additional review of the data scrubbing process is needed. The application
19 to non-MODS facilities of conclusions based on data from MODS facilities is
20 unsubstantiated. Finally, a simple plotting of the scrubbed data in exhibit OCA 602

1 demonstrates that the underlying pattern of the data is at variance with his
2 conclusions.

3 • **Established common sense regulatory standards.** Witness Bradley's
4 conclusions fail to meet both the generally accepted, common sense regulatory
5 standards and certain fundamental requirements of the Postal Reorganization Act
6 which are to be considered when establishing rates

7 I sponsor the following exhibits: OCA 601, my qualifications; OCA 602, a
8 series of data plots relating labor hours and total pieces handled (TPH); and OCA
9 603, a presentation of hours and TPH plots on a facility specific and total operations
10 basis. I also sponsor library reference OCA-LR-8, the programs derived from
11 witness Bradley's work used to produce exhibit OCA 602, and library reference
12 OCA-LR-9, the programs derived from witness Bradley's work used to produce
13 exhibit OCA 603.

1 **II. WITNESS BRADLEY'S ANALYTICAL ECONOMIC FRAMEWORK**
2 **IS NOT CONSISTENT WITH ACCEPTED ECONOMIC THEORY**
3

4 Witness Bradley has made a variety of explicit and implicit economic
5 assumptions. I will focus on the following major issues: the cost function, capital,
6 technological change, time trend, and time period. Witness Bradley's cost equation
7 for the mail processing activity does not explicitly model the total production
8 process, but rather focuses on two major variables—TPH and hours. The results of
9 this limited analysis have minimal explanatory power over the period the rates will
10 be in effect. Although TPH is correlated in the accounting system to hours worked,
11 it is not shown to be the only or even the major driver of costs. Other cost drivers,
12 such as the types and age of equipment, arrangement of the production process,
13 product demand, and types of processing activities could have a causal impact on
14 the hours/TPH relationship. Significant issues not considered in the cost equation
15 include: (1) the explicit treatment of the achievement of economic cost minimization;
16 (2) the analysis of tradeoffs between capital and labor; (3) the choice of
17 technologies; (4) scale economies as related to the production process; (5) the
18 interplay of capital choices (for example, production relationships between
19 activities); (6) age of equipment; and (7) type of equipment.

1 **A. The Cost Equation Is Deficient, For It Lacks A Production Function**
2 **Analysis**

3
4 Witness Bradley's study relates labor hours and TPH with a cost equation.
5 This cost equation is not sufficient for the task. Economic theory uses production
6 functions in specifying cost functions. Economists specify production functions as
7 representing the relationship between the inputs to the production process (*i.e.*,
8 labor, capital, etc.) and the outputs (*i.e.*, the product). The theory of production
9 functions requires that in order to properly relate, mathematically, inputs and
10 outputs, an analysis is required of the properties of the functions, including
11 capital/labor tradeoffs, expansion paths, and economies of scale. Cost functions
12 are derived from the theory of production functions. As indicated by witness
13 Bradley:

14 A cost function is derived through an optimization process by which,
15 using envelope theorem, there is an assumption that cost minimization
16 is taking place.

17
18 That's not always the case in production, and so, an alternative
19 approach to measuring actual costs is to use what's known as a cost
20 equation. In a cost equation, we're simply relating the cost, here labor
21 hours, to the drivers that determine that cost, TPH and so forth.²
22

23 However, witness Bradley's cost equation does not consider adequately the
24 important properties of production and cost functions, including capital/labor

² Tr. 11/5544-45.

1 tradeoffs and joint production. Potential tradeoffs are especially important in view of
2 the Postal Service's major automation and investment programs.

3 Witness Bradley performs the cost estimation using a translog cost equation:

4 I therefore follow the standard econometric practice of using a flexible
5 functional form to approximate the true, but unknown functional form.³

6
7 The translog cost form has been recommended by the Commission for the analysis
8 of costs.⁴ The use of the translog model is well defined in the economics literature.
9 Examples include Utility and Production Functions by Chung and Intriligator's
10 exposition in Econometric Models, Techniques, and Applications.⁵ Other functions,
11 such as the Constant Elasticity of Substitution (CES) or Cobb-Douglas, are in fact
12 sub-cases, depending on the assumptions. As stated in a Commission opinion,

13the translog model lets the data and the econometrics mediate the
14 issue of which terms are significant in explaining the cost behavior. In
15 other words, the translog functional form does not force the estimated
16 total cost curve to follow any predetermined linear or curvilinear
17 pattern but, instead, it allows the estimated cost function to reflect the
18 prevailing pattern in the data better than any other model presented on
19 this record.⁶
20

³ USPS-T-14, at 36.

⁴ PRC Op. R87-1, App. J, at 22.

⁵ Jae Wan Chung, Utility and Production Functions, Cambridge, Blackwell, 1994. Michael D. Intriligator, Ronald G. Bodkin, Cheng Hsiao, Econometric Models, Techniques, and Applications, Upper Saddle River, New Jersey, Prentice Hall, Second Edition, 1996.

⁶ PRC Op., R87-1, App. J, at 22.

1 In my opinion, witness Bradley's translog cost equation is insufficient, for he
2 does not include capital as one of the cost factors. Witness Bradley needs to
3 examine the underlying production function and the derivation of the cost function.
4 He also needs to examine capital/labor substitutions, scale economies, and the
5 interrelationships of activity processes in conjunction with his estimated cost
6 equation. This will enable an understanding of the impact of changes in capital and
7 technology on the cost in labor hours as TPH varies during mail processing.

8 Witness Bradley presents a cost equation that allegedly explains cost as a
9 function of output based on data available from an operational field data collection
10 system. However, he recognizes that his cost equation is not derived from a
11 production function analysis:

12 [T]he cost equation on page 36 [of my testimony] is more
13 attuned to what's known as a variable cost equation, where it's looking
14 at one of the components, that one being labor, and to be precise, this
15 equation does not model or include capital.⁷
16

17 Since witness Bradley's cost equations for each activity are not fully derived
18 and justified in terms of economic theory, the cost equations may provide a good
19 data fit on an operational basis at a given facility. Nevertheless, the equations
20 generally lack explanatory power for the purpose of cost allocation. Witness Bradley
21 indicates:

⁷ Tr. 11/5546.

1 I think that there is an underlying production function in the
2 sense described by witness Panzer (sic) in terms of regular operating
3 procedures and regular operating plan. I have not identified or
4 investigated the nature of that production process.⁸

5
6 I do not doubt that the Postal Service has regular operating plans and
7 procedures. They are prudent necessities of business operations. However, plans
8 and procedures do not provide the analytical form or explanatory power found in a
9 correctly specified translog production function as defined by economists. In
10 addressing production cost estimation, witness Bradley agrees that economic theory
11 indicates the inputs to a production function are both capital and labor. He also
12 agrees that a production function considers tradeoffs between labor and capital. He
13 cites a number of studies related to telephony, electricity, hospitals, trucking, etc.⁹
14 Witness Bradley has indicated that capital could be a relevant variable.¹⁰ Based on
15 his statement and my knowledge of production and costing, I conclude that capital is
16 a relevant input that should be considered in the analysis.

17 One of the major inputs to be considered as part of the modeling of
18 production and cost is capital. Postal Service capital investment will be an
19 increasingly important means of reducing mail processing costs and improving

⁸ Tr. 11/5545.

⁹ Tr. 11/5546. *See also*, Tr. 5456.

¹⁰ Tr. 11/5547.

1 productivity.¹¹ Additional funds have recently been allotted for large future capital
2 investments.¹² Considerations of capital deployment are essential in analyzing
3 capital/labor substitutions and choices, and in examining changes in production,
4 changes in factor prices, choice of technology, and changes in technology.

5 Witness Bradley also needs to model joint production issues. He models a
6 number of mail processing activities at a facility but treats the activities as
7 independent of one another. This approach ignores key relationships among
8 activities within the facility, *i.e.*, how demands for various types of postal products
9 and usage of various activities interact to affect labor usage. Witness Bradley
10 touches on the possible interaction of activities in his discussion of general support
11 activities facilitating mail processing.¹³ In a mail processing facility there are a
12 number of processes that feed each other. For example, the dock feeds mail to the
13 facility, facer/canceller machines and the optical character readers feed data to
14 sorters, and ultimately mail is fed back to the dock area for transportation. The

¹¹ See, for example, Explanation Of Cost Reductions And Other Programs, USPS-LR-H-10, referencing expanded Postal Service programs which will affect cost, productivity, and other operating factors.

¹² The Board of Governors has approved capital expenditures and improvements to achieve increased efficiency, such as plans to invest \$17 billion over the next five years for capital improvements. See Board of Governors Monthly Meeting, October 7, 1997, at 62-64.

¹³ USPS T-14, at 87-88.

1 arrangement of machines, types of machines, and management of the processes
2 affect the overall level of productivity in the mail handling process. Although the mail
3 processing activities are distinct, they do not operate on a "stand-alone" basis.
4 Further examination of joint production issues is necessary in order to determine an
5 appropriate cost equation.

6 In conclusion, witness Bradley's cost estimating equations are inadequate in
7 their attempt to estimate the relationship between TPH (the exogenous variable)
8 and hours (representing cost, the dependent variable) along with several other
9 exogenous variables (e.g., the time trends and manual ratio¹⁴). The absence of an
10 underlying production function analysis renders the cost equation inadequate in
11 considering the inputs to the production process and the potential interaction of
12 activities.

13 **B. The Treatment Of Technological Change Is Inadequate**

14 Witness Bradley attempts to account for technological advances in his
15 discussion of aggregate models of productivity and time trends.¹⁵ He quotes Dr.
16 William Greene, a noted econometrician, as stating that technological change can
17 be measured with an autonomous time trend. However, I believe that witness

¹⁴ The manual ratio is the ratio of manual letters TPH to the sum of all manual letters TPH, mechanized letters TPH, and automated letters TPH.

¹⁵ USPS-T-14, at 13-15.

1 Bradley's interpretation of Dr. Greene's comments is incorrect. The sentence
2 immediately preceding the quotation states, "Macroeconomic models are often
3 formulated with autonomous time trends."¹⁶ Witness Bradley is not addressing a
4 macroeconomic problem. Instead, on the microeconomic issue of technological
5 change, witness Bradley needs to address the fundamental drivers of technological
6 change impacting the mail handling process.

7 Furthermore, the economics literature does not provide a theoretical basis for
8 witness Bradley's approach. In a two factor macroeconomic model, a generally
9 accepted practice has been the use of a time variable to model "all other factor(s),"
10 which are usually considered to be technological change. This is done in the
11 absence of better data. In the context of macroeconomic analysis, the time trend
12 can measure productivity changes; however, such a time trend is inappropriate on
13 the microeconomic analysis level. An explicit modeling of capital related variables is
14 required in order to explain technological change and other important
15 microeconomic factors driving costs.

16 **C. The Time Trends Analysis Yields Questionable, Inconsistent Results**

17 Witness Bradley claims the autonomous time trend variable captures the
18 effect on the dependent variable of all time-varying factors not otherwise included in

¹⁶ William H. Greene, Econometric Analysis, Upper Saddle River, New Jersey, Prentice Hall, 1993, at 239. This discussion also appears in the Third Edition published in 1997, at 391.

1 the model. He also indicates that the time trend variable could simultaneously
2 measure "autonomous changes in the quality of the workforce, improved efficiency
3 of the machinery, or more effective integration of the machinery into the operating
4 system" as well as any other capital effects.¹⁷ According to witness Bradley:

5 ...the time variable includes the effects of technological change, but it
6 also includes any other changes in the nature of the operation through
7 time....

8
9 So I wouldn't limit its interpretation solely to technological change, and
10 in response to someone's interrogatory I tried to make clear it's really
11 capturing any effects that are persistent through time in that
12 operation.¹⁸

13
14 In my opinion, witness Bradley's use of the autonomous time trend variable
15 lacks precision from an explanatory viewpoint. He estimates the cost equations
16 using the time trend variable in current and lagged form—"Time Trend 1" and "Time
17 Trend 2." In addition to theoretical problems with the use of time trend variables,
18 witness Bradley also encounters estimating problems. The signs of the estimated
19 coefficients of the time trend variables present questionable results. For example,
20 for "Time Trend 1" some estimated coefficients are positive, and some are negative,
21 depending on activity. In addition, in some cases the sign of the coefficient of "Time
22 Trend 1" is different from the sign of "Time Trend 2." On lines 10 and 11 of witness

¹⁷ Tr. 11/5277.

¹⁸ Tr. 11/5553.

1 Bradley's Table 7 (Econometric Results for MODS Sorting Activities),¹⁹ the
2 coefficient estimates for "Time Trend 1" for manual letters, OCR, BCS, LSM, and
3 FSM have negative coefficients. However, for some other activities, SPBS, Manual
4 Priority, Manual Parcels, and Canceling and Meter Preparation, the estimated
5 coefficient is positive. In other cases, the coefficient is statistically insignificant, e.g.,
6 manual flats, SPBS Priority. Apparently, whatever is being measured by the time
7 trend can have a positive, inconsequential, or negative effect. Additional
8 explanation is needed.

9 In addition, the estimated coefficient signs do not agree between "Time Trend
10 1" and "Time Trend 2"—even though "Time Trend 2" was previously "Time Trend 1."
11 Whatever effect is measured by the time trend can be positive or negative, and not
12 in any particular order. Witness Bradley's Table 8, which presents the Econometric
13 Results for MODS Allied Activities (Opening Pref., Opening BBM, Platform, and
14 Pouching),²⁰ appears to confirm this problem, as does his Table 9, Econometric
15 Results for BMC Sorting Activities (Mechanized Sack Sorting, Mechanized Primary
16 Parcel Sorting, NMOs, BBM Sack Opening, Irregular Parcel Post).²¹ To quote
17 witness Bradley:

¹⁹ USPS-T-14, at 54.

²⁰ USPS-T14, at 63.

²¹ USPS-T14, at 65.

1 The differentials in the signs would reflect different autonomous
2 trends in time, and what I mean by that is in any activity there's going
3 to be nonvolume effects which are causing that activity's productivity
4 or hours to go up and down through time, and what the time trends
5 capture and attempt to control for are those external or autonomous
6 effects on the cost equation, as we were saying before, the shifting in
7 the cost equation. So the reason that these would be different would
8 be that different individual operations are subject to different external
9 events through time.²²

10

11 Accordingly, I conclude that witness Bradley believes that one or more
12 external effects can affect a mail processing activity positively or negatively.

13 However, from an explanatory point of view, witness Bradley has not delineated the
14 external effects or why they are positive or negative. I am unable to conclude what
15 the external effects measure or how or why they affect an activity. Also, I am unable
16 to confirm that the signs are consistent with a correct methodology. At a minimum,
17 additional explanation is required, and it may also be the case that additional
18 analysis is necessary.

19 **D. The Study Focuses On The Very Short Run: Longer-Run Analysis Is**
20 **Needed**

21

22 The time period under analysis for the cost function estimation is not
23 adequately defined for the cost equation. The data span at least 39 time periods;
24 however, most of witness Bradley's comments and analysis suggest that he is

²² Tr. 11/5554.

Revised
February 13, 1998

1 looking at essentially "monthly" or, more precisely, four-week periods.²³ Given the
2 short-run four week time frames he nevertheless intermingles short-run and longer-
3 run considerations.
4 The reason that short-run/longer-run issues are so important is that estimates of
5 cost incidence will be different, depending on which type of cost (short-run or longer-
6 run) one is attempting to measure. It is generally recognized that most production
7 processes will permit a slight increase or decrease with proportionately lower
8 amounts of labor. However, the appropriate mail processing cost to measure as
9 volumes increase or decrease is the longer-run cost—which witness Bradley has not
10 measured. Witness Bradley states that:

11 ...economists define the long-run as a situation in which all inputs are
12 flexible and can be adjusted. The short-run would exist when any of
13 those inputs would not be perfectly adjusted.²⁴
14

15 In commenting on the longer-run/short-run issue, witness Bradley indicated:

16 I am informed that once an automated machine has been accepted
17 from the manufacturer, it will typically only take one or two accounting
18 periods to reach the minimum threshold for normal operations.²⁵
19

20 Based on witness Bradley's comments, it appears that the longer-run for the
21 mail processing activities under consideration is approximately a year, given the

²³ There are thirteen time periods in a year, so data are close to, but not exactly, monthly.

²⁴ Tr. 11/5547.

²⁵ Tr. 11/5356.

1 Postal Service's extensive ongoing capital programs. The longer-run might not even
2 involve immediate capital investments but might simply involve the permanent
3 addition of personnel to use existing investment more intensively. Witness Bradley
4 quotes Dr. William J. Baumol's comments in Docket No. R87-1:

5 A final matter to be touched on briefly here is the choice of marginal
6 costs upon which the rates should properly be based. Should these
7 marginal costs be short run or long run in nature? As I will show, the
8 answer is that they should be the actual marginal costs, whichever of
9 those that may be. When an output of a service is increased (or
10 decreased), there is only one amount of cost actually added (or
11 saved), not two or three. The actual marginal costs are normally
12 closest to what economists call short run marginal costs (SRMC). But it
13 must be emphasized that these actual marginal costs do include cost
14 consequences of a current volume change that may occur in future
15 periods. (Emphasis in original.)²⁶
16

17 Witness Bradley indicates that the concept of marginal costing is applicable in
18 the current case:

19 One should attempt to base prices on the marginal costs that will
20 actually be incurred by the firm to serve a sustained increase in
21 volume over the time period during which the prices will be in effect.
22 Taken literally, this would require that some version of short run
23 marginal costs should be used.²⁷
24

²⁶ Tr. 11/5417.

²⁷ Tr. 11/5417 (Response to P.O. Information Request No. 4, question 1a.)

1 Based on the above comments, witness Bradley appears to indicate that he
2 is estimating short-run costs. He explains drivers of the cost/volume relationship in
3 the following terms:

4 The first reason is the existence of relatively fixed functions within the
5 activity. Certain functions, like setting up mail processing equipment
6 or tying down a manual case are done for each sorting scheme and
7 are not sensitive to the amount of volume sorted. As volume rises, the
8 hours in these functions do not rise much, if at all.²⁸

9
10 I conclude that witness Bradley has focused on short-run cost analysis.

11 Consideration of longer-run costs, over the time period that the rates will be in
12 effect, is necessary. In the following section I demonstrate graphically the
13 flaw of focusing on short-run analysis.

²⁸ USPS T-14, at 55-6.

1 **III. ECONOMETRIC ISSUES**

2 **A. Witness Bradley Should Have Used The Pooled Regression Model In Place**
3 **Of The Fixed Effects Model**

4
5 The choice of model is crucial in determining the outcome of witness
6 Bradley's study. Responses to the P.O.'s Information Request No. 4 highlight the
7 importance of model choice.²⁹ The computed variabilities using witness Bradley's
8 data for mail processing activities are generally in the neighborhood of 100 percent
9 for pooled data; they are substantially lower for the fixed effects cases. Accordingly,
10 a key question is which econometric method is best for estimating the relationship
11 between hours of labor incurred and the exogenous causal variables.

12 Witness Bradley states that he considered three choices for the modeling of
13 the panel data: a pooled model, a fixed effects model, and a random effects model.
14 A pooled model analyses the panel data set as being homogeneous across
15 facilities. There will be one intercept with the axis of the dependent variable. For
16 the fixed effects model, a vector "alpha sub i" allows for site specific effects to take
17 into account differences between facilities. This results in multiple heterogeneous
18 intercepts for the dependent variable axis but homogenous slopes for the
19 independent variable. For the random effects model, facility specific characteristics
20 are modeled as stochastic variables. Witness Bradley rejects this approach.

²⁹ Tr. 11/5427-9.

1 Witness Bradley testifies that he opted for a fixed effects model in order to
2 allow for site-specific effects, accounting for significant non-volume variations across
3 facilities. In his fixed effects estimate, witness Bradley relies on the work of Dr.
4 Hsiao; witness Bradley's approach is that of Case 1 on page 6, in Dr. Hsiao's book.³⁰
5 This case hypothesizes regression lines based on panel data with multiple alpha
6 intercepts—one for each site location. That is, the alpha intercepts of the regression
7 lines are heterogeneous but the slopes are homogeneous across locations. Each
8 alpha sub i, the intersection with the y axis in two dimensional space, is associated
9 with a specific regression; the regressions have common slopes but differing y
10 intercepts.

11 I am not disputing the accuracy of Dr. Hsiao's work. As a monograph
12 published by the Econometric Society, the work is definitive. Rather, I want to make
13 clear that I disagree with witness Bradley's decision to apply the fixed effects
14 approach to the specific case under consideration in estimating the hours/TPH
15 relationship. I conclude that each of the "alpha sub i" in witness Bradley's method
16 relates to a short-run, "monthly" facility specific cost relationship. In specifying his
17 underlying theoretical framework, witness Bradley has discussed short term
18 changes. Based on the model chosen from Dr. Hsiao, as well as witness Bradley's

³⁰ Cheng Hsiao, Analysis of Panel Data, New York, Cambridge University Press, 1986, at 6.

1 testimony, I believe that witness Bradley has presented a set of short term cost
2 equations that are inappropriate for measuring the variability of mail processing
3 costs in this proceeding.

4 The nature of short-run changes in production is that incremental output can
5 usually be obtained with relatively minimal increases in resources. However, the
6 measurement of changes in labor with short-run changes in output is irrelevant for
7 the purposes of this proceeding. The relevant measurement of cost incidence
8 should focus on the expansion path reflecting expansion or contraction of the scale
9 of the facility in the foreseeable future, as incremental labor is altered or additional
10 capital equipment installed as a result of the Postal Service's ongoing capital
11 expansion. Based on the information in witness Bradley's testimony, it is clear that
12 significant expansion of capacity at a facility can occur in a period ranging from
13 several months to possibly a year. Accordingly, the longer-run time frame under
14 discussion is well within the period during which these rates are likely to be in effect.

15 A visual inspection of plots of the underlying data substantiates my comments
16 that the pooled regression approach is a better modeling of the data and that the
17 data do not substantiate the fixed effects approach. In my exhibit OCA 602, one
18 observes a variety of data plots for a number of the mail processing activities. For a
19 selection of activities, hours and TPH were plotted on a combined basis for all years
20 and for all facilities. The plots for a given activity are based on all of the data which

1 were inputs to witness Bradley's equations. The data plots drawn from witness
2 Bradley's data suggest a variability approaching 100 percent for many of the
3 activities.

4 For purposes of exposition, Diagram 1, below, presents four facility specific
5 short term equations represented by the lines on the diagram (labeled A, B, C, and
6 D). These equations are hypothesized for a common activity at four different sites.
7 Accordingly, each equation relates hours and TPH at a different facility for an
8 activity. The cost equations are of the form and nature estimated by witness
9 Bradley. Moving along one of the lines (A,B,C, and D) for a given facility, on a short-
10 run monthly basis, labor is not 100 percent proportional to TPH.³¹

11 For the hypothesized case under consideration, at a point in time each of the
12 four sites has a design capacity for a given activity. Each activity at a specific facility
13 has an optimum level of output for the activity. This hypothesized optimum level of
14 operation is denoted by a specific point, a "p" on each of the lines A,B,C, and D of
15 the diagram. The longer-run expansion path is the way in which changes in TPH
16 affect the need for labor hours over a longer time period. The optimum capacity of a
17 facility would be changed in adapting to longer term changes in TPH. This could
18 occur over a period of months, the time during which the rates would be in effect.

³¹ This is implicit because the regression lines A through D have a slope which causes them to intersect the y axis well away from the origin.

1 The expansion path is denoted by the connection of the points "p" and defines line E
2 on the graph.³² The equation of this longer-run expansion path should be estimated
3 in determining cost/volume variability. The set of points denoted "p", therefore,
4 delineates a somewhat longer-run cost relationship corresponding to line E in the
5 diagram. On an empirical basis, the plotted data in exhibit OCA 602 suggest that
6 such a line could be computed. The pooled regression equation has already been
7 furnished in a response to the Presiding Officer's request³³ and is a first
8 approximation to the equation represented as line E. The equation is based on
9 limited data, insofar as it does not consider the facility specific variables previously
10 mentioned.

11 Dr. Hsiao's Case 1 diagram presents a situation of heterogeneous intercepts
12 with a homogeneous slope. His diagram is essentially identical to Diagram 1 in this
13 testimony. Witness Bradley has estimated lines A,B,C, and D as the fixed effects

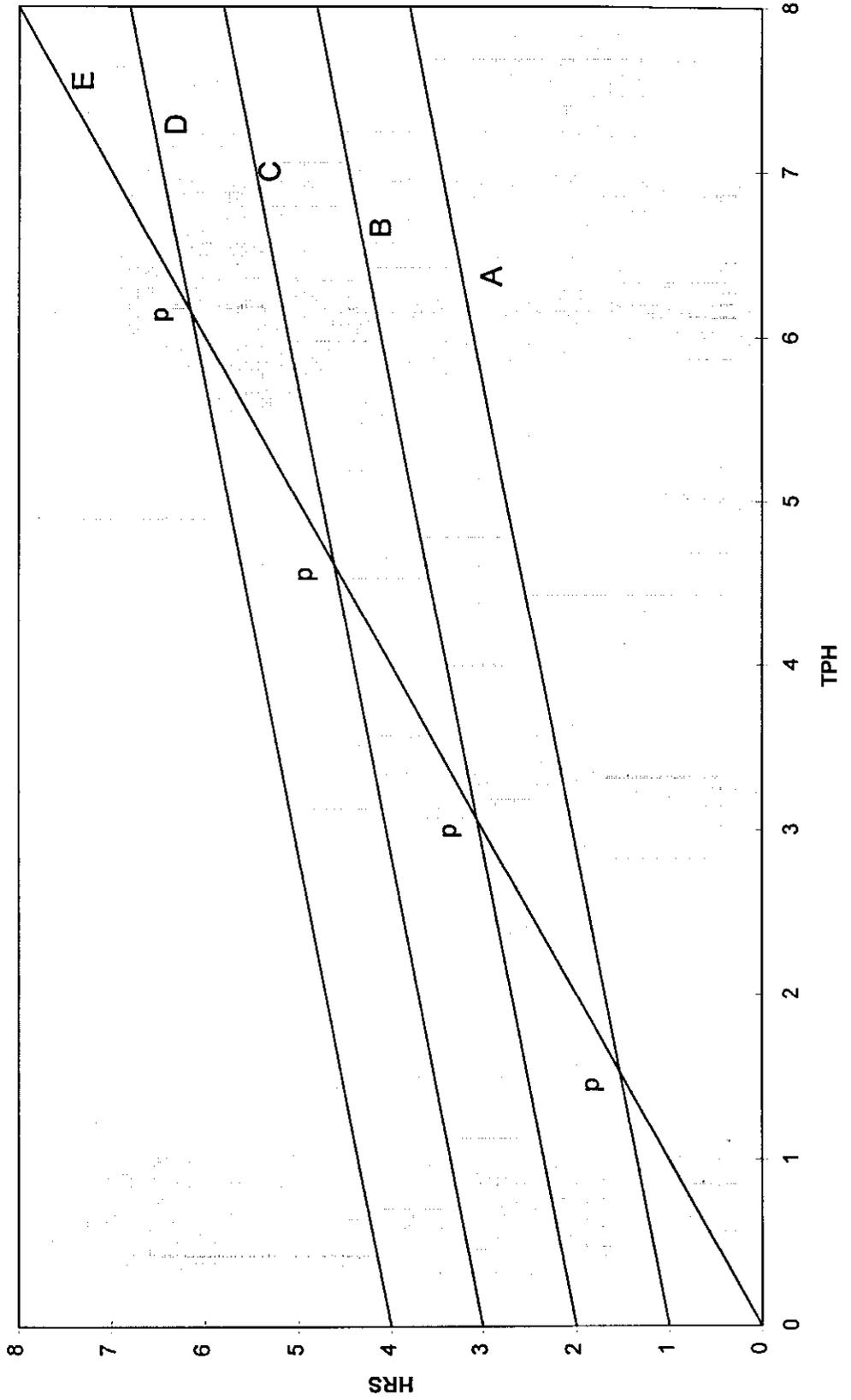
³² It should be noted that all lines are drawn for purposes of exposition, and that real world presentations frequently involve data plots that are less precise and ordered in their presentation.

³³ Tr. 11/5427-29 (P.O. Information Request No. 4, question 3.)

- 1 regression equations. However, it would be Line E in Diagram 1, a line which also
- 2 appears in Dr. Hsiao's diagram, figure 1.1,³⁴ that represents the relevant equation.

³⁴ Hsiao, *op. cit.*, at 7.

Diagram 1: Potential Cost Relationships



1 I conclude that line E of Diagram 1 is the correct line for purposes of
2 measuring the relationship between hours and TPH. Lines A, B, C, and D are short
3 term relationships between labor hours and TPH. One moves along the
4 hypothetical expansion path E by varying the size of the facility in terms of
5 employment, investment, or both.

6 By relying on factory floor data and by fitting factory floor data to a short-run
7 fixed-effects model, witness Bradley has guaranteed that he will obtain short term
8 results. This is why the pooled model, discussed in the previously mentioned
9 Presiding Officer's Information Request No. 4, is more relevant.

10 Witness Bradley's data are consistent with the data plot presented by the
11 Presiding Officer.³⁵ In response to questions about the data plot witness Bradley
12 indicated:

13 It looks to me like a blob of data with many, many data points,
14 and one's eye would be tempted to draw a straight line through it, but I
15 think that would be a mistaken inference, because the actual straight
16 line should come from an econometric regression. My experience has
17 been that when looking at simple plots they can be misleading. So I'd
18 be hesitant to say so.³⁶

19
20 He continued:

21 What these data plots would seem to imply are results which are
22 similar to my response to POIR 4 – I believe it is Question 4, it's

³⁵ Tr. 11/5580.

³⁶ Tr. 11/5581.

Revised
February 13, 1998

1 Question 3 or 4, where I produced econometric results for what is
2 known as a pooled model.

3
4 Econometric results for the pooled model give you a variability
5 of one, or in most cases a little bit greater than one, which could be
6 consistent with this plot.³⁷

7
8 The plots of the underlying data tend to substantiate the conclusion that the
9 pooled approach is correct.

10 **B. The Actual Data Plots By Facility Also Are Visually Compelling, Leading**
11 **To A Pooled Regression Model Conclusion**

12
13 The data presented in exhibit OCA 602 are visually compelling in demonstrating a
14 variability approaching 100 percent between labor hours and mail volume. In order
15 to assess empirically witness Bradley's selection of a regression line, I performed
16 additional data analyses on the activities and facilities. I chose the activities Manual
17 Flats, Manual Letters, OCR, and LSM. I first plotted the data on a site specific
18 basis. This resulted in hundreds of plots, *i.e.*, one for each location denoted by an
19 IDNUM (site location) for each type of activity. A selection of the plots is presented
20 in exhibit OCA 603. All plots are presented in library reference OCA-LR-9. There
21 are three types of plots. The first type of plot substantiates the A/B/C/D equation
22 form in Diagram 1. This array of plots would be expected in the short term for
23 specific facilities. The second type of plot corresponds to the line E in

³⁷ Tr. 11/5581-82.

Revised
February 27, 1998

1 Diagram 1. If witness Bradley's theory were correct, this array of plots would not be
2 expected.³⁸ Finally, some plots resemble a random "blob" of data. These "blob"
3 plots do not substantiate either a fixed effects model or a pooled model.³⁹

4 Since I have plotted actual data rather than having computed regressions,
5 the conclusions are visually compelling but not precise. It is clear, however, that the
6 underlying data plotted on a site by site basis substantiate both fixed effects
7 regressions and pooled regressions.⁴⁰

8 Exhibit OCA 603 also includes plots denoted as IDNUM 9999 for each
9 activity. IDNUM 9999 is not a specific location. Rather, each point in IDNUM 9999
10 for a specific activity represents a summation of all of the hours and TPH data for a
11 given location. Accordingly, a point on the IDNUM 9999 plot for a specific activity is
12 representative of the total hours and total TPH at a given site. The plotting of all of
13 the points together is representative of hours as a function of TPH, across sites for a
14 given activity. Assuming that a specific facility may operate either below or above
15 capacity, then total data for a site should be representative of overall operations at
16 the site. The plot of the summed data shows that the expansion path

³⁸ Such plots substantiate a variability approaching 100 percent between hours and TPH.

³⁹ A model can be forced through such plots, but such an exercise does not necessarily establish a relationship.

⁴⁰ In each case where I have summarized the form of a data plot, I have used informed judgment as to its shape.

Revised
February 13, 1998

- 1 for a specific activity appears to be approaching 100 percent variability, as could be
- 2 obtained in a pooled model. In performing additional analysis of the hours/TPH
- 3 relationship witness Bradley should consider the design capacity for each facility as
- 4 one of the exogenous drivers of hours, examining the impact on the hours/TPH
- 5 relationship as facility size changes.

1 **IV. DATA ASSUMPTIONS ARE NOT SUFFICIENT**

2 **A. Additional Variables Are Required**

3 A number of additional variables besides the time trend variable should have
4 been investigated for interaction with mail processing labor. As already noted, labor
5 usage does not stand alone. It is interdependent with a variety of technology,
6 capital, equipment, and management choices.

7 As part of a pooled regression effort, one could add additional explanatory
8 variables. Witness Bradley has agreed that this would be desirable:

9 More generally, if one would have a variable which was a
10 facility-specific characteristic that was non-volume—let's say age of
11 the facility—one could, if one had that data, enter a variable such as
12 age—as age of the facility as another (sic)—let's call it z variable—and
13 estimate its own coefficient in place of the alpha I, yes.⁴¹

14 Witness Bradley has used the alpha vector to model facility specific events.
15

16 However, I believe that the additional variables should be explicitly modeled:

17 Witness Bradley actually performed such an analysis with some of the variables he
18 considered, *i.e.*, the manual ratio and time variables. I believe that his analysis
19 needs to be extended.

20 By not analyzing additional variables across the facilities and over time for
21 their potential interaction with labor usage, witness Bradley's analysis is limited. It
22 fails to explain potentially major causal factors over the period during which the rates

⁴¹ Tr. 11/5549-50.

1 will be in effect. Witness Bradley needs to investigate additional variables affecting
2 mail processing labor expense. These variables include the age of the facility, the
3 magnitude of the facility support costs, the size of the facility (square feet of space
4 and/or number of people employed), the space utilization, the number of processing
5 activities, the types of mail processing equipment, the value of the equipment
6 located within a facility, and the quality of the work force. Some of these variables
7 are mentioned in witness Bradley's testimony and, separately, in his published
8 article "Performance in a Multiproduct Firm."⁴²

9 I have experience in the analysis of work processes. At General Electric's
10 Large Transformer Operation, I worked in a business which completely restructured
11 the factory and marketing processes. At the Logistics Management Institute, I
12 performed studies of the electronics and airframe businesses, with particular
13 emphasis on the organization of work flows for improved productivity. My work with
14 the Washington Gas Light Company involved the restructuring of major work
15 processes in information systems and marketing to achieve stated goals. In all of
16 this work I have observed that factors such as the flow of the production process,
17 the quality of the management, the types of activities performed near a given
18 activity, as well as the types, amounts, age, and utilization of capital equipment can

⁴² USPS-T-14, at 40-41. Michael D. Bradley, Donald M. Baron, "Measuring Performance in a Multiproduct Firm: An Application to the U.S. Postal Service," Operations Research, Vol. 41, No. 3, May-June, 1993, at 455.

1 have a large impact on a given work activity. Witness Bradley's analysis does not
2 study these factors and needs to add variables taking these factors into
3 consideration.

4 **B. The Mail Processing Analysis Confirms The Need For Additional**
5 **Variables**

6 A review of the mail processing operation substantiates the need for
7 consideration of additional data. Recently at the Merrifield, Virginia, Sectional
8 Center Facility (SCF), I observed the mail processing. It is my understanding that
9 the Merrifield SCF may be more technologically advanced than some of the other
10 mail processing facilities, but that the facility is, in general, representative. It is clear
11 that a variety of automated, technologically sophisticated activities are interwoven to
12 support the timely processing of mail. None of the activities truly stand alone in
13 terms of processing, labor requirements, investment characteristics, or efficiency.
14 Data to measure the impact of those variables on mail processing needs to be
15 evaluated.

16 Data for many of the variables which witness Bradley has discussed in his
17 article and which I have discussed should be available at the facility level. I would
18 expect that some of the data should also be available at the activity level. Where
19 data are lacking at the activity level, it would be appropriate to perform an analysis
20 to determine if facility level data are adequate. Alternatively, it may be necessary to
21 gather additional data.

1 **C. The Data Scrubbing Effort Needs Additional Analysis To Check The**
2 **Reliability Of The Procedures**

3
4 Data scrubbing is another area in which witness Bradley's work needs
5 additional research. Table 1 of USPS library reference LR-H-148 presents witness
6 Bradley's analysis of data used. A number of observations were eliminated for
7 many sites.⁴³ An additional analysis of scrubbed variables would be desirable to
8 answer the following types of questions: Was there inappropriate dropping of data?
9 Is an inordinate amount of data unreliable? If an inordinate amount of data is
10 unreliable, how reliable is the remaining data? By eliminating a number of outliers,
11 were the most efficient or important data eliminated, particularly in view of major
12 investment and automation efforts? In eliminating sites with fewer than 40
13 observations, were sites with major automation efforts eliminated? In addition, there
14 needs to be a discussion and statistical justification of the relevant number of
15 observations per site.

⁴³ USPS-LR-H-148, at 7.

1 **D. The Absence Of Non-MODS Data Potentially Biases The Conclusions**

2 Associated with the issue of data reliability is the absence of non-MODS data.
3 Witness Bradley uses data from MODS facilities and has presented no data from
4 non-MODS facilities. However, his conclusions are applied to mail processing at
5 non-MODS facilities which differ from MODS facilities. Witness Moden recognizes
6 there are many differences between MODS and non-MODS facilities and testifies
7 that non-MODS facilities are characterized by simpler sorting schemes, a smaller
8 workroom floor, clerks with greater personal knowledge of the local delivery area,
9 and a possibility of a steadier work flow.⁴⁴ He further recognizes that the factors
10 affecting volume variability include equipment, mail flows, performance of individual
11 clerks, and work-room floor size.⁴⁵ Nevertheless, witness Moden, in spite of his
12 agreement about the differences in characteristics between MODS and non-MODS
13 facilities, maintains that there are similarities in the work in terms of equipment and
14 work flows. He indicates, however, that he knows of no studies comparing mail
15 processing flows between MODS and non-MODS facilities.⁴⁶ Although there may
16 be similarities between MODS and non-MODS facilities, there are obviously

⁴⁴ USPS-T-4 at 22.

⁴⁵ Tr. 11/6052.

⁴⁶ Tr. 11/6053.

1 significant differences as well, and the impact of those differences on mail
2 processing is not presented.

3 Witness Degen testifies for FY 1996 that non-MODS offices accounted for
4 96,447 out of 386,617 employees in certain classifications.⁴⁷ Accordingly, non-
5 MODS offices appear to account for approximately 25% of the employment in
6 certain classifications, a very significant percentage that has been ignored in the
7 data collection process and consequently in the data analysis. There is agreement
8 that non-MODS offices are smaller; but there does not appear to be agreement
9 whether they are representative—opinions abound; studies are absent. Given
10 witness Moden’s testimony, it is reasonable to question whether MODS facilities are
11 in fact representative of non-MODS facilities.

⁴⁷ Tr.12/6354 (OCA/USPS-T12-64).

1 **V. COST ALLOCATION STANDARDS**

2 **A. The Study Does Not Meet Traditional Regulatory Standards**

3 In Principles of Public Utility Rates, Dr. James C. Bonbright articulated the
4 standards which a regulatory study should meet.⁴⁸ He identified eight evaluation
5 criteria. The criteria are applicable to witness Bradley's costing study, for the study
6 serves as a major input to the rate making process. Five of the eight criteria are
7 immediately relevant. In one form or another, Dr. Bonbright's criteria have been
8 widely applied by commissions—explicitly or implicitly—in the evaluation of
9 regulatory studies.

10 First, Dr. Bonbright advocated the "practical" attributes of simplicity,
11 understandability, public acceptability, and feasibility of application. Although the
12 econometrics and underlying modeling techniques in witness Bradley's testimony
13 are complex, the real issue from an understandability point of view is whether
14 witness Bradley's study is complete—*i.e.*, whether all of the modeling alternatives
15 have been adequately considered. It is important that the methodology employed is
16 understandable to informed individuals, particularly where, as here, the results are
17 contrary to past practice. One of my criticisms of the study is that the conclusions
18 are not consistent with the data. In fact, a simple plotting of the data of labor hours

⁴⁸ James C. Bonbright, Principles of Public Utility Rates, New York, Columbia University Press, 1961, at 291.

1 and total pieces handled (TPH) as presented in exhibit OCA 602 is at variance with
2 witness Bradley's major conclusions. Witness Bradley's testimony does not meet
3 the standards of simplicity, understandability, public acceptability, and feasibility
4 because it is incomplete.

5 Second, Dr. Bonbright advocated that proper interpretation of a study be free
6 of controversy. Witness Bradley's study does not meet this requirement. For
7 example, the data plot presented by the Presiding Officer indicated that a simple
8 "eyeballing" of the data suggests that costs are proportional to output.⁴⁹ Common
9 sense, based on a review of the data plot, suggests that the elasticity appears to be
10 approximately 1, which in the past has been the generally accepted estimate. I
11 have presented plots of the data in exhibit OCA 602 which are at odds with witness
12 Bradley's conclusions.

13 A third criterion for consideration is the stability of the rates, which are based
14 to a significant degree on the underlying costing studies. Witness Bradley's study
15 results in a reallocation of costs, and this could result in very different rates—not
16 necessarily in this case but quite possibly in future cases. Some types of activities
17 and classes of service would ultimately have decreased costs, and others would
18 have increased costs. Before the stability of the current rate structure is significantly
19 altered, it would be appropriate to verify that witness Bradley's study correctly

⁴⁹ Tr.11/5580.

1 attributes costs. The study does not reliably predict the correct causal connection
2 between hours and TPH and so does not provide adequate justification for changes
3 in costing methodologies.

4 A fourth criterion outlined by Dr. Bonbright is fairness in the apportionment of
5 total costs of service among the different consumers. Again, the incomplete and
6 inadequate methodology presented by witness Bradley renders the study
7 inappropriate for implementation because it probably apportions costs incorrectly. If
8 costs are not properly attributed to the classes or services responsible for those
9 costs then the rates derived from that attribution may cause some classes or
10 services to bear more than their fair share of the cost of the service.

11 A final basis for the evaluation of proposed methodologies is that rates
12 should promote efficiency by discouraging the wasteful use of services while
13 promoting all justified types and amounts of use. The economic theory of regulation
14 generally indicates that in reviewing and setting rates one of the goals is cost-based
15 rates to promote economic efficiency, defined as the correct allocation of scarce
16 resources. This is the objective of cost-based rates—to arrive at the proper pricing
17 of products. However, witness Bradley's study is incomplete and thus fails to
18 provide a proper foundation for cost-based rates. Accordingly, I do not believe that
19 witness Bradley's work meets the regulatory standards outlined by Dr. Bonbright.
20 The data plots in OCA 602 suggest that witness Bradley's conclusions are at

1 variance with the underlying data. The econometric applications need more work in
2 terms of theoretical analysis, choice of variables, and choice of estimation
3 procedures.

4 **B. Application Of The Study's Conclusions Would Be Contrary To**
5 **Requirements Of The Postal Reorganization Act**
6
7

8 Witness Bradley's study does not meet certain criteria set forth in the Postal
9 Reorganization Act which are similar to those I have just discussed with respect to
10 Dr. Bonbright. The Act provides that recommended postal rates and fees for each
11 class of mail or type of service must be in accord with the policies of the Act. These
12 policies include, among other things, that the rate schedule established and
13 maintained is fair and equitable,⁵⁰ and that each class or type of mail bear the direct
14 and indirect postal costs attributable to that class or type of mail.⁵¹

15 For all of the reasons previously stated concerning the deficiencies of witness
16 Bradley's study and its failure to quantify reliably the analysis of the causal
17 connection between labor hours and TPH, I believe the study apportions mail
18 processing costs incorrectly. If costs are not correctly attributed to the mail classes
19 and services, unfair and inequitable schedules could result. Also, the provision of
20 the Act requiring that each class or type of mail bear the direct and indirect postal

⁵⁰ 39 U.S.C § 3622(b)(1).

⁵¹ 39 U.S.C. § 3622(b)(3).

- 1 costs attributable to that class or type of mail would not be met. If witness Bradley's
- 2 methodology results in a failure to attribute correctly the direct and indirect costs to
- 3 the appropriate class or type of mail, then there would be no compliance with that
- 4 provision of the Act.

1 **VI. CONCLUSIONS**

2 I do not believe that witness Bradley has substantiated his conclusions
3 concerning volume variability. I conclude that a pooled regression approach with
4 additional data and economic analysis are needed. In addition to analyzing labor
5 hours, some consideration of investment costs is necessary. Such consideration is
6 important in view of the Postal Service's investment plans. I have also described
7 additional variables that should be considered in the study. Witness Bradley's focus
8 on monthly short-term costing needs to be extended to a longer term. In my view a
9 properly designed analysis would substantially alter witness Bradley's conclusions.
10 Furthermore, the absence of non-MODS data from the analysis may bias the
11 conclusions. Therefore it is premature to use his analysis as a basis for establishing
12 the attribution levels of mail processing labor costs.

EXHIBITS

QUALIFICATIONS

J. EDWARD SMITH, JR.
5004 OAKCREST DRIVE
FAIRFAX, VIRGINIA 22030
HOME: (703) 352-7810 MJSMITH2 @ aol.com

Economist: Experienced in applied microeconomics, investment project evaluation, marketing, planning, business analysis, computer applications, statistics, and government/business regulatory interface. Successful expert witness, consulting, and project management skills.

CONSULTANT, 1997. Practice is focused on regulatory analysis, marketing, and utilities. For example, for a major client conducted study on opportunities from deregulation.

CUSTOMER SERVICE IMPROVEMENTS: For Price Waterhouse managed a study focused on telephone call centers.

DIRECTOR, MARKET PLANNING AND ANALYSIS, WASHINGTON GAS, 1987-97.

FINANCIAL/INVESTMENT ANALYSIS: Increased return from 8% to 11-14% on \$100 million investment budget by instituting financial and economic marketing reviews to upgrade profitability.

PRICING AND MARKET ANALYSIS: Achieved a 30% improvement in costing and pricing of electricity rates by developing improved marginal cost, supply, and demand models for two major electric utilities, permitting the analysis of power pool and stand alone operations.

COST/BENEFIT BUDGET ANALYSIS: Eliminated fifteen percent over-run surprises in the total Marketing Budget by developing procedures for tying expenditures to results.

PLANNING: Increased Company's market share from 35% to 70% in supplying natural gas to the new home construction market by developing a planning process that generated accurate forecasts of market potential and built cross-functional commitment and teamwork to achieve higher marketing goals.

EXPERT WITNESS: Retained over \$25 million of yearly profits by developing an economics/market research and pricing capability able to establish credibility before regulatory agencies and to win twelve rate proceedings in contesting the rate structures of major competitors. Also managed the preparation and appearances of other witnesses.

CUSTOMER SEGMENTATION/MARKET RESEARCH: Added \$5 million of new business income each year by developing a geographic information database that segmented customers by demographics, preferences, and lifestyles.

COMPUTER PROCEDURES: Achieved 80% reduction in the backlog of requests on mainframe legacy systems by developing new operating procedures.

COMPUTERS: Computerized and networked competitive databases to provide immediate access to competitive information, reducing decision making times. Computer skills include SAS, Excel, Lotus, RBASE, Word, Word Perfect, and others.

SALES: Added over \$46 million of profit at a cost of \$13 million, improved the Company's competitive edge, and enhanced trade relationships by creating the Integrated Resource Planning Operation--which pioneered new marketing approaches to target incremental gas sales, and which promoted the installation of higher efficiency gas equipment.

HUMAN RESOURCES DEVELOPMENT: Became the major internal supplier of new management talent for the Company by motivating and training new marketing personnel--resulting in the achievement of a promotion rate three times that of other areas of the Company.

FINANCIAL/ECONOMIC ANALYSIS: Designed a strategic model of corporate operations to forecast the impact of marketing and customer service decisions on earnings per share, rates of return, and market position. Used the model to achieve penetration of new markets with up to a doubling of profits in some products.

PUBLIC POLICY AND REGULATORY INTERFACE: Defused a poisonous regulatory climate with important government stakeholders while representing the Company before regulatory panels, committees, and working groups.

COMPETITIVE ANALYSIS: Collection of competitive data obtained a competitive advantage against six major competitors.

MANAGER, POWER SYSTEMS BUSINESS, GENERAL ELECTRIC, 1976-87.

SALES TURNAROUND/COST REDUCTION: Improved profits by \$3 million by developing the first reliable market forecasts which were used to balance the factory production schedule, cut costs, and to implement the first price increase in three years.

COMPUTERS: Saved \$500,000 per year at a one time equipment cost of \$50,000 by migrating the mainframe customer database--used as the basis for all market pricing and strategy--to PC applications.

COST/BENEFIT ANALYSIS: Forestalled potentially disastrous cost increases of up to 40% in a \$2 Billion consumer appliance market by developing low-cost alternatives to proposed product requirements necessitated by government regulations.

BUSINESS DEVELOPMENT: Demonstrated to management the advantages of entering a new \$5 Billion market in electric utility power plant life extension by showing that the development of a plant retrofit program could counterbalance the sales decline in new electric utility construction.

STRATEGIC CHANGE: "Alternative U.S. Energy Futures" project showed the need for major changes in business product mix, resulting in the development of new and successful sales thrusts to offset low sales growth in existing products.

DIRECTOR OF ECONOMICS, NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS, 1974-76.

PRODUCTIVITY IMPROVEMENT: Initiated studies of utility rates, cost performance, and investment trends. The studies received extensive coverage in the press.

RESEARCH ASSOCIATE, LOGISTICS MANAGEMENT INSTITUTE, 1972-74.

COMPETITIVE ANALYSIS: Identified achievable savings of 15% in prices for high technology equipment through increased competition, second sourcing, and Design-to-Cost.

EFFICIENCY ANALYSIS: Study of the aircraft industry for the Department of Defense identified achievable savings of over \$1 billion per year through improved plant consolidation.

ASSISTANT PROFESSOR, UNION COLLEGE, 1969-72. Taught statistics and managerial economics at the undergraduate level and in the Master of Science in Industrial Administration program, targeted at mid-career professionals.

EDUCATION: Manager Development Course, GE, Crotonville, 1980.
Ph.D., Economics, Purdue University, 1969. A.B., Economics, Hamilton College, 1965.

PRESENTATIONS.

Least Cost Planning and Gas Utilities: Balancing the Theories and Realities, seminar, 1989

Eastern Utilities Group, Eastern Regional Business and Economics Utilities Conference, "Competition between Natural Gas and Electricity," April 11, 1990.

AGA/SGA Market Research Seminar, "Overview of Applied Market Research," Nashville, Tennessee, May 3, 1990.

"Conservation and Load Management: The Promise of Tomorrow," National Regulatory Conference at Marshall-Wythe School of Law, May 14, 1992.

National Petroleum Council, Natural Gas Study, November 1992. Major contributor to demand analysis for mid Atlantic Region and National Analysis for Residential and Commercial Customers.

"Painting the Electric and Gas Picture," Presentation to the 19th Annual Rate and Regulatory Symposium on Resource Planning, Incentives and Pricing, University of Missouri Extension Conference Office, Westin Crown Center, Kansas City, Missouri, April 27, 1993.

"Integrated Resource Planning," Presentation on IRP, Fuel Switching, and Demand Side Management, DOE/NARUC National Conference on Natural Gas Use, New Orleans, Louisiana, April 26, 1993.

"Least Cost Planning," Southern Gas Association Corporate Telelink Network, Integrated Resource Planning Broadcast, October 21, 1993.

American Gas Association, "IRP: The Road to Buy-In," Presentation to AGA Seminar on Integrated Resource Planning, Arlington, Virginia December 8, 1993.

Associated Gas Distributors Operating Committee, Presentation on IRP: "Solving the conservation Puzzle," February 8, 1994, Washington, D.C.

"The Business Economist at Work: Washington Gas," in Business Economics, July 1996, Volume XXXI, Number 3.

"Forecasting and Risk Management," EPRI Conference on Forecasting in a Competitive Electricity Market, November 11, 1997.

TESTIMONY AND CASES DISTRICT OF COLUMBIA

F.C. No. 834, Phase II: Case that established Integrated Resource Planning as a requirement, with conservation goals, efficiency criteria, and extensive data and study requirements. Resulted in a variety of programs, analyses, and working group efforts.

F.C. No 834, Phase II, Integrated Least Cost Plan, Fifteen Volumes, 1990

F.C. No. 870, 1988. Rate Case.

F.C. No 834, Phase III, Integrated Least Cost Plan, Twelve Volumes, 1992.

F.C. No 889, 1990; testimony focused on marginal costs, rate structures, and summer/winter differentials .

F.C. No. 905, 1991; focused on rating periods, marginal costs, and rate structures.

F.C. No. 917, 1992; review of PEPCO Least Cost Plan; Focused on power pools as related to electric marginal costs.

F.C. No. 921, Integrated Least Cost Plan, Seven Volumes, 1994. Review of programs, modeling efforts, and plans.

F.C. No. 921, Integrated Least Cost Plan, 1996. Two Volumes.

F.C. No. 922, Washington Gas Base Rate Proceedings, 1992.

F.C. No. 934, Before the Public Service Commission of the District of Columbia, 1994

MARYLAND

Case No.. 8284, In the Matter of the Complain, Potomac Electric Power Company vs. Maryland Natural Gas, 1990.

Washington Gas, Case No. 8251, 1990. Focus on electric utility rates, marginal costs, power pools, and summer/winter differentials.

Washington Gas, Case No. 8315, 1991. Issues in Case 8251 further litigated in view of changing cost structures.

Washington Gas, Maryland Division, Integrated Resource Planning Status Report, 1994.

Washington Gas, Maryland Division, Conservation Status Report, 1994, 1995.

Washington Gas, Maryland Division, Case No. 8720, In the Matter of the Cost-Effectiveness of Washington Gas Light Company's Demand-Side Management Programs

Pepco Complaint against Maryland Natural Gas. Case 8284, 1990. Complaint over issues related to block rates, connection fees, gas supply costs. Complaint dismissed.

VIRGINIA

Washington Gas, Virginia Division, Status Report of Washington Gas CLM Activities, 1995

Washington Gas, Virginia Division, Status Report of Washington Gas CLM Activities, 1996.

Washington Gas, Virginia Division, Case No.. PUE920041, 1993.

OCA 601
Page 7 of 7

NVNG Protest, Energy Saver Home Tariff. 1990. Filed comments in opposition to program.

NVNG Protest, Heat pump promotional Program; 1990

NVNG Protest, Co-op Advertising Program; 1991.

NVNG Protest, Service Connection Policy Revisions, 1992.

Potomac Edison Case No. PUE900009, Electric Add on Heat Pumps.

Virginia Case No. PUE900070, Conservation and load Management Case. 1992.

WEST VIRGINIA

Potomac Edison, Case 90-046-E-PC, Potomac Edison filing for electric add-on heat pumps. Developed testimony for Washington Gas witness.

PLOTS OF WITNESS BRADLEY'S DATA

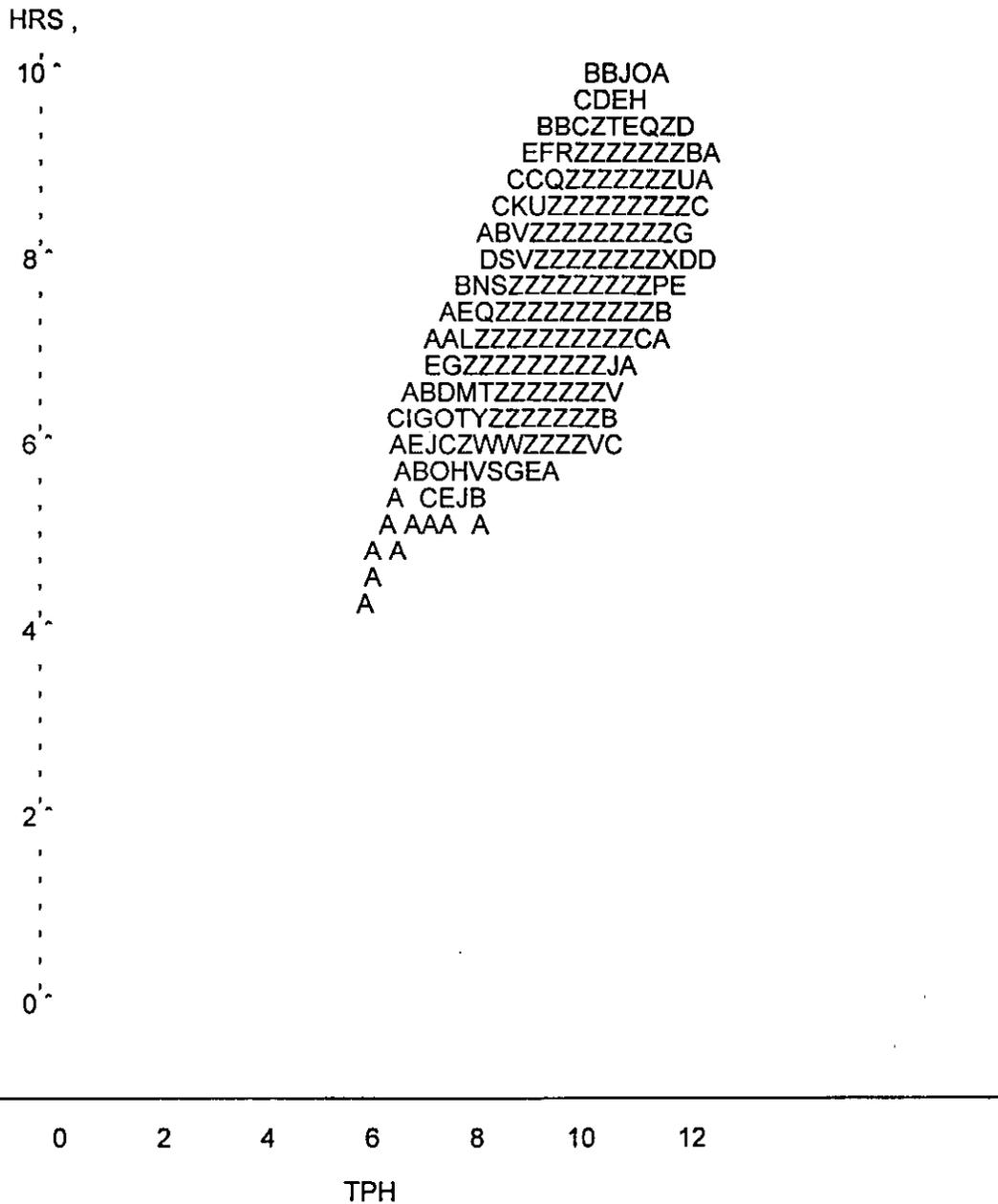
This exhibit presents plots in log form of labor hours and total pieces handled (TPH). The data were generated using witness Bradley's computer programs and data, found in library references USPS-LR-H-148 and LR-H-149. In order to generate the data, the programs in the library reference USPS-LR-H-149 were slightly modified, for purposes of running them on personal computers and for purposes of generating plots. The modified programs and data output for this exhibit are contained in OCA-LR-8.

Plots for the following activities were generated: OCR, BCS, LSM, Manual Letters, Manual Flats, SPBS Non-Priority, and Manual Priority. Due to time constraints a limited number of activities based on witness Bradley's data were plotted.

The plots which have been developed up to this point indicate the need to reexamine the estimating procedures in witness Bradley's study. A simple plotting of the data demonstrates the data are not consistent with witness Bradley's conclusions. In general, the plots are consistent with a cost elasticity of one. They are also consistent with the pooled data analysis, discussed in the testimony. Therefore, adoption of witness Bradley's conclusions would be inappropriate at this time.

OCR OPERATIONS
DATA IN LOGS

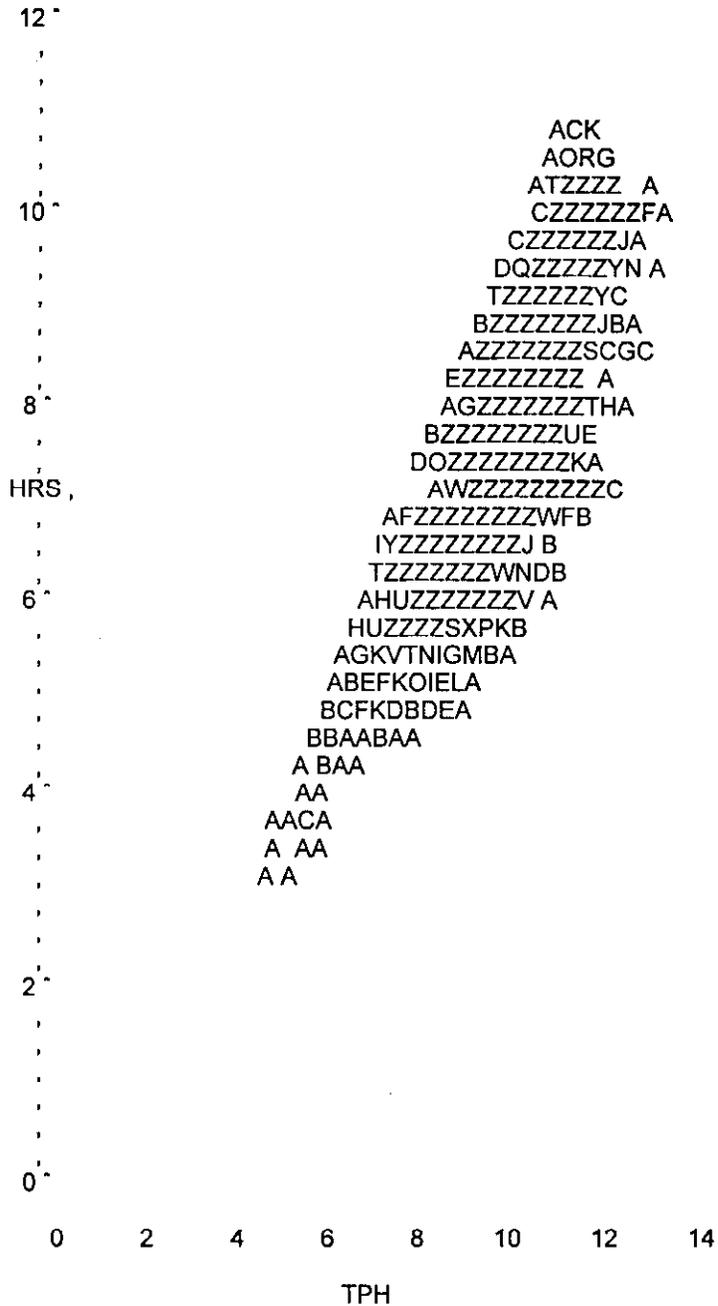
Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.



NOTE: 15131 obs hidden.

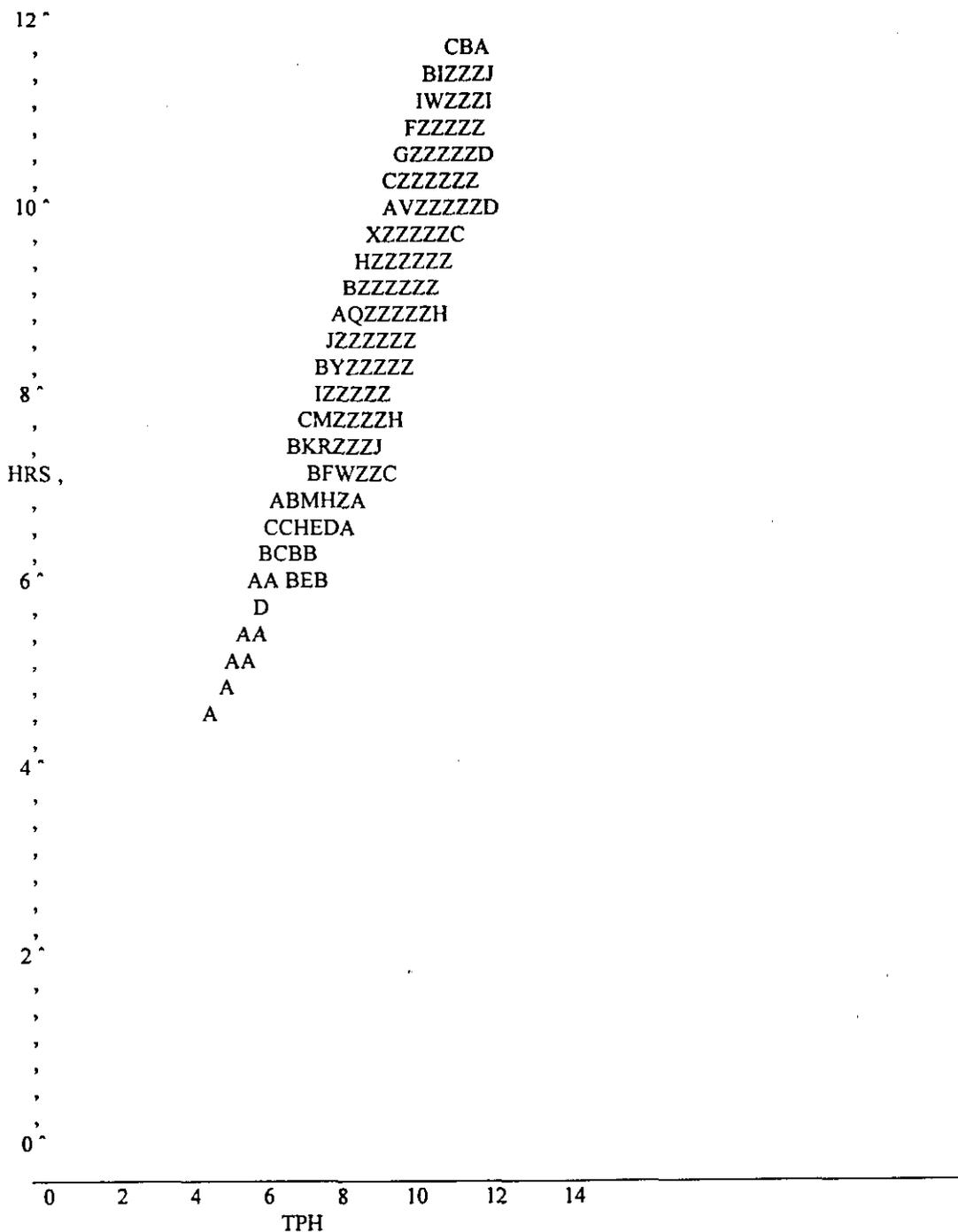
BCS OPERATIONS
DATA ARE IN LOGS

Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.



NOTE: 18818 obs hidden.

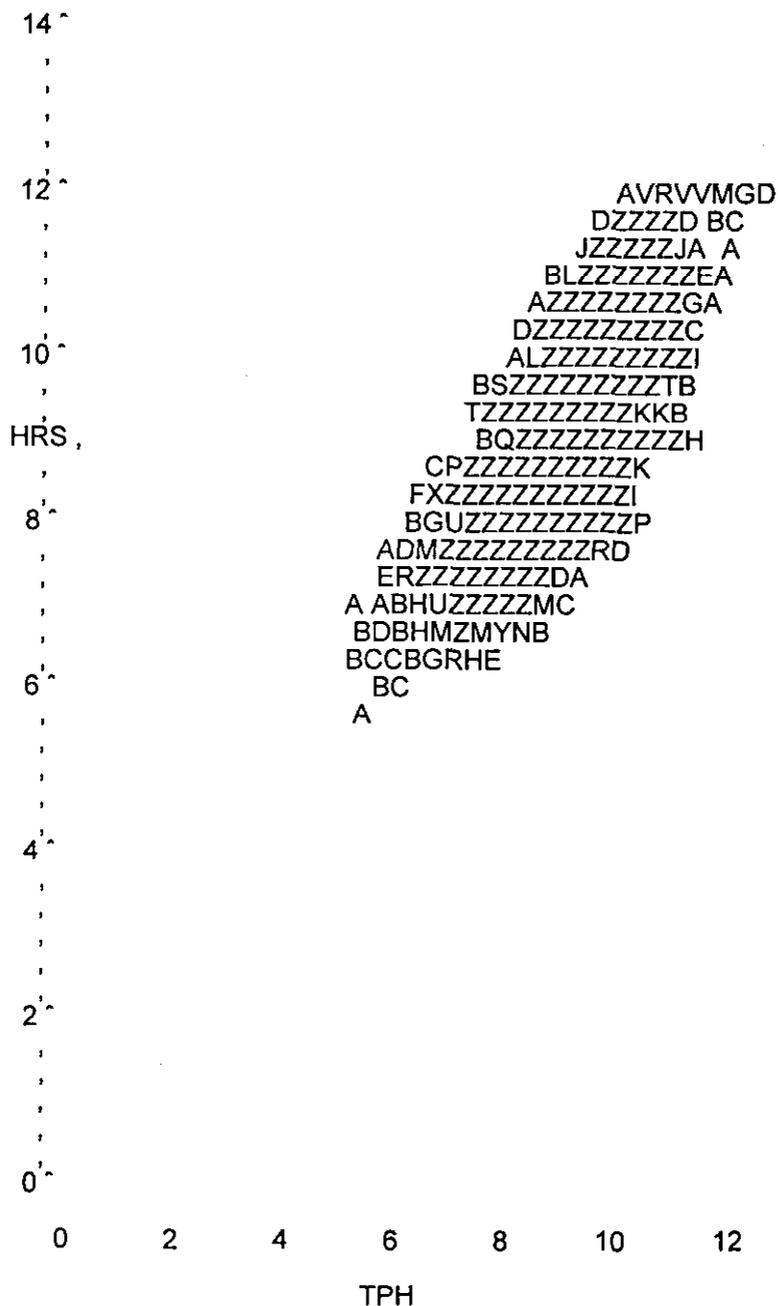
LSM; DATA IN LOGS
 Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.



NOTE: 17382 obs hidden.

MANUAL LETTERS
DATA IN LOGS

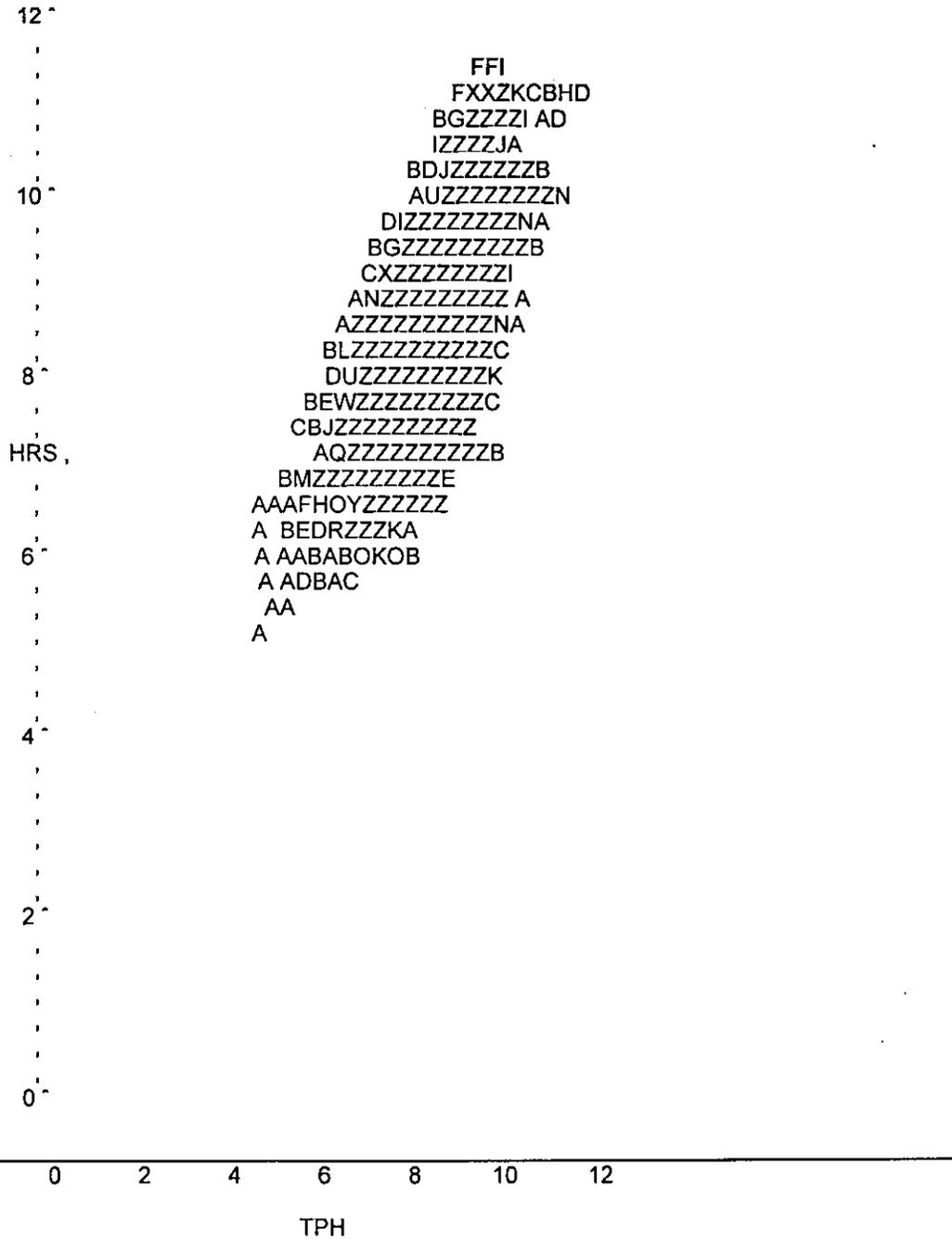
Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.



NOTE: 20872 obs hidden.

MANUAL FLATS
DATA IN LOGS

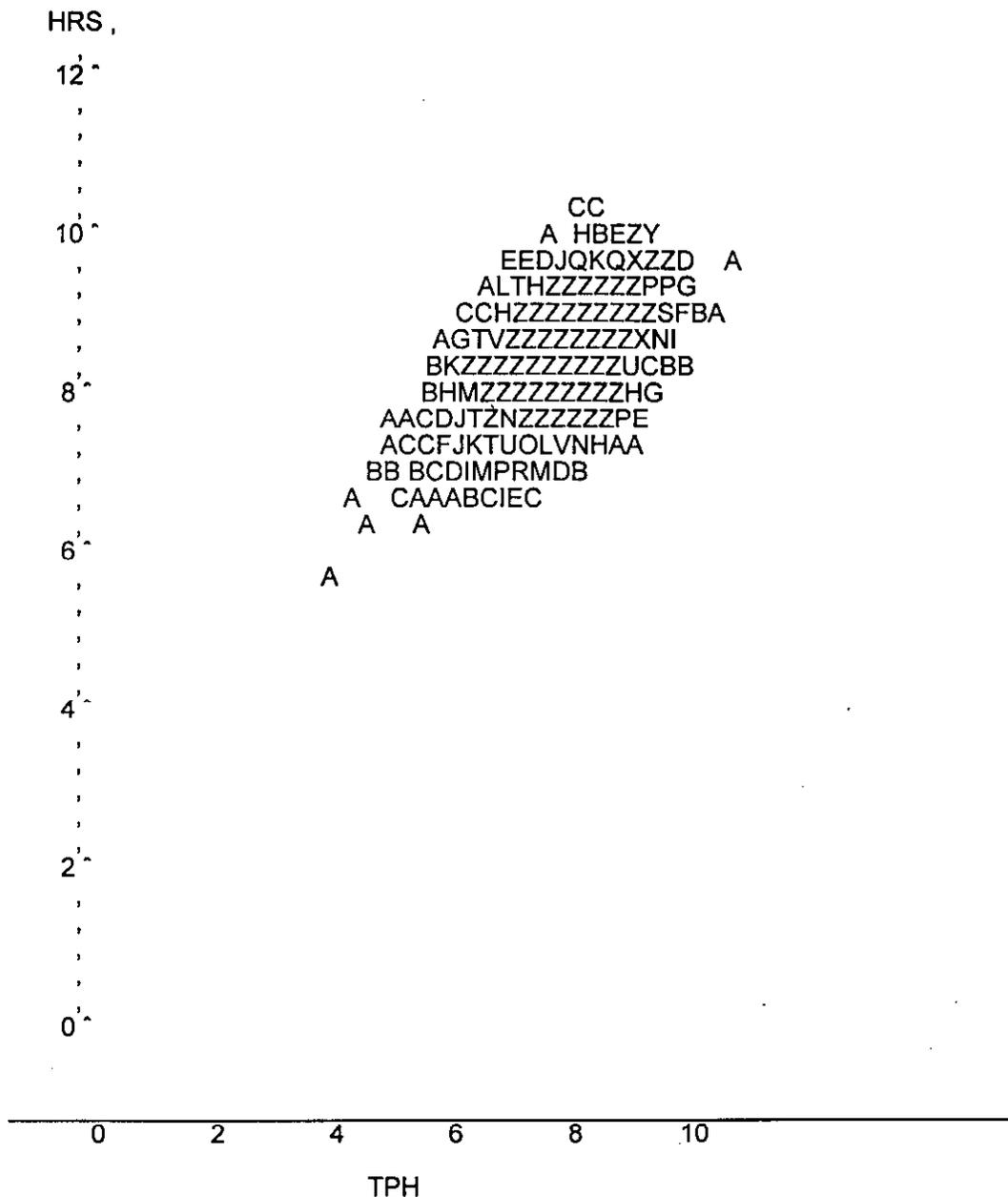
Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.



NOTE: 19918 obs hidden

SPBS NON-PRIORITY
DATA IN LOGS

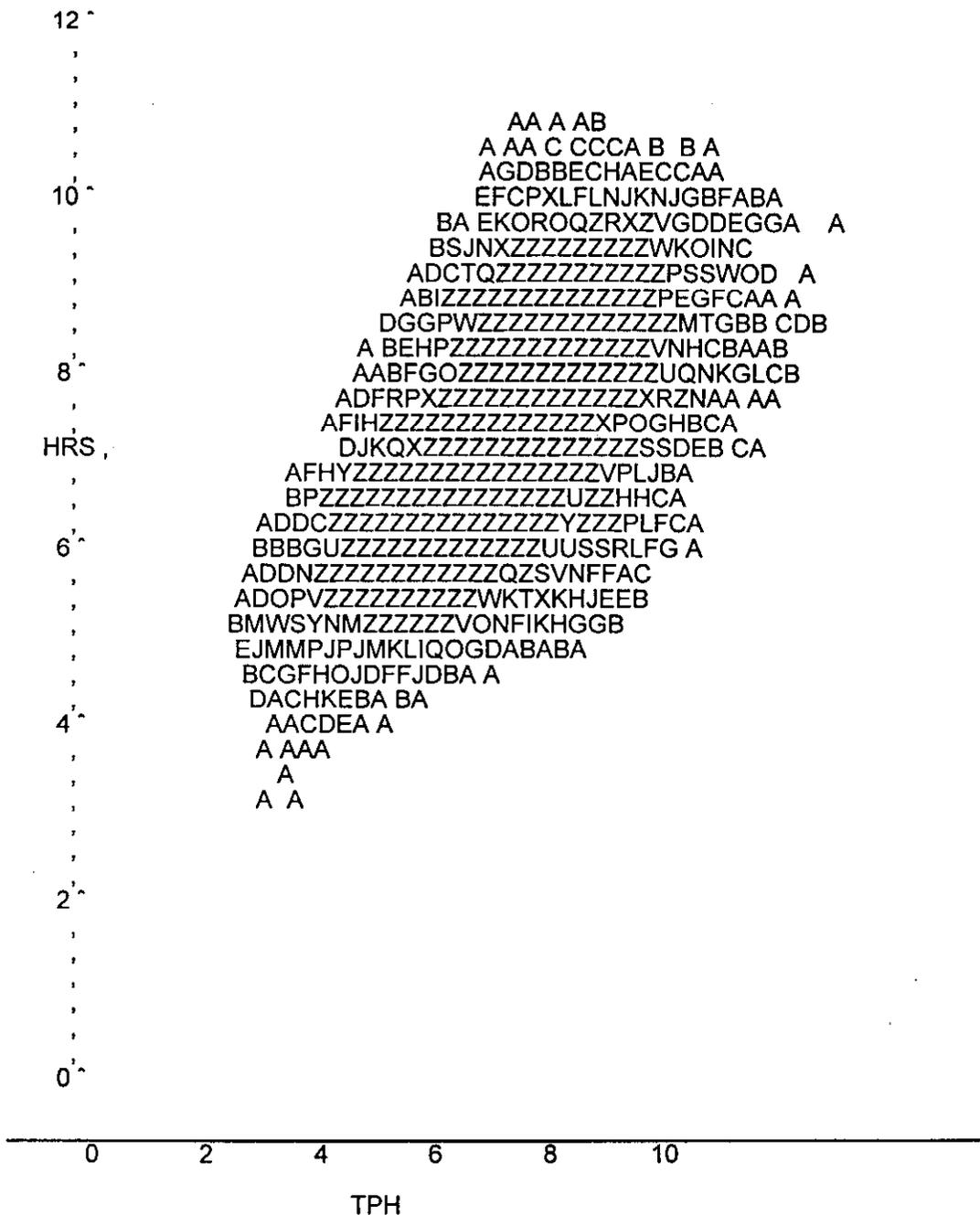
Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.



NOTE: 2522 obs hidden.

PLOTTED DATA ARE IN LOG FORM
MANUAL PRIORITY; DATA IN LOGS

Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.



NOTE: 7604 obs hidden.

REPRESENTATIVE ACTIVITY PLOTS BY SITE AND BY TOTAL

This exhibit consists of plots of data for four mail processing activities.¹ Time constraints limited the number of activities considered. Witness Bradley has computed the following cost elasticities for each of the types of plotted activities:

Manual Letters: .7718

Manual Flats: .7479

OCR: .6281

LSM: .8687

Traditionally there has been an assumption of a cost elasticity value of one; accordingly, witness Bradley's conclusions represent a proposed departure from previously accepted practices.

Based on witness Bradley's data and programs, presented in USPS-LR-H-148 and USPS-LR-H-149, I developed a number of plots on an activity basis relating hours and TPH at each site in order to explore how the underlying data seem to relate to witness Bradley's conclusions. Econometric procedures develop precise relationships with a dependent variable as a function of one or more independent variables. Whether such a relationship is accurate depends on whether the assumed relationship exists and is in the form hypothesized. Accordingly, a plotting of the data verifies to some degree the relationship between two variables, other things being equal.

A plotting of data points which ultimately has a positive intercept on the dependent variable, the hours-axis, is consistent with witness Bradley's fixed effects conclusions. A plotting of data points which result in a blob of data is not indicative that the fixed effects (or any other approach) is consistent with witness Bradley's conclusions. Finally, a plotting of data points essentially through the origin is consistent with the pooled case. In each of the three cases, absent a computed regression line, the analyst uses judgment in determining the appearance of the data plots.

¹ Witness Bradley considered a total of twenty five activities: MODS Sorting—eleven activities; MODS Allied Activities—four activities; BMC Sorting—six activities; BMC Allied Activities—two activities; and Remote Encoding and Registry—two activities.

OCA 603
Page 2 of 19
Revised
2/13/98

Each computer program run for an activity resulted in hundreds of graphs—one for each of the sites. For each activity I present four of the graphs generated by the computer program. I selected representative graphs. All graphs generated for an activity along with the relevant computer programs for this exhibit are presented in OCA-LR-9.

For each of the four types of activities presented in this exhibit the basis for the selection of the four graphs is as follows. Three of the graphs for each activity are for specific locations and illustrate that a variety of data patterns form the underlying data used in the study. The three types of plots by location include,

- a plot that is in good agreement with a fixed effects regression.
- a “blob” type of plot, indicating that for the location under consideration there does not appear to be a clear data relationship; and
- a plot that is in good agreement with a pooled effects regression such as presented by but not endorsed by witness Bradley in response to the Presiding Officer’s Information Request #4.

A summary of the three types plots mentioned above follows:

Manual Letters

Plot for IDNUM=8195: Consistent with Fixed Effects.

Plot for IDNUM=3361: Consistent with Blob.

Plot for IDNUM=242: Consistent with Pooled Effects as found in POIR#4.

Manual Flats

Plot for IDNUM=1374: Consistent with Fixed Effects.

Plot for IDNUM=3593: Consistent with Blob.

Plot for IDNUM=5255: Consistent with Pooled Effects as found in POIR#4.

OCA 603
Page 3 of 19
Revised
2/27/98

OCR

Plot for IDNUM=9961: Consistent with Fixed Effects.

Plot for IDNUM=2467: Consistent with Blob.

Plot for IDNUM=621: Consistent with Pooled Effects as found in POIR#4.

LSM

Plot for IDNUM=7346: Consistent with Fixed Effects.

Plot for IDNUM=4347: Consistent with Blob.

Plot for IDNUM=2375: Consistent with Pooled Effects as found
in POIR#4.

The fourth graph for each activity is designated as IDNUM 9999. One graph of this type has been printed for each activity. There is, however, no location cited for IDNUM 9999. Rather, IDNUM 9999 is a computed set of data. The plot for IDNUM 9999 has a number of points. Each point summarizes the summation of the total hours of mail processing labor and the total TPH at a specific site. All of the data points—one per site—are then plotted. The data plotted in the graph of IDNUM 9999 are therefore based on all of the sites for a specific activity data set, with hours and TPH summed for each site.

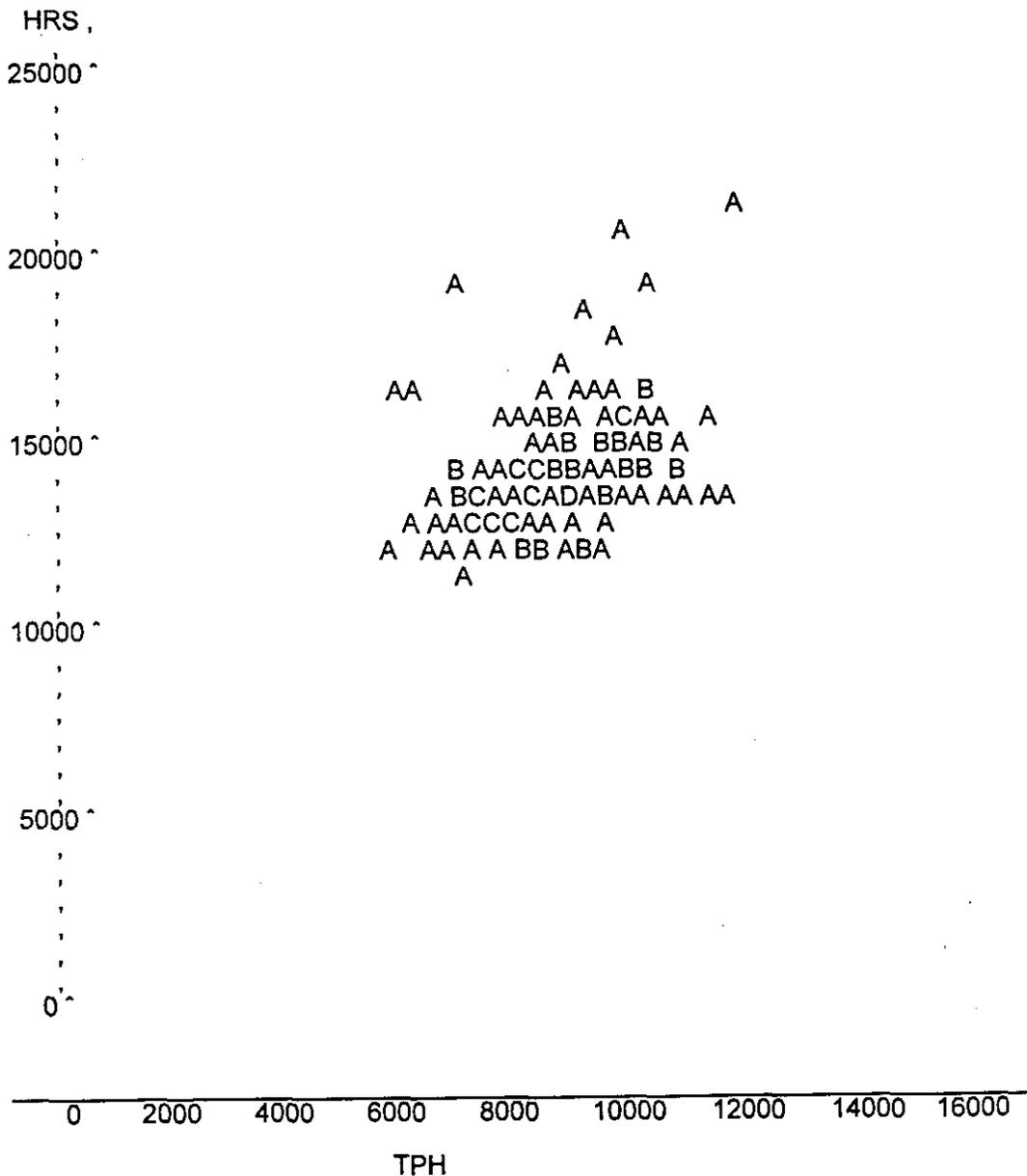
OCA 603
Page 4 of 19
Revised
2/13/98

MANUAL LETTER OPERATIONS/ HOURS ON TPH
USING ONLY CONTINUOUS DATA FROM 8801-9613
INCLUDING OFFICES @ LEAST 39 OBS/LAG MODEL

Plotted by Site

----- IDNUM=242 -----

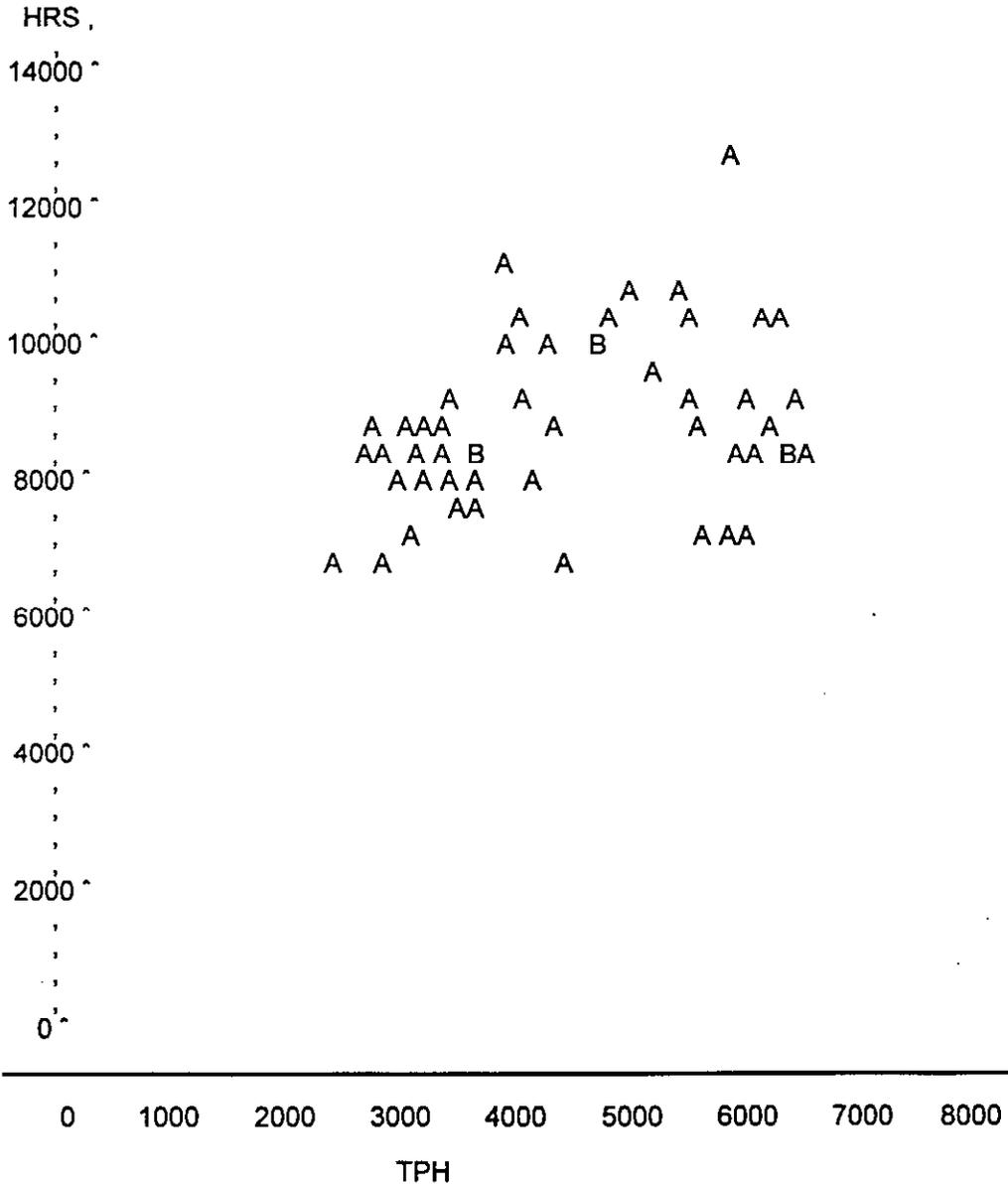
Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.



MANUAL LETTER OPERATIONS/ HOURS ON TPH
USING ONLY CONTINUOUS DATA FROM 8801-9613
INCLUDING OFFICES @ LEAST 39 OBS/LAG MODEL
Plotted by Site

----- IDNUM=3361 -----

Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.

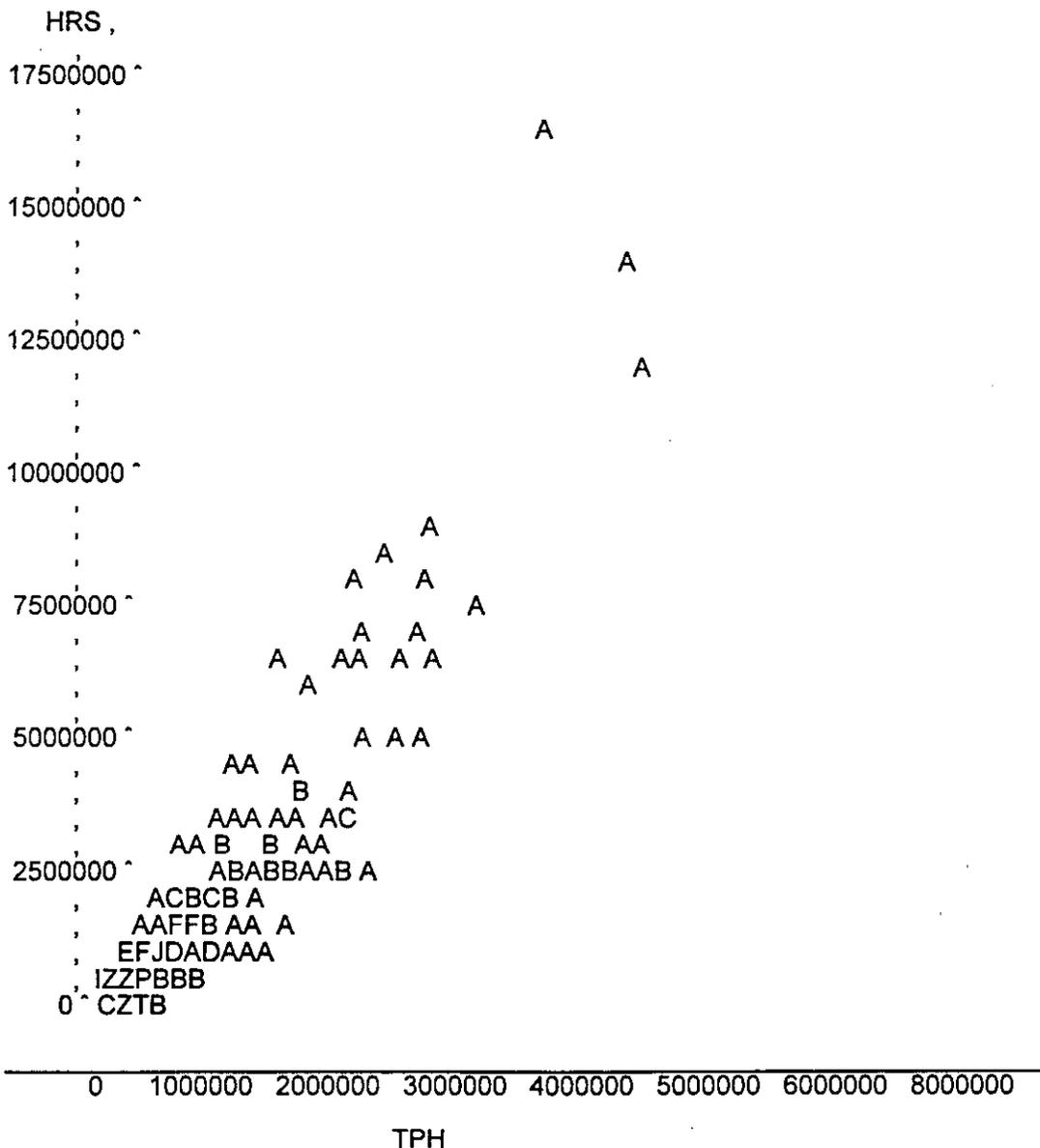


OCA 603
 Page 7 of 19
 Revised
 2/13/98

MANUAL LETTER OPERATIONS/ HOURS ON TPH
 USING ONLY CONTINUOUS DATA FROM 8801-9613
 INCLUDING OFFICES @ LEAST 39 OBS/LAG MODEL
 Plotted by Site

----- IDNUM=9999 -----

Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.

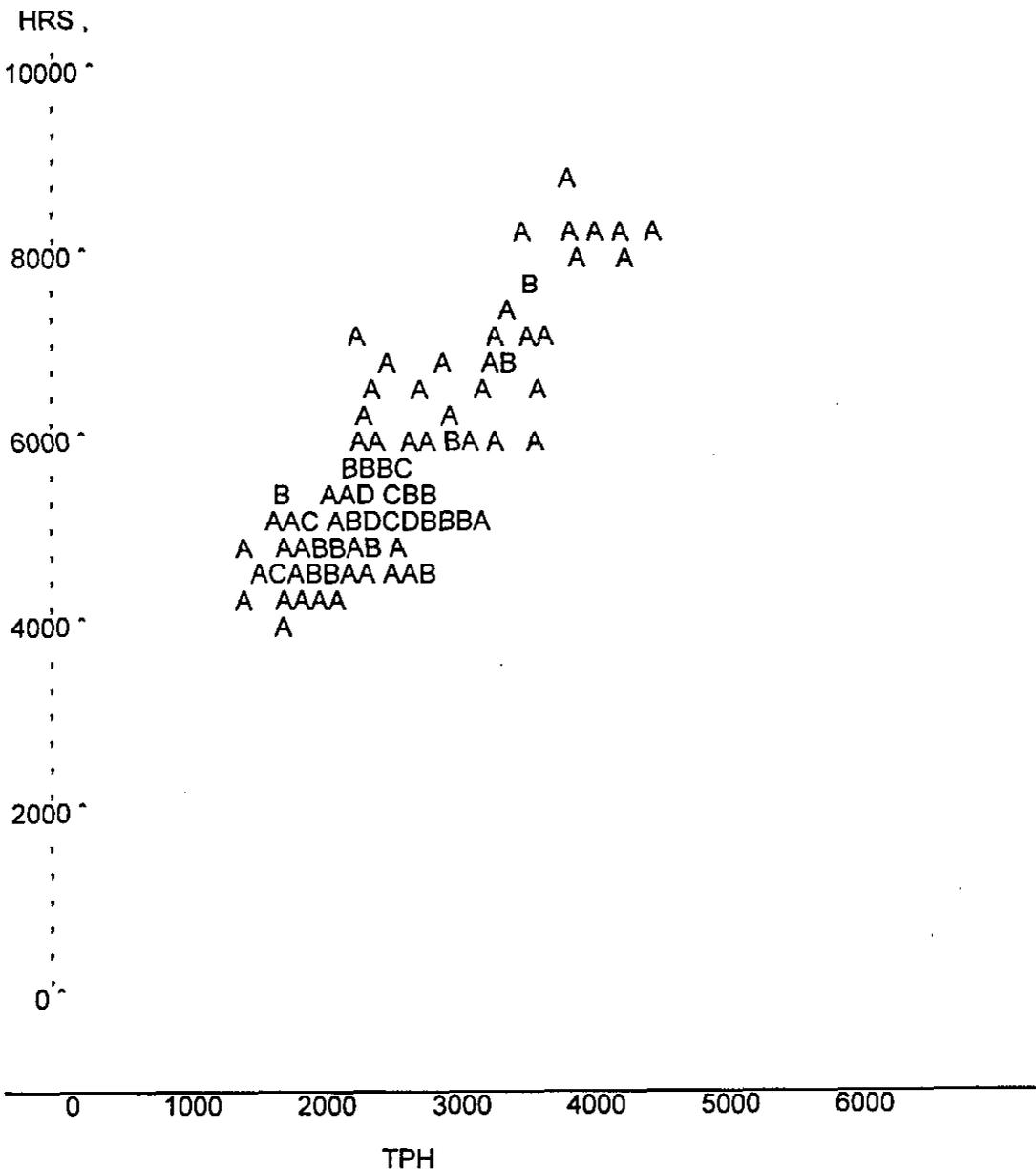


NOTE: 56 obs hidden.

MANUAL FLAT OPERATIONS
USING ONLY CONTINUOUS DATA FROM 8801-9613
INCLUDING OFFICES @ LEAST 39 OBS/LAG MODEL
Plotted by Site

----- IDNUM=1374 -----

Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.

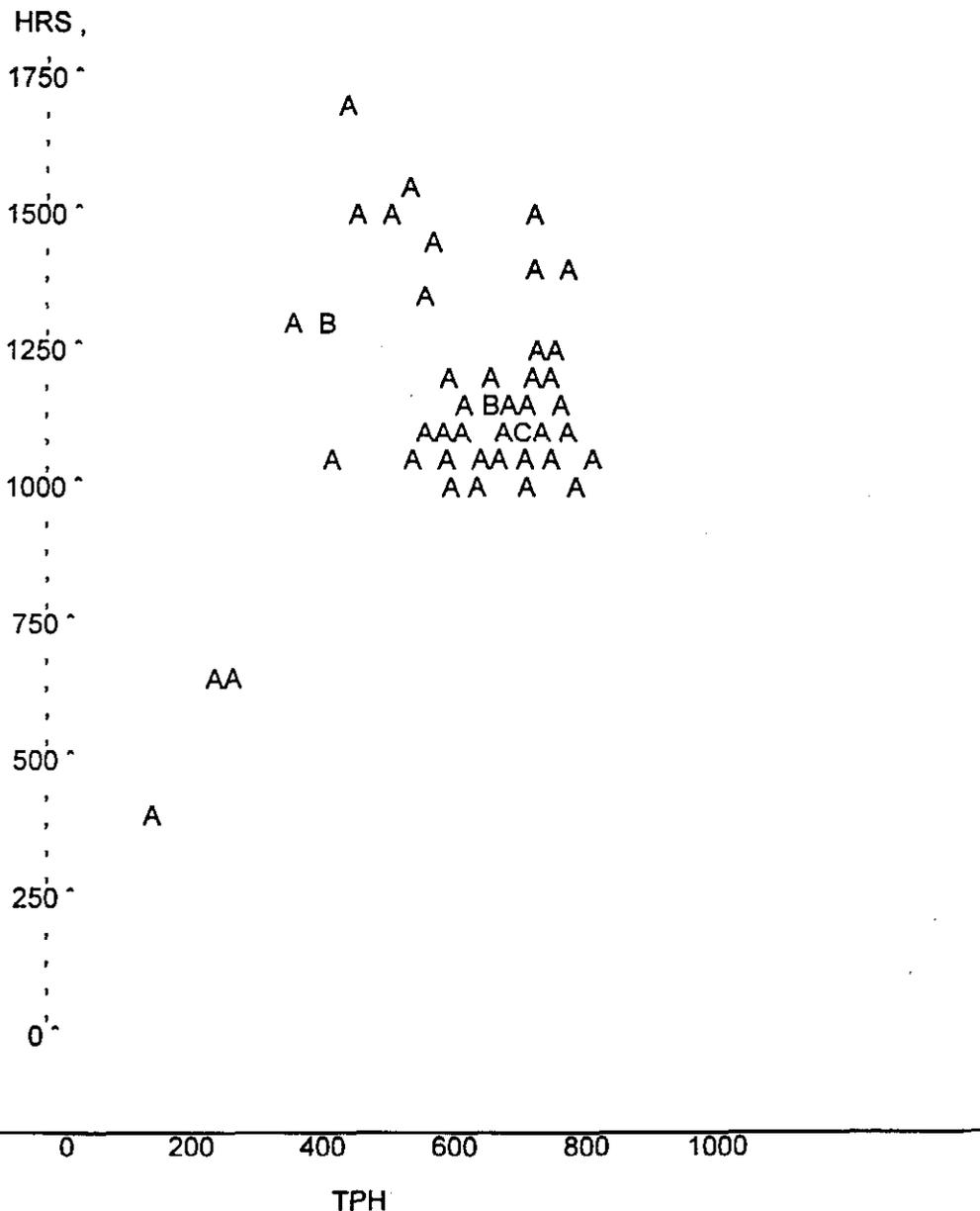


OCA 603
 Page 9 of 19
 Revised
 2/13/98

MANUAL FLAT OPERATIONS/ HOURS ON TPH
 USING ONLY CONTINUOUS DATA FROM 8801-9613
 INCLUDING OFFICES @ LEAST 39 OBS/LAG MODEL
 Plotted by Site

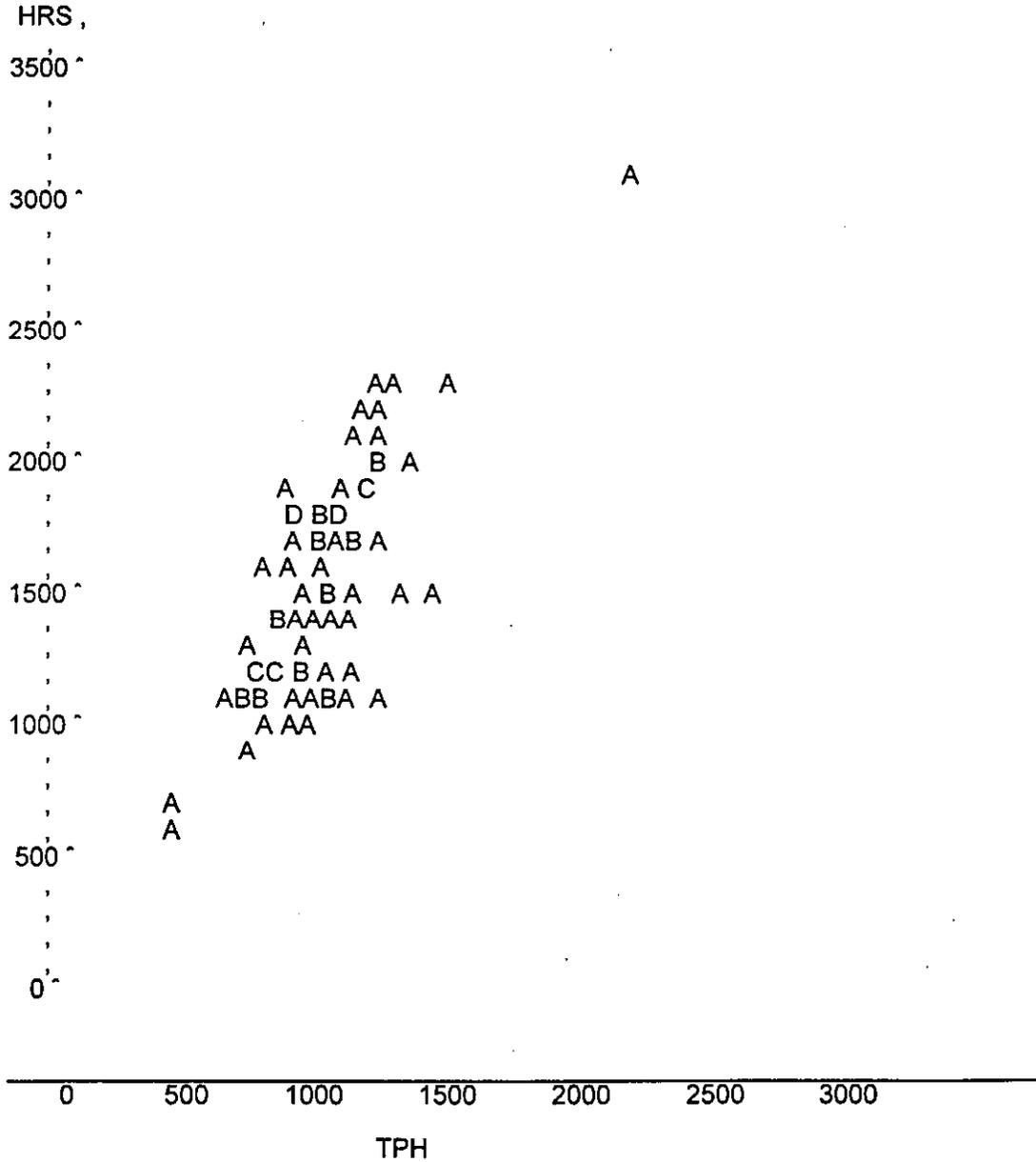
----- IDNUM=3593 -----

Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.



MANUAL FLAT OPERATIONS/ HOURS ON TPH
USING ONLY CONTINUOUS DATA FROM 8801-9613
INCLUDING OFFICES @ LEAST 39 OBS/LAG MODEL
Plotted by Location
----- IDNUM=5255 -----

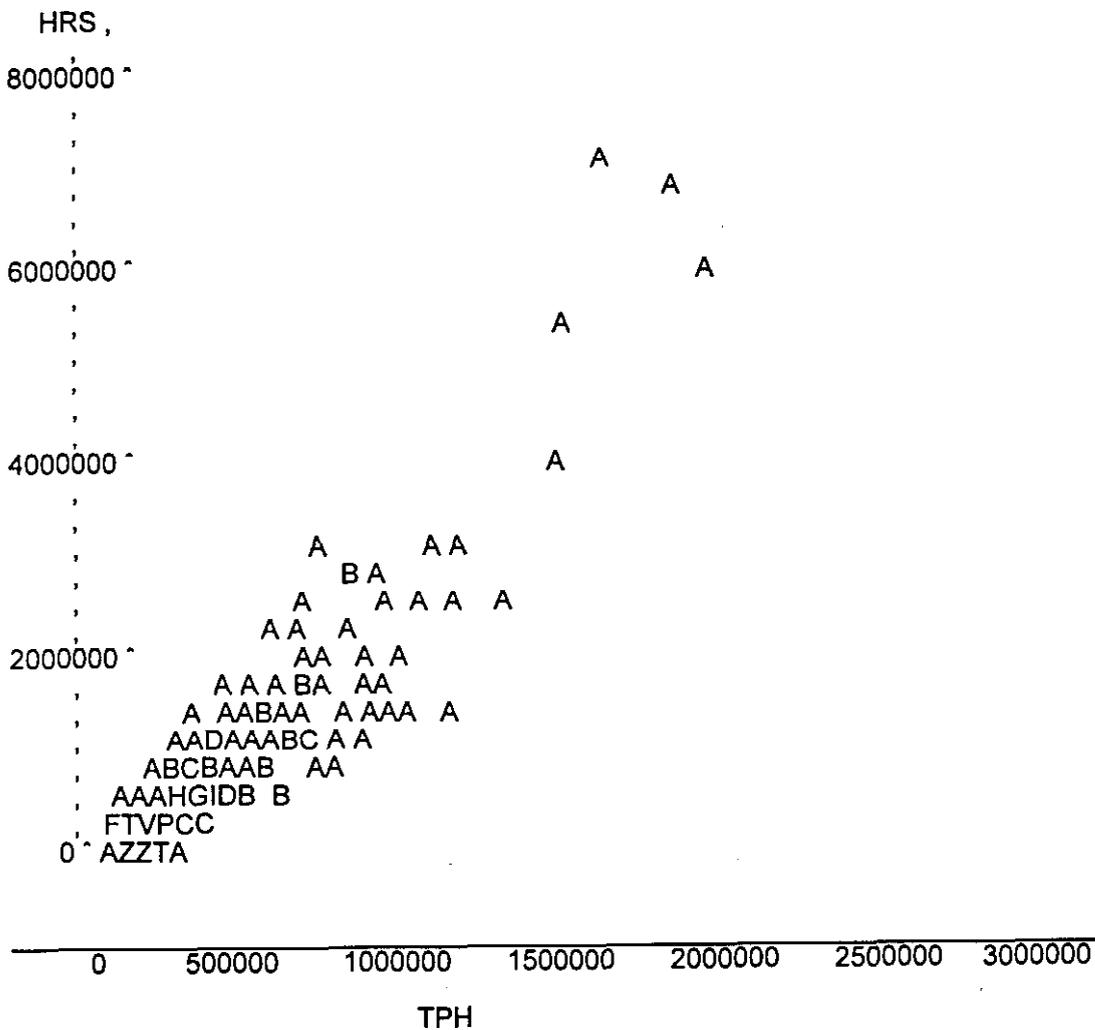
Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.



MANUAL FLAT OPERATIONS/ HOURS ON TPH
USING ONLY CONTINUOUS DATA FROM 8801-9613
INCLUDING OFFICES @ LEAST 39 OBS/LAG MODEL
Plotted by Location

----- IDNUM=9999 -----

Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.

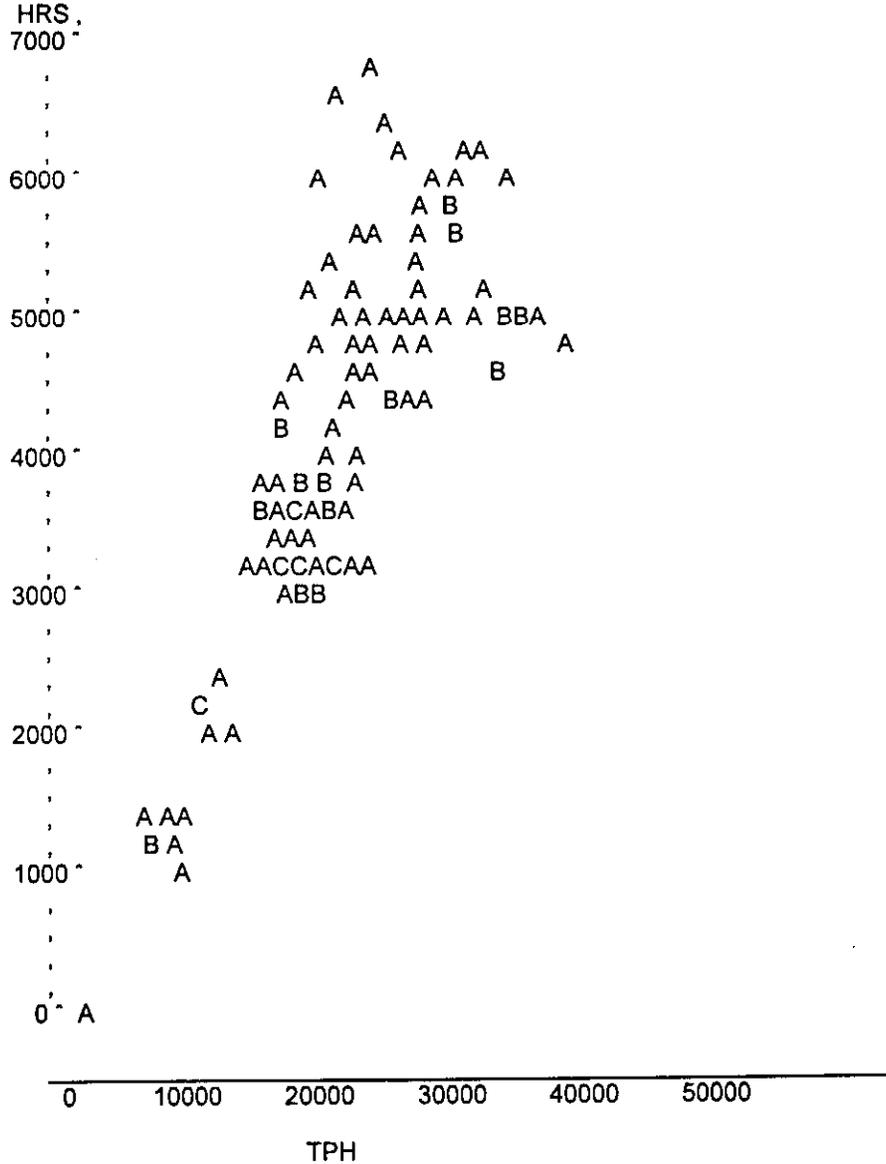


NOTE: 48 obs hidden

OCR OPERATIONS/ HOURS ON TPH
USING ONLY CONTINUOUS DATA FROM 8801-9613
INCLUDING OFFICES @ LEAST 39 OBS/LAG MODEL
Plotted by Location

----- IDNUM=621 -----

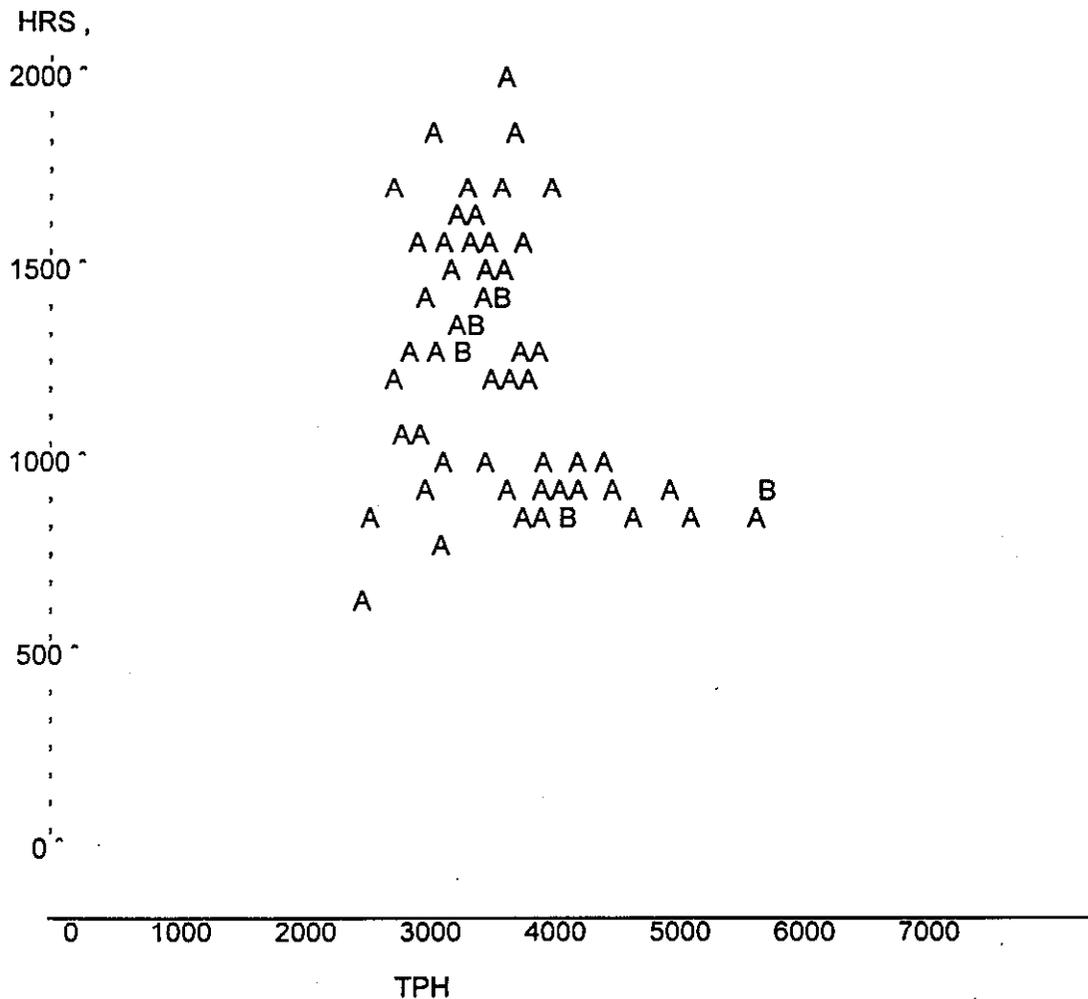
Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.



OCR OPERATIONS/ HOURS ON TPH
 USING ONLY CONTINUOUS DATA FROM 8801-9613
 INCLUDING OFFICES @ LEAST 39 OBS/LAG MODEL
 Plotted by Location

----- IDNUM=2467 -----

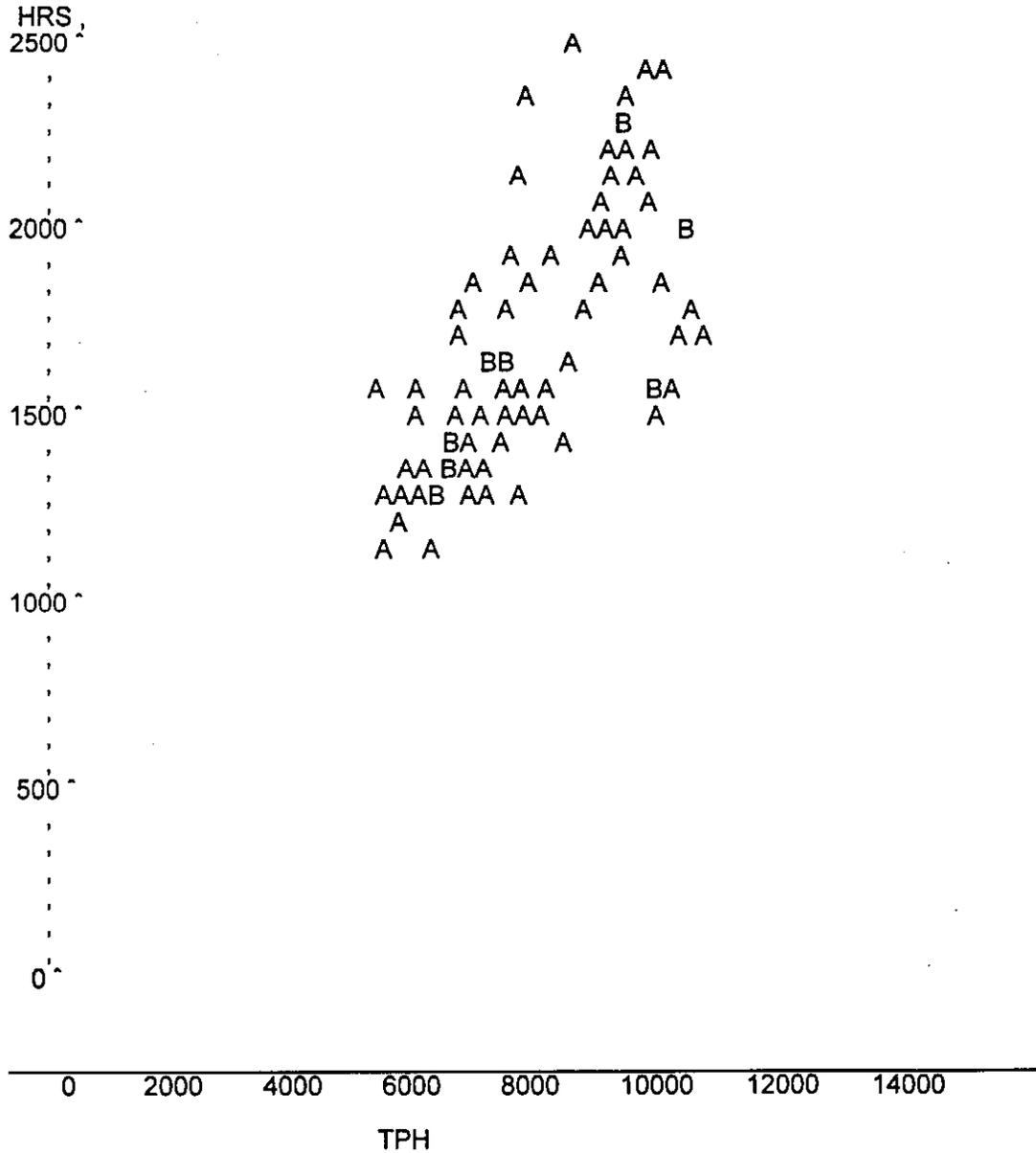
Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.



OCR OPERATIONS/ HOURS ON TPH
USING ONLY CONTINUOUS DATA FROM 8801-9613
INCLUDING OFFICES @ LEAST 39 OBS/LAG MODEL
Plotted by Location

----- IDNUM=9961 -----

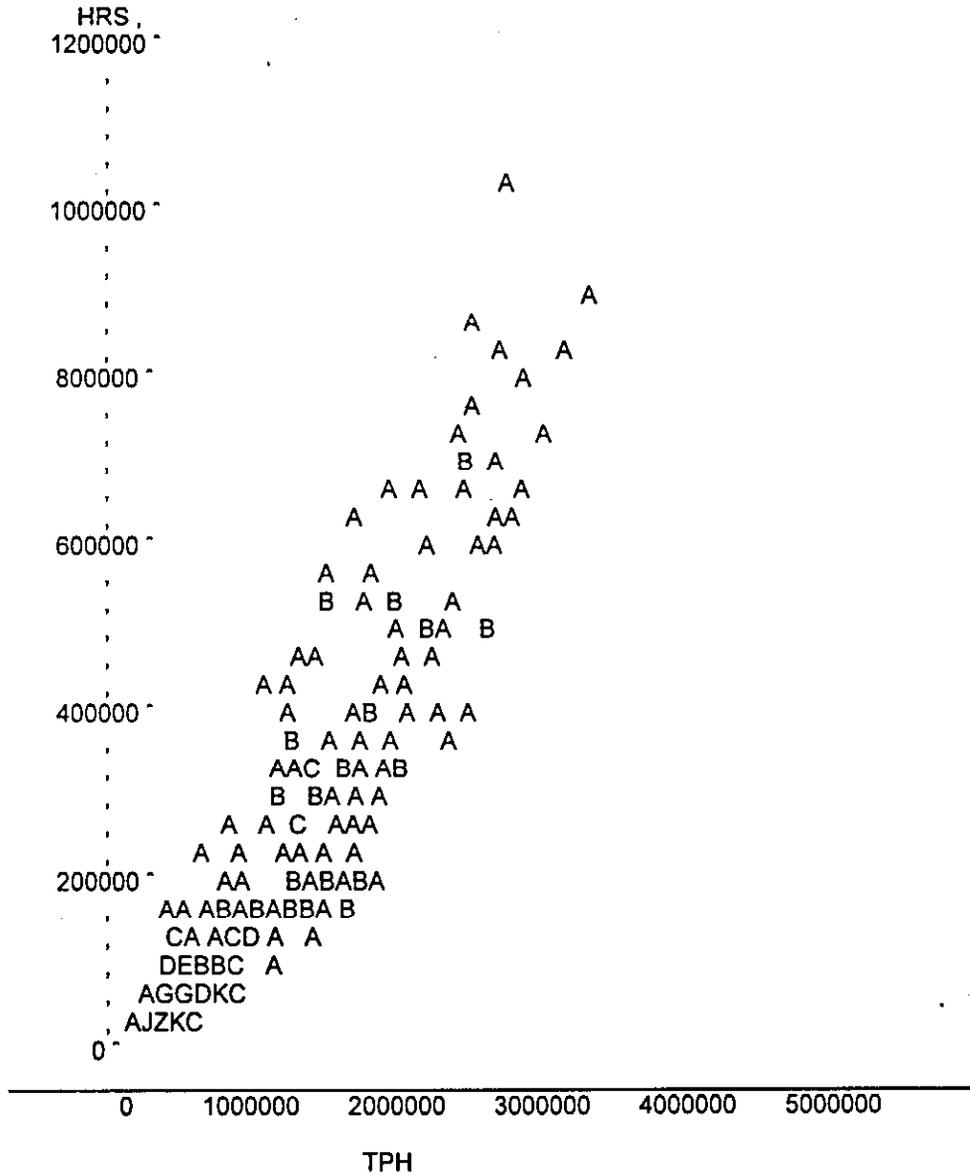
Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.



OCR OPERATIONS/ HOURS ON TPH
USING ONLY CONTINUOUS DATA FROM 8801-9613
INCLUDING OFFICES @ LEAST 39 OBS/LAG MODEL
Plotted by Location

----- IDNUM=9999 -----

Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.

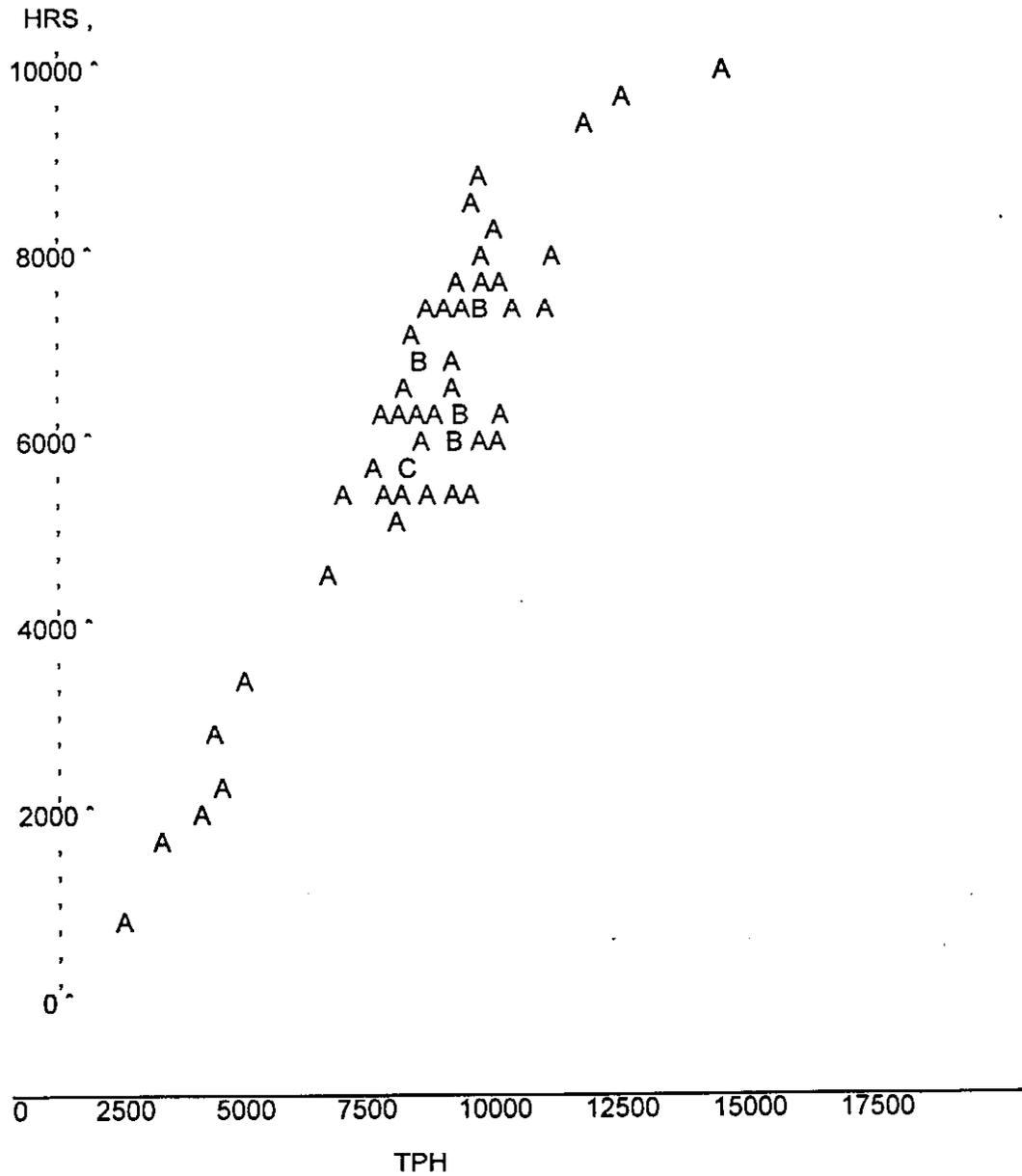


NOTE: 3 obs hidden.

LSM OPERATIONS/ HOURS ON TPH
USING ONLY CONTINUOUS DATA FROM 8801-9613
INCLUDING OFFICES @ LEAST 39 OBS/LAG MODEL
Plotted by Location

----- IDNUM=2375 -----

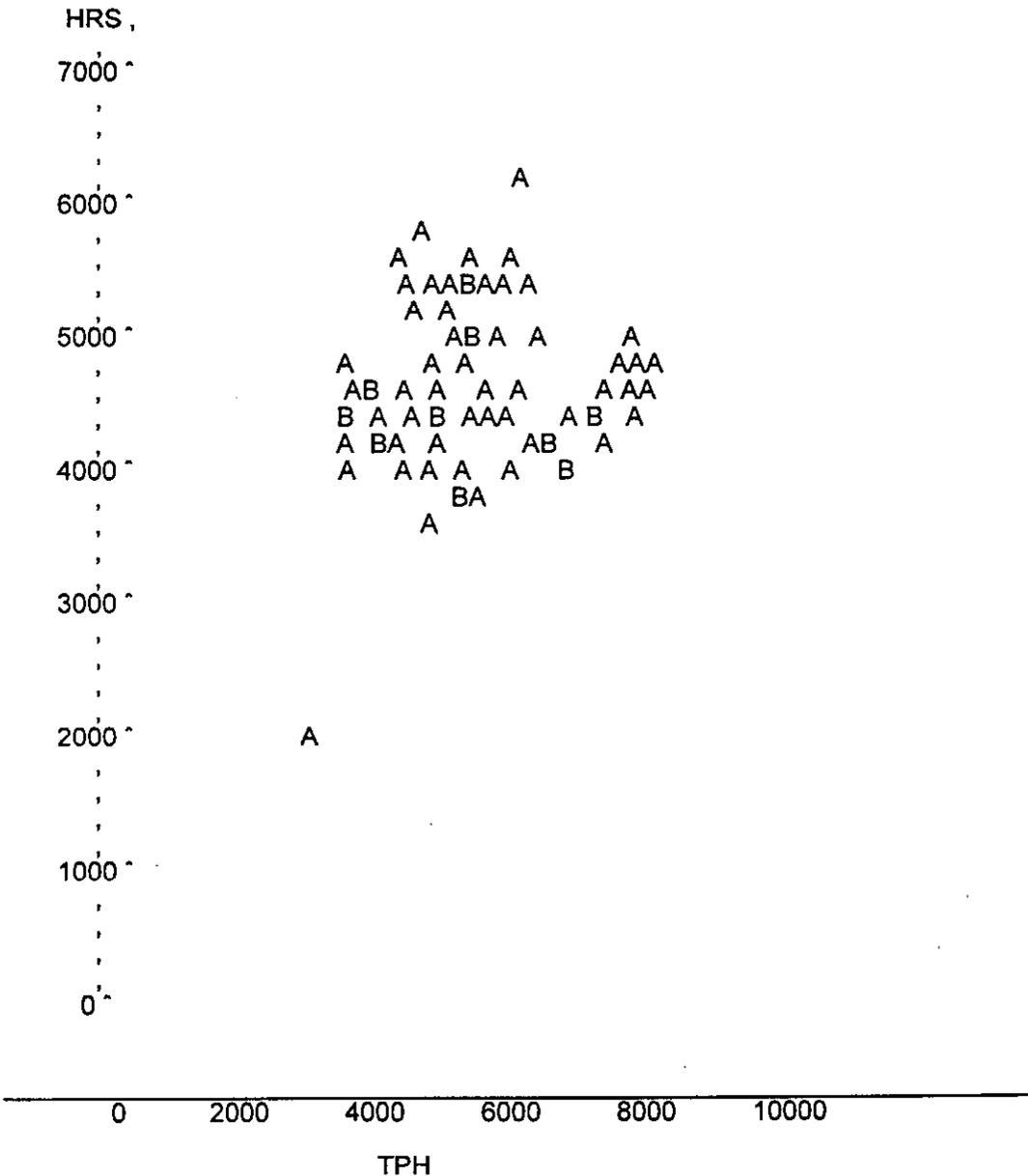
Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.



LSM OPERATIONS/ HOURS ON TPH
USING ONLY CONTINUOUS DATA FROM 8801-9613
INCLUDING OFFICES @ LEAST 39 OBS/LAG MODEL
Plotted by Location

----- IDNUM=4347 -----

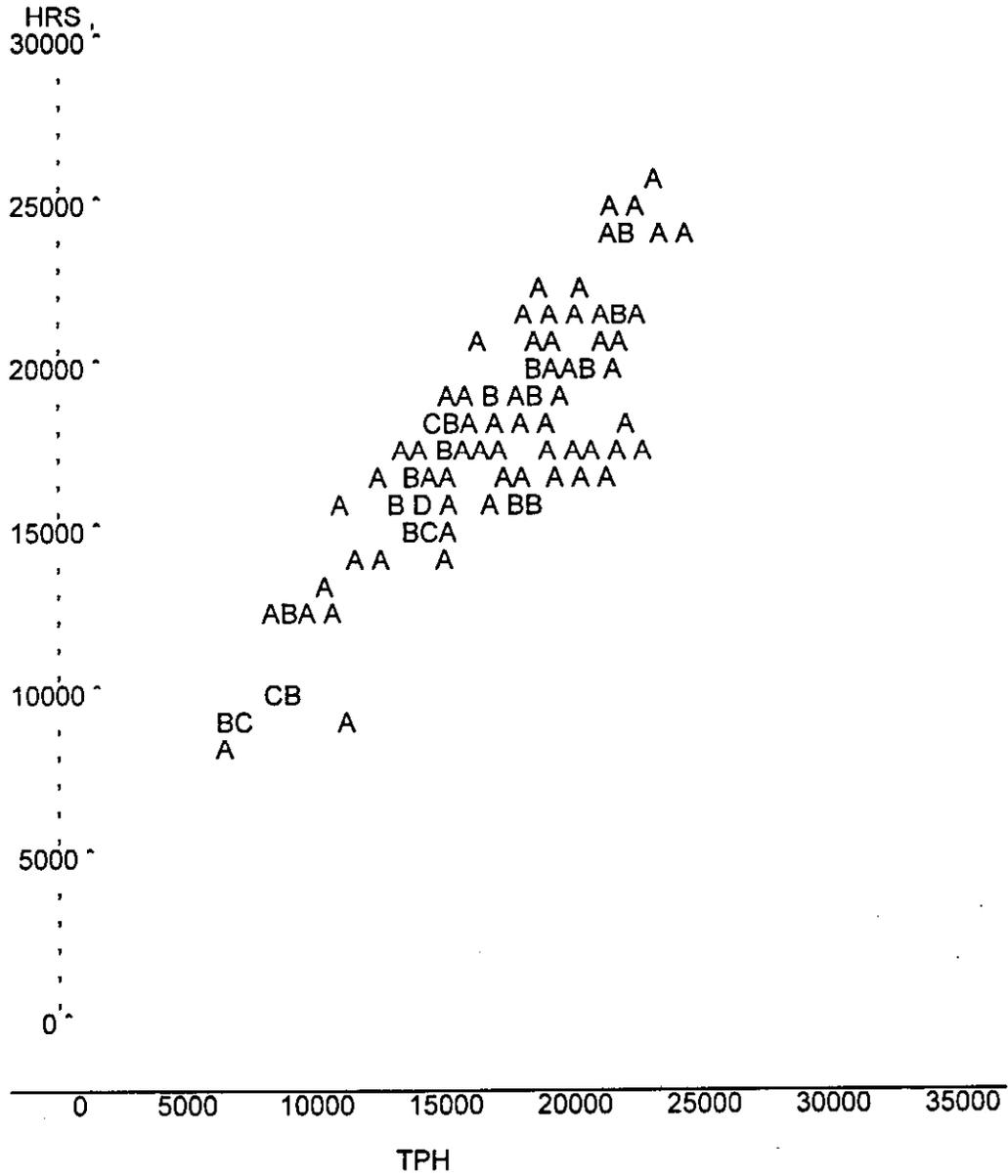
Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.



LSM OPERATIONS/ HOURS ON TPH
USING ONLY CONTINUOUS DATA FROM 8801-9613
INCLUDING OFFICES @ LEAST 39 OBS/LAG MODEL
Plotted by Location

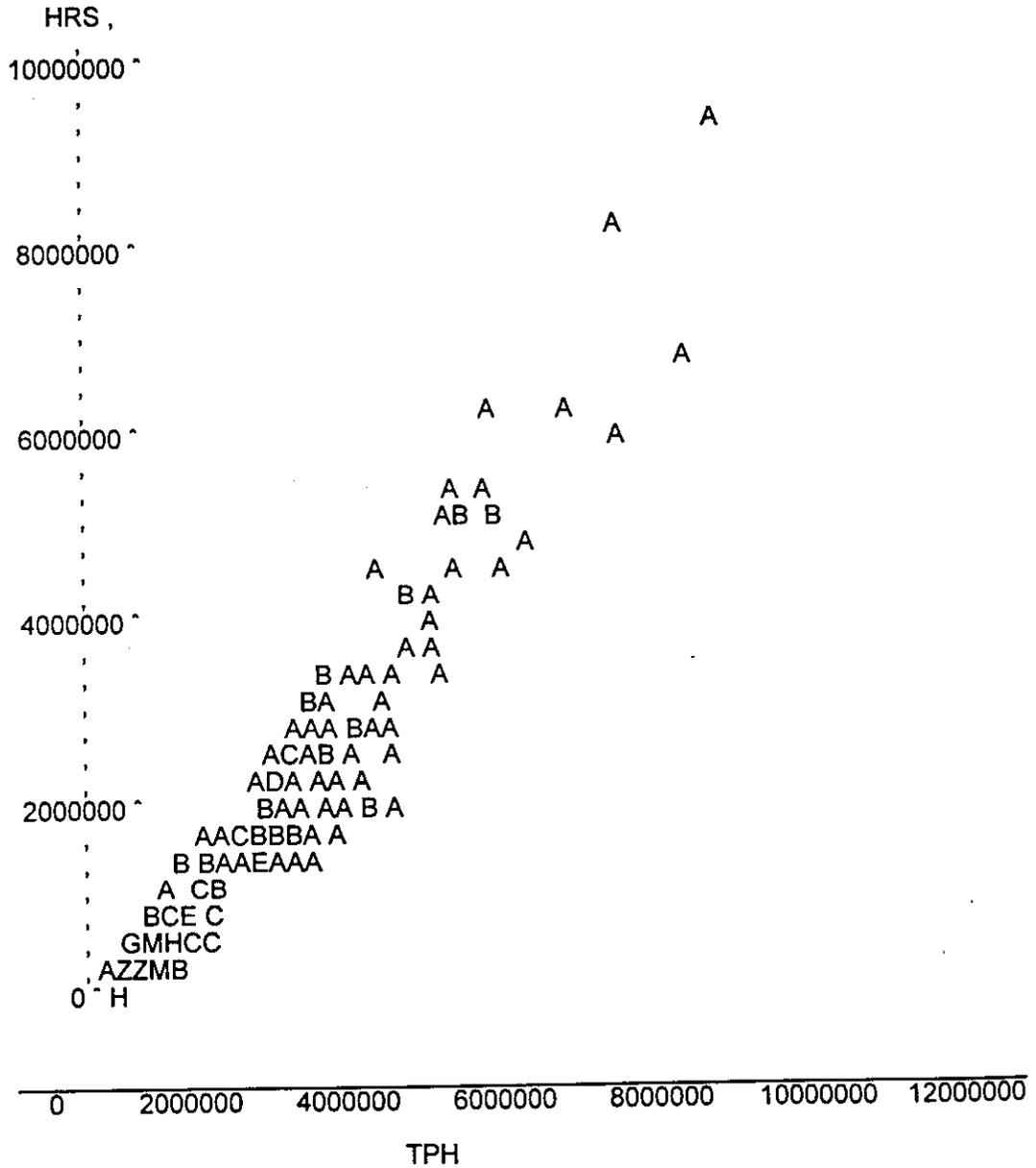
----- IDNUM=7346 -----

Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.



LSM OPERATIONS/ HOURS ON TPH
USING ONLY CONTINUOUS DATA FROM 8801-9613
INCLUDING OFFICES @ LEAST 39 OBS/LAG MODEL
Plotted by Location
----- IDNUM=9999 -----

Plot of HRS*TPH. Legend: A = 1 obs, B = 2 obs, etc.



NOTE: 16 obs hidden.

1 CHAIRMAN GLEIMAN: Mr. Smith, have you had an
2 opportunity to examine the packet of designated written
3 cross-examination that was made available earlier today?

4 THE WITNESS: Yes, sir, I have.

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

8 THE WITNESS: Yes, they would.

9 CHAIRMAN GLEIMAN: That being the case, I am going
10 to provide two copies of the designated written
11 cross-examination of the witness to the reporter and direct
12 that it be accepted into evidence and transcribed into the
13 record at this point.

14 [Designation of Written
15 Cross-Examination of J. Edward
16 Smith, Jr., OCA-T-600, was received
17 into evidence and transcribed into
18 the record.]

19
20
21
22
23
24
25

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, DC 20268-0001

Postal Rate and Fee Changes, 1997

Docket No. R97-1

DESIGNATION OF WRITTEN CROSS-EXAMINATION
OF OFFICE OF THE CONSUMER ADVOCATE
WITNESS J. EDWARD SMITH, JR.
(OCA-T600)

Party

Magazine Publishers of America

United Parcel Service

United States Postal Service

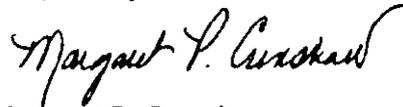
Interrogatories

USPS/OCA-T600-4, 6-7, 9-11, 14-17

USPS/OCA-T600-3-4

USPS/OCA-T600-1-18

Respectfully submitted,



Margaret P. Crenshaw
Secretary

INTERROGATORY RESPONSES OF
OFFICE OF THE CONSUMER ADVOCATE
WITNESS J. EDWARD SMITH, JR. (T600)
DESIGNATED AS WRITTEN CROSS-EXAMINATION

Interrogatory:

USPS/OCA-T600-1
USPS/OCA-T600-2
USPS/OCA-T600-3
USPS/OCA-T600-4
USPS/OCA-T600-5
USPS/OCA-T600-6
USPS/OCA-T600-7
USPS/OCA-T600-8
USPS/OCA-T600-9
USPS/OCA-T600-10
USPS/OCA-T600-11
USPS/OCA-T600-12
USPS/OCA-T600-13
USPS/OCA-T600-14
USPS/OCA-T600-15
USPS/OCA-T600-16
USPS/OCA-T600-17
USPS/OCA-T600-18

Designating Parties:

USPS
USPS
UPS, USPS
MPA, UPS, USPS
USPS
MPA, USPS
MPA, USPS
USPS
MPA, USPS
MPA, USPS
MPA, USPS
USPS
USPS
MPA, USPS
MPA, USPS
MPA, USPS
MPA, USPS
USPS

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-1-8

USPS/OCA-T600-1. Please refer to page 1 of your testimony.

- a. Please provide a list of all published econometric studies that you have performed.
- b. Please provide a list of all completed but not published econometric studies that you have performed.

A. a. The DOD-Contractor Relationship, Study 71-4, Logistics Management Institute, 1974, with Dr. Harold Asher. The study was summarized in the press. The study modeled the cost structures of sixteen airframe facilities, encompassing all military and commercial aircraft production in the United States. Publicly available information was restricted due to commercial, competitive, and national security reasons. Accordingly, the methodology of the econometric part of the study will be detailed.

Data Collection: Data on costs, inputs, technologies, and equipment were gathered from 16 fixed-wing aircraft manufacturers. Costs were measured in labor hours as a function of output; a similar limitation occurs in witness Bradley's study. Panel data were collected for a time span of approximately 9 to 15 years from each of the sixteen sites for a variety of activities; the major activity which was econometrically modeled was airframe assembly.

Data Scrubbing: Data scrubbing included the review of data outliers. Extensive data review was conducted through actual contact with the accounting and management personnel at each of the sites. It was determined that statistical data scrubbing would

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-1-8

be highly unreliable, for the outliers usually were indicative not of human error in reporting but, rather, were indicative of changes in operations. The elimination of the data via statistical data scrubbing would have deleted important information.

Inadequate data scrubbing has been an issue raised by at least one witness in reviewing witness Bradley's work.

Analysis: The underlying data relationships were examined by plotting the data for each of the sixteen locations. It was found that a simple plotting of hours vs. output provided visually compelling insight on the underlying structure of the data. First, it became clear that each of the 16 regressions would have a different alpha intercept (which is what one would expect—given the differences between sites). Second, it became clear on the basis of a plotting of the data that when a regression equation would be performed β_i would not equal β_j . Similarly, a plotting of individual site data for witness Bradley's study suggests that the β_i do not equal the β_j , an assumption made by witness Bradley. Sixteen equations—one for each site—were developed based on the relationship of hours = $f(\text{output})$.

Economic Interpretation: Discussions with industry experts confirmed that both the α_i and β_i were highly dependent on the underlying capital, product, and operating procedures at the sites, and that an analysis of labor hours and output was essentially a short term analysis—inappropriate for planning or longer-term costing purposes.

Econometric Conclusions: The equations were generated for each site, involving an estimation of the alphas and betas. The equations were subsequently used to estimate short-term changes in labor requirements based on plant loads.

b. **Work while at General Electric:** Participation in studies on the residential, commercial, and industrial demands for electricity. The models were based on regional data and were based on approaches from the published literature. The modeling of commercial demand required the explicit modeling of technologies rather than a simple extrapolation of trends. The projections, subsequently proven to be accurate, confirmed that the demand for electricity had significantly declined. The sales and profit implications to the \$6 billion Power Systems Business were substantial.

Work while at Washington Gas: I managed a variety of demand analysis efforts using standard econometric approaches. The efforts were useful in establishing a basis for improved business planning.

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-1-8

USPS/OCA-T600-2. Please refer to page 2 of your testimony.

- a. Please provide the number of years that you have studied United States Postal Service mail processing costs and operations prior to reviewing witness Bradley's testimony.
- b. Please provide complete copies of all studies of United States Postal Service mail processing costs and operations that you have authored or participated in.

A. a. Although I have not studied USPS mail processing costs prior to reviewing witness Bradley's testimony, my experience is immediately applicable to the evaluation of his testimony, which focuses on cost analysis in a factory environment. I have addressed a very similar econometric problem in the fixed-wing airframe industry, involving the estimation of labor hours as a function of output when associated with the Logistics Management Institute.

As a manager in General Electric's Power Transformer Division as well as other GE planning and analysis positions I gained in plant experience with job shop, automated, and mechanized factory processes—the types of processes which predominate in mail processing. During a tour of the Merrifield, Virginia, facility I confirmed the similarity between job shop factory operations and postal processing.

- b. None.

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-1-8

USPS/OCA-T600-3. Please refer to page 11, line 17 of you testimony where you state:

He [witness Bradley] quotes Dr. William Greene, a noted econometrician, as stating that technological change can be measured with an autonomous time trend. However, I believe that witness Bradley's interpretation of Dr. Greene's comment is incorrect.

And page 12 line 4 where you state:

Witness Bradley is not addressing a macroeconomic problem. Instead, on the microeconomic issue of technological change, witness Bradley needs to address the fundamental driver of technological change impacting the mail handling process.

And page 12 line 13 where you state:

An explicit modeling of capital related variables is required in order to explain technological change and other important microeconomic factors driving costs.

a. Please confirm that on page 465 of Econometric Analysis (2nd edition) the same Dr. Greene states:

A study by Greene (1983) examines the cost of electric power generation for a large number of firms, each observed in each of several years. The basic model, for the i th firm in year t ,

$$\text{Cost}_{it} = C(Y_{it}, P_{it}, t),$$

where Y is output and p is vector of factor prices, provides estimates of the rate of technological change,

$$\delta_t = \frac{-d \ln C}{dt}$$

b. Please confirm that the referred to study is a microeconomic study.

c. Please confirm that the above equation does not include "an explicit modeling of capital related variables."

d. Please confirm that Dr. Greene's model includes a time trend to capture the effect of technological change.

A. a. Confirmed. A review of Dr. Greene's article, "Economies of Scale in U.S.

Electric Power Generation," Journal of Political Economy, 1976, vol. 84, no. 4, pages

655-75, indicates at page 657 that he determined to:

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-1-8

limit our attention to conventional steam powered generators by analyzing only the costs of steam generation for each firm examined.

This treatment of technological change highlights a problem of the relevance of the approach. Within a few years of the publication of the article a new form of steam powered generation known as the "combined cycle" (combined gas and steam generator) was substitutable for essentially all base load steam generation, and was in fact more economical. The technological change has had a major impact on the economics of electric generation. Econometric modeling could not have captured this development, being based on existing rather than projected data. Accordingly, for the specific industry at hand, the approach to technical change appears to have been inappropriate.

b. Confirmed. The modeling of technological change in this fashion is also a macroeconomic approach. Although I did not indicate that this approach was not used, the potential limitations of the approach were highlighted in the above discussion on power generation. In the case of the postal business it should be noted that the Postal Service has an elaborate, extensive investment and technological innovation program underway. It is unlikely that the past will represent the future in terms of technological change. Accordingly, other approaches to the modeling of technological change may be appropriate.

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-1-8

c. Not Confirmed. Equipment configuration is essentially determined by fuel type. Turning to page 663 in Dr. Greene's article, "Economies of Scale in U.S. Electric Power Generation," Journal of Political Economy, 1976, one finds the statement:

Since fuel accounts for a very large share (approximately 65 percent) of the cost of electricity generated by steam power, it is essential to include fuel in the model as a factor of production.

It is well known in the electric business that the choice of equipment type (e.g., nuclear, hydro, or fossil) coupled with equipment specifications are the major determinants of the cost of fuel. For example, among fossil steam plants, the cost of fuel is closely tied to the type of equipment (for example, certain types of coals are suitable for specific plant configurations). Accordingly, a consideration of fuel price is essentially a modeling of equipment selection.

d. I confirm that Dr. Greene has a time trend and that he intends to capture the effect of technological change.

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-1-8

USPS/OCA-T600-4. Please refer to your testimony on page 20 at line 15 where you state:

I conclude that each of the "alpha sub i" in witness Bradley's method relates to a short-run, "monthly" facility specific cost relationship.

Please confirm that this comment is based upon the accounting period (monthly) frequency of the data. If you do not confirm, please provide all bases for asserting that the a_i are "monthly" facility specific cost relationships.

A. Not confirmed. The monthly facility specific cost relationship is the regression equation. The alpha sub i, according to witness Bradley, account for all differences between facilities, leaving only monthly data relating hours and output for explanation. I confirm that witness Bradley uses data based on thirteen accounting periods per year, that the alpha sub i are part of a cost relationship based on a fixed effects model, and that the alpha sub i capture facility specific effects. I conclude that witness Bradley has measured short-run labor/output relationships and that a longer-run analysis, as I have advocated, would be appropriate.

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-1-8

USPS/OCA-T600-5. Please consider the following equation:

$Y = X*Z$, where X, Y and Z are all variables.

- a. Please confirm that $\ln Y = \ln X + \ln Z$ where "ln" stands for natural log. If you do not agree, please provide the formula for $\ln Y$.
- b. Please confirm that $d \ln Y = d \ln X + d \ln Z$. If you do not agree, please provide the formula for $d \ln Y$.

A: a. Confirmed. Having not directly testified to this, I examined the programs in the Library References which I filed to determine any possible source of misunderstanding. Certain parts of the computer programs presented in my Library References contain logarithmic expressions. A review of the SAS code will show that the logarithmic expressions are inoperative—either because of an asterisk or because of code order. My testimony inadvertently states that the results are in log form. They are not, but none of my conclusions are changed. For clarity, an errata to my testimony is being filed.

b. Confirmed.

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-1-8

USPS/OCA-T600-6. Please refer to page 6, line 23 of your testimony.
Assume that the cost function for a firm facing fixed factor prices $w \gg 0$ is defined as:

$$c(w,y) \equiv \min_x w \cdot x \text{ s.t. } x \in V(y)$$

where x is the input into production, y is the output of production and $V(y)$ is the input requirement set, and $X(w,y)$ solves the firm's cost minimization problem.

a. Please confirm that for this cost function:

$$c(w,y) \equiv \min_x w \cdot x(w,y)$$

If you do not confirm, please provide what you think is the correct expression.

b. Please confirm that $x(w,y)$ is known as the conditional factor input demand equation. If you do not confirm, please provide what you think to be the correct interpretation of $X(w,y)$.

A. a. Confirmed. I examined whether the equation is in the form of a cost estimation relationship as found in operations research (for example, labor hours as a function of output, price not being present), or a cost equation (meeting the theoretical requirements of economics). In order to determine the correctness of the expression, I have reviewed the equation using two sources: Microeconomic Theory (C. E. Ferguson, R. D. Irwin, 1969), and Econometric Analysis (W.H. Greene, Second Edition, Prentice Hall, 1993). The relevant pages in Professor Ferguson's exposition are pages 202-205. The relevant page in Professor Greene's exposition is page 465. Professor Greene (consistent with Professor Ferguson) defines a cost function as follows:

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-1-8

$$\text{Cost sub (i,t)} = C(\text{Y sub i,t}, \text{P sub i,t}, \text{t}).$$

The equation presented by Dr. Greene contains Y, the output; P, a vector of prices; and t, denoting time. The equation presented in the interrogatory would also appear to contain the variables and a minimization process. Assuming that the notation, minimization process, and specification in the interrogatory are consistent with Dr. Greene's presentation, I confirm.

b. Confirmed.

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-1-8

USPS/OCA-T600-7. Please refer to page 15 line 15 where you state: "I am unable to confirm that the signs are consistent with a correct methodology."

- a. Please define the term "correct methodology."
 - b. Please provide the exact criteria by which it can be determined whether a methodology is correct or incorrect.
 - c. Please confirm that in a panel data regression, a time trend variable will capture the effects of all factors which vary over time, including but not necessarily limited to, technological change. If you do not confirm, please explain.
- A.
- a. A correct methodology would include the following:
 1. An adequate data base, appropriately verified and complete.
 2. A discussion of the modeling approach and how it is consistent with the underlying data.
 3. An adequate model and analysis of functional properties.
 4. A correct estimation procedure which is suitable to the estimation needs at hand.
 5. A discussion of results in which the values, signs, and other outputs are fully explained.
 6. Additional criteria as presented in Dr. Bonbright's evaluation factors, are presented in my testimony.
 - b. Whether the methodology meets the above criteria.

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-1-8

c. Assuming that a panel data regression is the appropriate estimating technique, the time trend variable captures the effects of all factors which have varied over time, including but not necessarily limited to technological change. However, I believe that the choice of a fixed effects approach is incorrect and that the time variable does not solely estimate technological change.

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-1-8

USPS/OCA-T600-8. As an econometrician, is it your testimony that in general (without reference to witness Bradley's testimony) the methodology of estimation constrains the "correct" signs for estimated parameters?

A. My comments must be taken in the context that I am only testifying on witness Bradley's testimony.

No. I believe that the methodology of estimation is secondary to the underlying economics problem. In addressing an economic issue, the first requirement is the specification of a model and theory. Such a specification should yield testable hypotheses. The quantification and estimation would then follow. Some theories yield hypotheses that put some constraints on the reasonableness or veracity of conclusions. For example, based on various assumptions one would expect demand, supply, and cost curves to take on the forms presented in textbooks. Associated with these forms are predicted signs. Accordingly, one would be suspicious of unexpected signs, absent an explanation.

One is then faced with the problem of estimation. In arriving at a conclusion, the quantities and signs should be understandable. In some cases in witness Bradley's testimony they are not. Dr. Bonbright cited "understandability" as one of the requirements generally met by regulatory standards. On the sign issue witness Bradley's work appears to lack understandability. Accordingly, the issue becomes one of whether the modeling effort is correct.

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-9-11

USPS/OCA-T600-9. Please refer to your testimony at pages 26-28.

- (a) Please provide a mathematical regression equation that corresponds to the "pooled model" as you use the term in your testimony.
- (b) Please confirm that the pooled model is a special case of the "fixed-effects model" in which all of the intercepts are constrained to be equal.

A. (a) I have not developed the regression, for the scope of my work has consisted of (a) evaluating witness Bradley's model and (b) reviewing alternative approaches which need to be considered in advocating a change. A substantial amount of additional work may be required in evaluating, changing, or supplementing witness Bradley's approach and, accordingly, is outside the scope of my testimony.

Witness Bradley has already provided pooled regression equations which from a theoretical point of view seem to comport more closely with the underlying economics. Additional work considering other variables—such as facility capacity, age, and technologies—in a production function mode with subsequent derivation of a cost function could also be considered.

(b) The pooled model has one intercept and one equation—not multiple intercepts corresponding to multiple lines, for which the beta sub i may or may not be equal depending upon the underlying data and estimation procedure used. Subject to these substantial differences, one could state that the pooled model is a special case. In fact, a possible first approximation in a search for a solution might be the consideration of the pooled equations developed (but not endorsed) by witness Bradley in response to POIR No. 4.

Revised 2-26-98

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-12-18

USPS/OCA-T600-10. Please refer to your testimony at page 27. You state that since you have not computed regressions, your conclusions are "not precise." Given that you have had access to the required data, why did you choose not to compute the regressions that would have made your conclusions "precise"? Please explain fully.

A. A visual inspection of the data is adequate to substantiate my conclusions. The computation of regressions would require the treatment of issues of multicollinearity (an issue with which witness Bradley has expressed concern), the treatment of scrubbed data (another witness has found very different results using Dr. Bradley's methodology but unscrubbed data), the specification of appropriate variables, and technical economic issues such as the treatment of the longer run. Rather than have the analysis focus on a debate over the specific and appropriate techniques for generating a regression equation, I have chose to avoid those issues and to focus on the underlying data.

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-9-11

USPS/OCA-T600-11. Please refer to your testimony at page 27, lines 4-6. Please explain precisely what you mean by your statement "the underlying data plotted on a site by site basis substantiate both fixed effects regressions and pooled regressions."

A. On the basis of visual inspection, some of the site data support on a site by site basis the fixed effects regression conclusions arrived at by witness Bradley for the analysis of the entire data set. Some of the data appear to substantiate that a regression approach with a common slope between sites and a positive and different alpha intercept for each site would be reasonable. However, other data appear to substantiate that the assumption of common slopes is not acceptable.

In addition, some of the data plots appear to be "blobs". A regression on those data is not meaningful.

Other data plots tend to comport to the pooled regressions generated by witness Bradley in response to POIR No. 4.

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-12-18

USPS/OCA-T600-12. Please refer to your testimony at page 35, line 9 where you state:

Given witness Moden's testimony, it is reasonable to question whether MODS facilities are in fact representative of non-MODS facilities.

Please confirm that it is your testimony that there is no reason to believe that the variabilities are the same at MODS offices and non-MODS offices. If you do not confirm, please explain how the variabilities could be the same despite the apparent differences that you discuss.

A. Confirmed.

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-12-18

USPS/OCA-T600-13. Are you familiar with the econometric term "observational equivalence." If so, please provide a precise definition of the term.

A. According to Dr. Greene on pages 720-21 of **Econometric Analysis**, Third Edition, Prentice-Hall, 1997,

We have in hand a certain amount of information upon which to base any inference about its underlying structure. If more than one theory is consistent with the same "data," the y are said to be **observationally equivalent**, and there is no way of distinguishing them. The structure is said to be *unidentified*.

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-12-18

USPS/OCA-T600-14. Please refer to page 3 of 8 in OCA 602.

- a. Please confirm that you could not visually inspect the pattern of 18,818 data points because they are hidden and do not appear on the plot. If you do not confirm, please explain what the term "NOTE: 18818 obs hidden." means.
 - b. Please confirm that the letter "Z" appears in the plot about 100 times. If you do not confirm, please provide the number of times the letter "Z": appears in the plots.
 - c. Please explain the significance of the letter "Z" in the plot.
- A.
- a. I confirm that I inspected the pattern for the points plotted. Some of the "Z" data plot a large number of data points located at the same point, and, accordingly, data points which are plotted on a combined basis do not plot individually.
 - b. Confirmed.
 - c. The letter "Z" indicates that 26 or more points are present in the vicinity of the letter.

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-12-18

USPS/OCA-T600-15 . Please refer to page 2 of 19 in OCA 603.

- a. Please confirm that you produced hundreds of plots for each of the mail processing activities you reviewed. If you do not confirm, please provide the number of plots you produced for each of the activities that you reviewed.
- b. Did you review all of the plots that you produced? If you did not review all of the plots, please explain why.
- c. What was the average amount of time it took you to review a plot? Please explain fully.

A. a. Confirmed.

b. I reviewed all of the plots.

c. I did not keep a record of the time spent reviewing specific data. My best estimate is in the neighborhood of two minutes per plot.

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-12-18

USPS/OCA-T-16. Please refer to page 1 of 19 of OCA 603 where you state:

A plotting of data points which ultimately has a positive intercept on the dependent variable, the hours-axis, is consistent with witness Bradley's fixed effects conclusions.

Please confirm that it is your testimony that data consistent with the fixed effects model should generate a data plot for each site that has a positive intercept on the hours-axis. If you do not confirm, please explain the above quote.

- A. The above quote would not exclude a zero intercept on the hours-axis. One could hypothesize a line in Figure 1.1 on page 6 to intercept the origin in Dr. Cheng Hsiao's book, **Analysis of Panel Data**, Cambridge University Press, 1986.

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-12-18

USPS/OCA-T600-17. Please refer to page 1 of 19 of OCA 603 where you state:

Finally, a plotting of data points essentially through the origin is consistent with the pooled case.

Please confirm that it is your testimony that data consistent with the pooled model should generate a data plot for each site that essentially goes through the origin. If you do not confirm, please explain the above quote.

- A. Not confirmed. A pooled model could have a positive intercept. However, a line through the origin would give 100% variability.

ANSWERS OF OCA WITNESS J. EDWARD SMITH, JR.
TO INTERROGATORIES USPS/OCA-T600-12-18

USPS/OCA-T600-18. Please refer to the graphs in OCA 603. The titles of those graphs state: "Data Are In Logs." The scales of the axes of the graphs, however, appear to be in levels. Please clarify.

- A. The data are not in logarithmic form. Since I was using witness Bradley's program and was also using it for a variety of other runs I inadvertently produced incorrectly labeled graphs. The incorrect labels, however, do not change or modify my conclusions.

1 CHAIRMAN GLEIMAN: Does any participant have
2 additional written cross-examination for the witness?

3 [No response.]

4 CHAIRMAN GLEIMAN: If not, we will move on to oral
5 cross-examination. The Postal Service is the only party
6 that requested oral cross. Does any other party wish to
7 cross-examine?

8 [No response.]

9 CHAIRMAN GLEIMAN: If not, then, Ms. Duchek -- oh,
10 I'm sorry, Mr. Koetting. I looked at the wrong side of the
11 bench.

12 MR. KOETTING: We keep switching chairs, Mr.
13 Chairman.

14 CROSS-EXAMINATION

15 BY MR. KOETTING:

16 Q Good afternoon, Dr. Smith.

17 A Good afternoon, Mr. Koetting.

18 Q Dr. Smith, would you agree that much of the
19 analysis presented in your testimony consists of plotting
20 data and looking at those data plots?

21 A I also -- no, sir, I would not. I have quite a
22 bit of that. I also have pointed out some major fundamental
23 deficiencies with Dr. Bradley's work.

24 Q Right. The quantitative portion, though, of your
25 analysis consisted of plotting data and looking at the

1 plots, is that more to your liking?

2 A I believe that is what I did.

3 Q And according to your response to Postal Service
4 Interrogatory 15-C, you estimate that you spent about two
5 minutes examining each plot, something in that neighborhood,
6 correct?

7 A In that neighborhood, yes.

8 Q And by our calculation, there were approximately
9 1100 plots generated. Does that sound in the ballpark to
10 you?

11 A It sounds in the ballpark.

12 Q Two minutes times 1100 plots, 2200 minutes, and if
13 my arithmetic is right, that's somewhere between 36 or 37
14 hours, stating a little more broadly, would it be fair to
15 say that you spent approximately one work week devoted
16 entirely to reviewing data plots?

17 A Over a period of more than one work week, but yes.

18 Q If you would, could we look at your response to
19 Postal Service Interrogatory 14, Part A.

20 A I have it.

21 Q In that question we asked you to confirm that you
22 could not visually inspect the pattern of 18,818 data points
23 because they are hidden and do not appear on the plot, and
24 your response was that you inspected the pattern for the
25 points plotted.

1 Do I take that to mean that you did not visually
2 inspect the pattern of the hidden 18,818 data points because
3 they were not plotted?

4 A Not at all. In fact, the 18,000 data points would
5 overlap or overlie some of the Zs, and in that sense I
6 examined all of the relevant data.

7 The data plots, some of the nonplotted 18,818
8 observations fall on top of the plotted Zs, and accordingly,
9 in one sense of another, I observed them all.

10 Q So the note 18,818 observations hidden does not
11 detract at all from your ability to inspect the pattern of
12 the points plotted?

13 A It certainly provides a visually compelling
14 diagram that raises some of the conclusions that I arrived
15 at.

16 Q But in your opinion you can just as freely draw
17 conclusions from one of these data plots that contains a
18 note 18,818 observations hidden as a data plot that doesn't
19 contain any such note?

20 A The observations according to the program are
21 listed as hidden. They might as well or might equally be
22 well referenced as lying on top of ones that have been
23 plotted, and I believe that the plots are quite relevant to
24 the testimony.

25 Q Now when you're looking at a data point that's

1 plotted as a Z, do you have any knowledge of how many of
2 those 18,818 are sitting on top of a particular Z?

3 A No, I don't.

4 Q And that shouldn't have any influence on how you
5 interpret the data plot?

6 A As you go forward and run regressions the actual
7 regression may be somewhat different from what one is
8 expecting.

9 Q And you didn't run any regressions, did you, for
10 your direct testimony?

11 A I did not report any, and I don't believe I ran
12 any.

13 Q Let's talk about what we can tell from what you
14 did do, which was examining these plots. One of the things
15 that you have claimed examining a plot can do is allow you
16 to tell whether or not the plot is consistent with a cost
17 elasticity of 1; is that correct?

18 A That is correct.

19 Q And another way of saying a cost elasticity of 1
20 would be a volume variability of 100 percent; correct?

21 A Correct.

22 Q And another thing you can tell by looking at a
23 plot is whether the plot is in good agreement with a
24 fixed-effects regression or whether it is in good agreement
25 with a pooled-effects regression, or whether it is a, quote,

1 blob, with no clear data relationships.

2 A Your statement is, in general, loosely speaking
3 correct, but I would like to speak very precisely.
4 Certainly as you look at the data plots, you can certainly
5 tell that they're a blob, and there are a number of those.

6 As far as fixed-effects regressions, the
7 regressions presented by Witness Bradley by and large had
8 alpha intercepts greater than zero, and comported quite well
9 with the diagram in Dr. Hsiao's book, page 6, I believe
10 diagram 1, and the plotting of those -- of many of these
11 were quite consistent with the types of relationships found
12 by Dr. Bradley. Conversely, the plotting of a number of
13 these were quite consistent with a fixed-effects -- with a
14 100-percent variability.

15 Now, I plotted two sets of graphs in Exhibit 602.
16 By and large the graphs were representative of 100-percent
17 variability. In Exhibit 3, however, many of the graphs were
18 quite consistent with what Dr. Bradley was saying, and I
19 would expect them to be so on a facility basis, because
20 those are short-term relationships.

21 They do not measure the variability of costs over
22 the longer term during which the rates will be in effect,
23 and accordingly I would have been very surprised if they had
24 been anything other. What I found to be interesting was the
25 number of plots even on a short-term basis that were

1 consistent with 100-percent variability.

2 Q You're in agreement, however, that you categorized
3 data plots into three categories, and specifically if you
4 want to be precise here I'm looking at your Exhibit 603,
5 page 2 of 19, and the three categories are good agreement
6 with the fixed-effects regression, good agreement with the
7 pooled-effects regression, and the blob type of plot.

8 Correct?

9 A That is correct.

10 Q And according to your response to Interrogatory
11 No. 11, if a data plot appears to be a blob, then regression
12 on those data is not meaningful. That was your response to
13 Postal Service Interrogatory 11; correct?

14 A That is correct.

15 Q On Wednesday we gave your attorney eight data
16 plots as potential cross-examination exhibits. Do you have
17 those with you?

18 A Yes, I do.

19 MR. KOETTING: Mr. Chairman, if I could, I would
20 like to distribute those to anyone who's interested who
21 might need a copy.

22 CHAIRMAN GLEIMAN: Sure.

23 MR. KOETTING: I've handed the witness and
24 distributed copies of charts A through H, which have been
25 designated as USPS/OCA-T600-EX-1, and since I will be asking

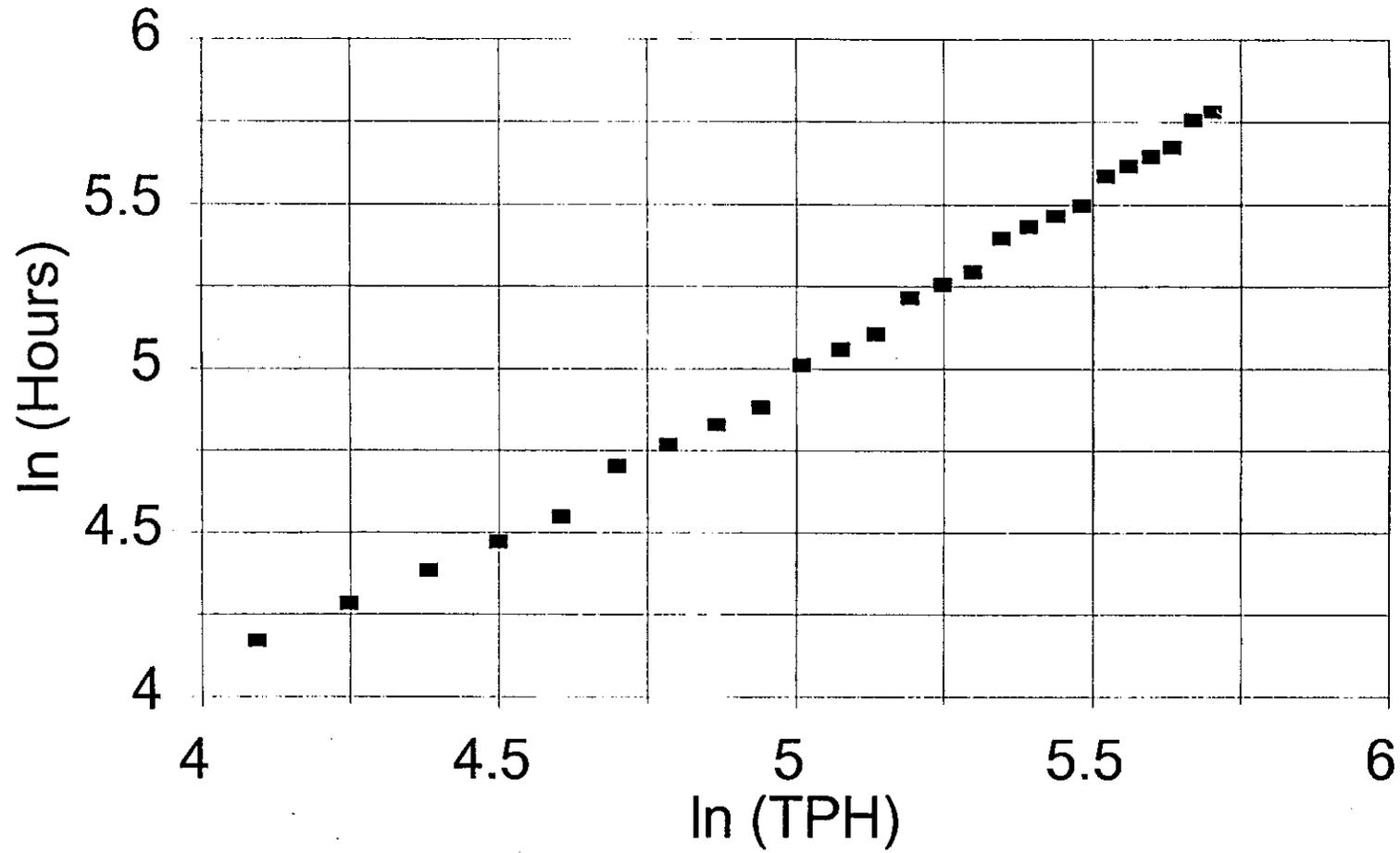
1 a variety of questions on these, I would ask that at this
2 point they be transcribed into the transcript, and I will
3 give the reporter two copies, if that's permissible.

4 CHAIRMAN GLEIMAN: Certainly, give the reporter
5 the copies, and I'll direct that the cross-examination
6 exhibit be transcribed into the record at this point.

7 [Cross-examination Exhibit
8 USPS/OCA-T600-EX-1, was received
9 into evidence and transcribed into
10 the record.]

11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

CHART A



USPS/OCA-T600-EX-1

CHARTS A-H

CHART B

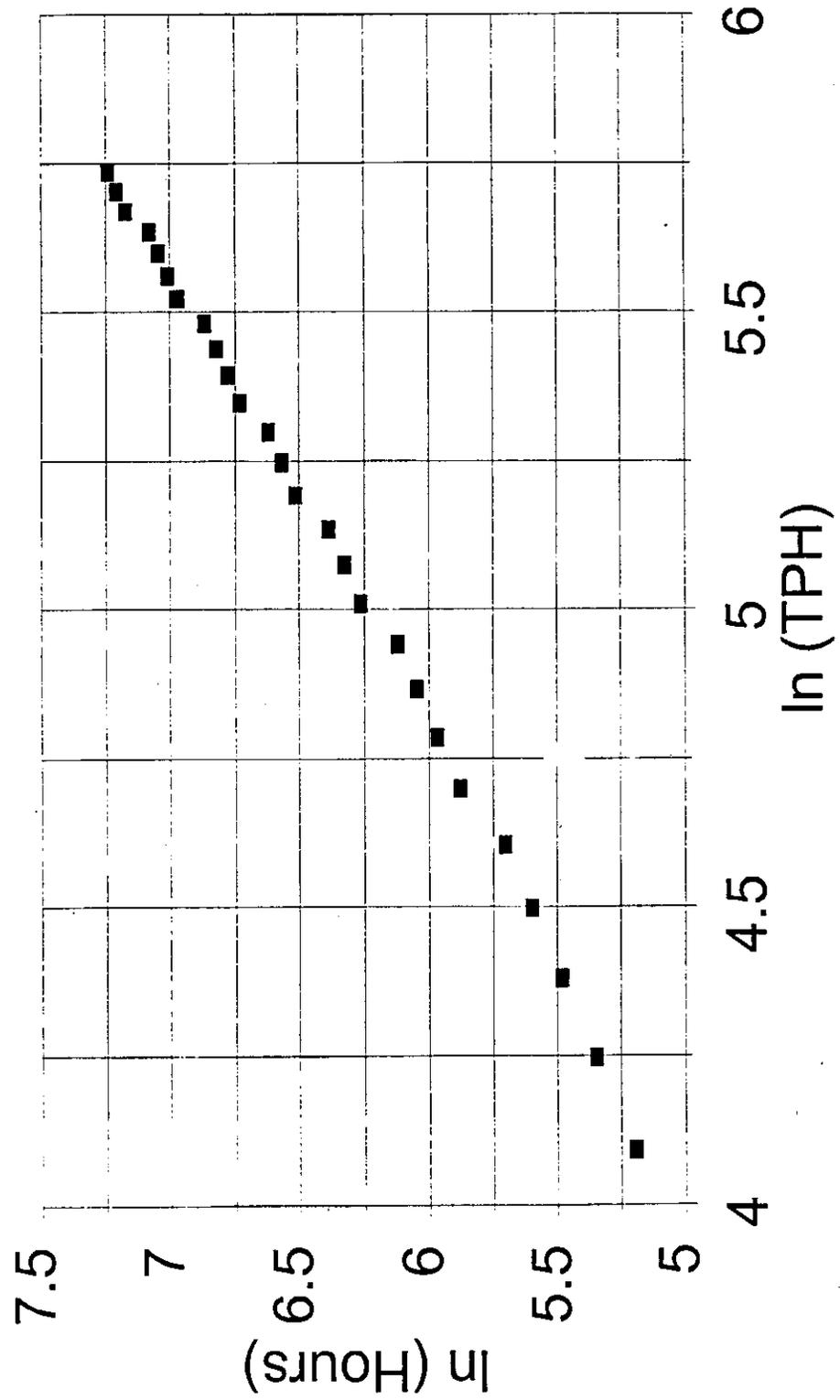


CHART C

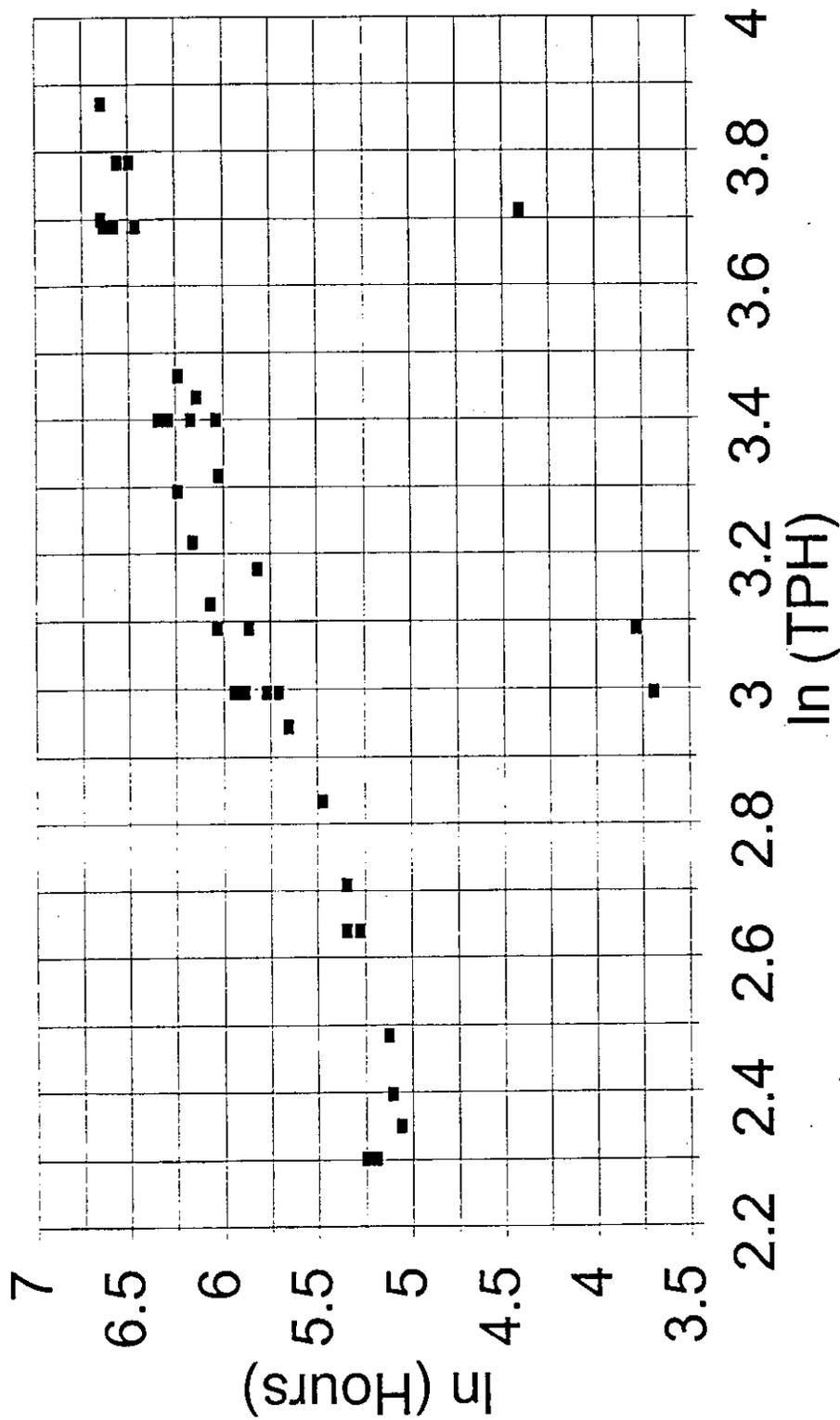


CHART D

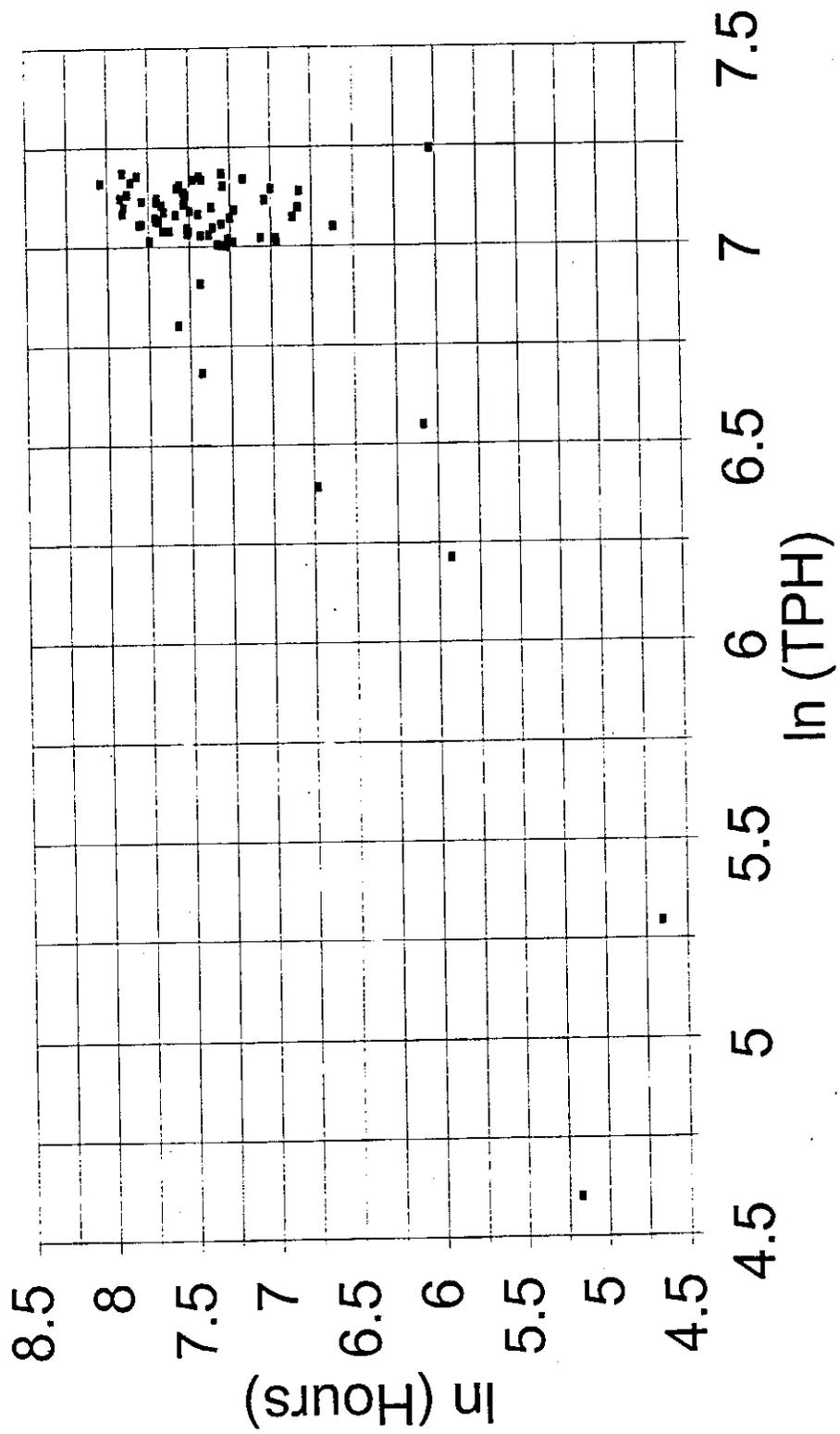


CHART E

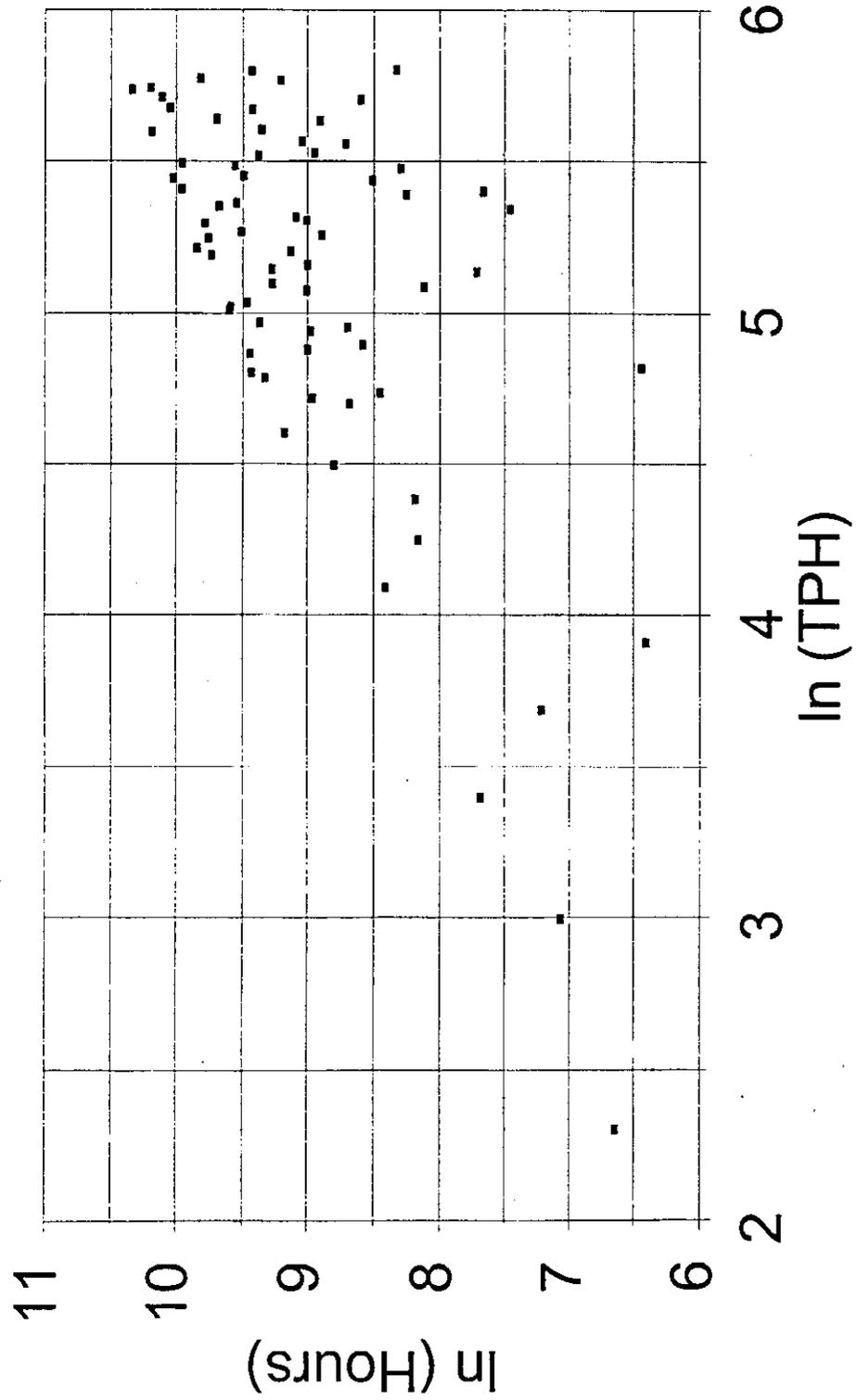


CHART F

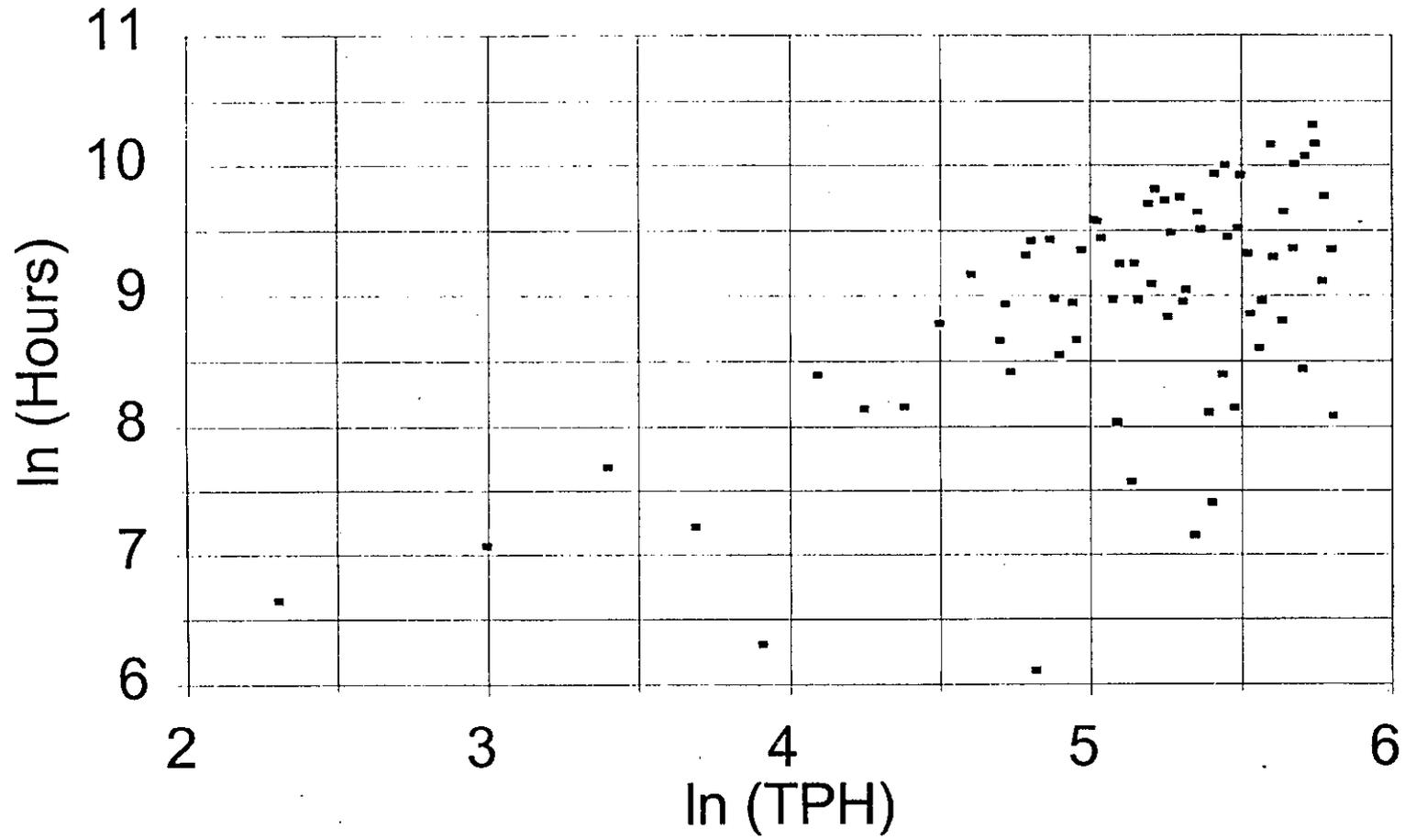


CHART G

ln(TPH) vs. ln(HRS)

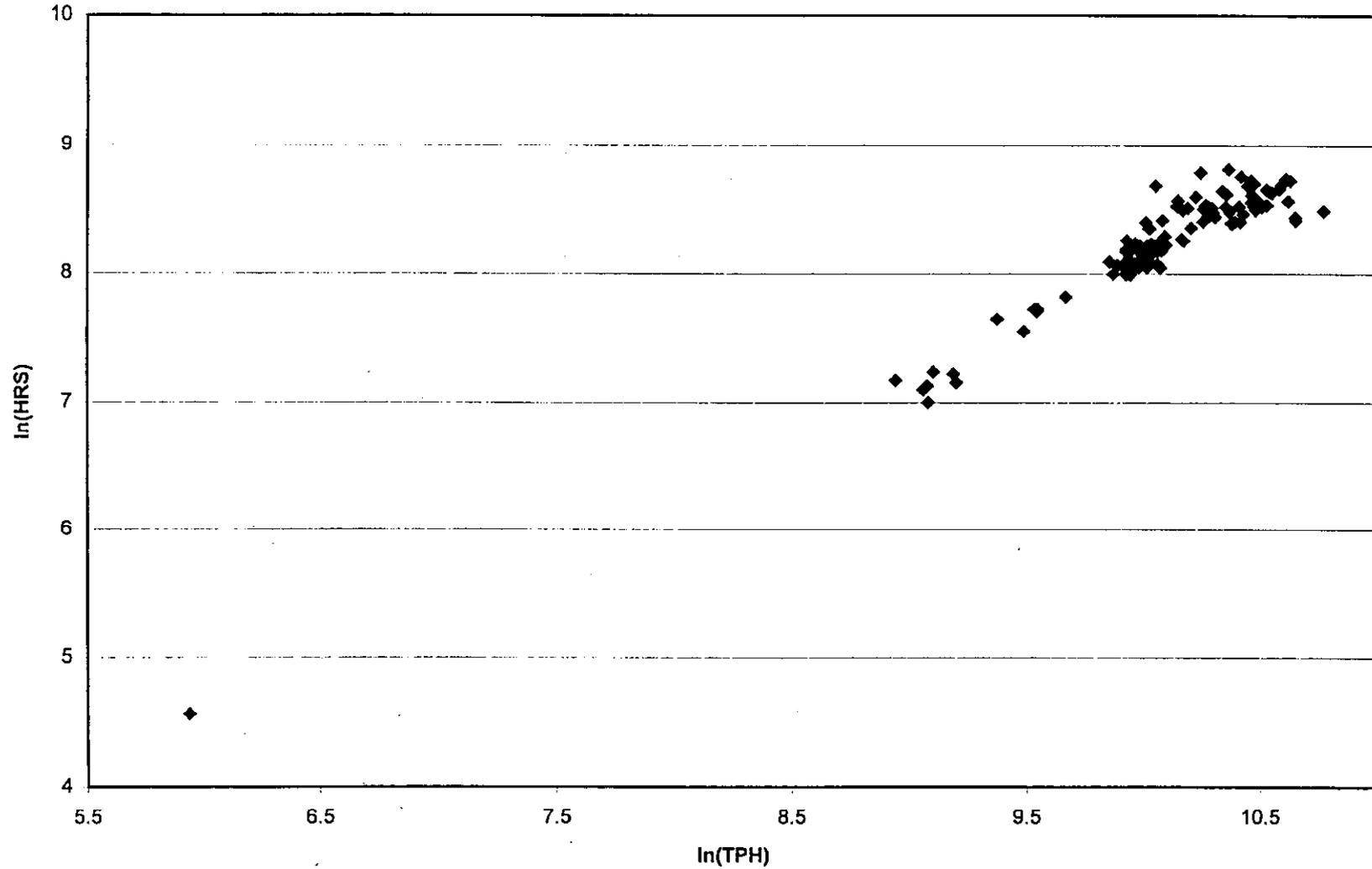
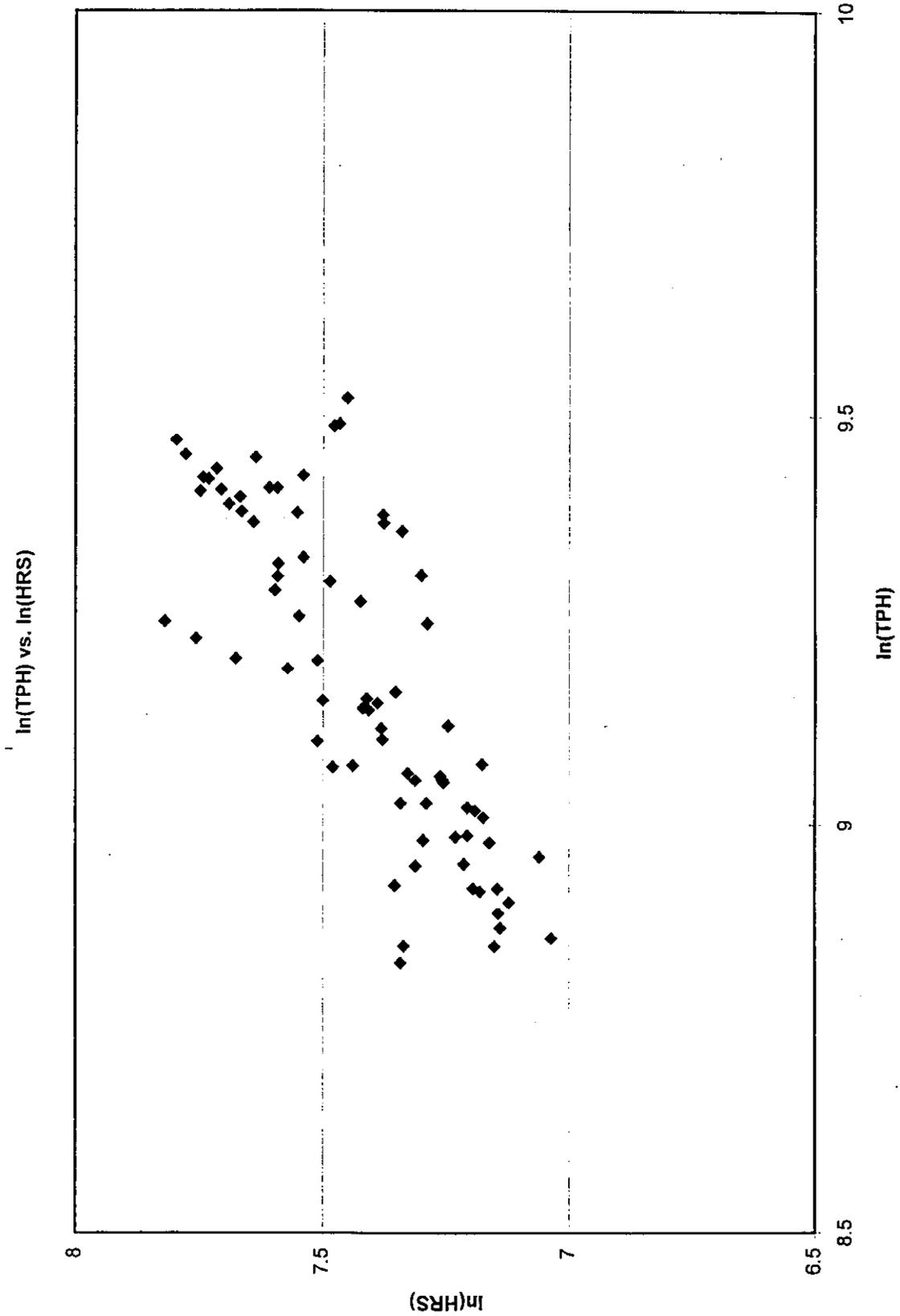


CHART H



1 BY MR. KOETTING:

2 Q Dr. Smith, what I'd like to do with these charts
3 is to go through each one, and I would ask you to tell us
4 whether or not in your opinion the plot is consistent with a
5 cost elasticity of 1, and with respect to your three
6 categories -- fixed effects, pooled effects, or blob --
7 which category would this particular plot fall in?

8 A When I looked at these, Mr. Koetting, I noticed
9 that none of them have the origin on them. The plots I
10 provided did have the origin on them. So I do not have the
11 spatial facility to extrapolate an origin onto these, and so
12 I really cannot from these plots give you a conclusion on
13 that issue.

14 Secondly, I notice that these are log versus log.
15 If these are aggregate -- if these are all the plots in the
16 data set, plotted log versus log in 602, then I could
17 discuss them in that context. In terms of 603 they were not
18 log-log plots, and I don't believe that they would be
19 consistent with what I was talking about. So I think
20 probably the answer to your questions, unless you can phrase
21 them differently, is you haven't provided me anything that I
22 can comment on.

23 Q Isn't the slope of the regression line in a
24 log-log plot the elasticity?

25 A That is my understanding under certain

1 circumstances.

2 Q So why would you need the origin to determine
3 whether or not the cost elasticity is 1 or consistent with
4 1?

5 A I believe that such a slope would go through the
6 origin. In any case I would like to see it with the origin
7 to see exactly what it looks like.

8 Q I did believe that you said you could go through
9 one of the exercises with regard to the 602.

10 A If you have them with a zero-zero origin, yes,
11 sir, I'd be happy to.

12 Q Oh, and that was contingent on having the origin.
13 But your point is without the origin you're incapable of
14 looking at the plot and telling what the cost elasticity is?

15 A Yes, Mr. Koetting, you yourself have pointed out
16 that when we're just looking at pictures, there is a certain
17 amount of visualization involved. That was your line of
18 questioning. And certainly that would include such things
19 as the origin. I'm kind of at sea without an origin.

20 Q Let's look at the portion of your testimony which
21 is labeled Roman 5, cost allocation standards, and that runs
22 from page 36 to page 40. And what I am generally trying to
23 explore here is what this adds to your presentation.

24 A Yes, sir.

25 Q Obviously, we know from the previous section of

1 your testimony that you disagree with Dr. Bradley's
2 conclusions and, therefore, you argue that the Commission
3 should not rely on his results. But with respect to cost
4 allocation standards, isn't there really only one truly
5 relevant cost allocation standard, and that is that
6 ratemakers should always use what they believe to be the
7 most accurate measures of costs that are available?

8 A Well, I think Dr. Bonbright gave four or five --
9 gave eight criteria that he felt would be relevant to the
10 evaluation of a regulatory study, and I will stick with Dr.
11 Bonbright's eight.

12 Q Can you think of a situation in which ratemakers
13 would want to use something other than what they believe to
14 be the most accurate available measure of cost?

15 A Yes, certainly.

16 Q Could you --

17 A To give you an example, one of the rules of
18 ratemaking is that rates should be in some cases gradual and
19 implemented. In the event of a radical change of cost,
20 frequently, there will be steps before a solution is fully
21 implemented. There's one example.

22 Q Now you're talking about prices, are you not? Is
23 the rule that --

24 A The rule is --

25 Q -- price rates, correct, should be gradual?

1 A Well, costs transfer into rate structures which
2 translate into prices.

3 Q But you are saying that the ratemakers should
4 ignore -- in deciding how to deal with a situation, they
5 should ignore the true cost and use something other than the
6 true cost in determining what are the best prices that they
7 can come up with under that situation?

8 A I didn't say that. I said sometimes it is
9 necessary to have such concepts as gradualism,
10 incrementalism, understandability and acceptability
11 implemented at the same time.

12 Q Again, are we talking about prices here or costs?

13 A Well, we are talking about the translation of
14 costs into prices, and a cost study has to meet the
15 standards that would permit it to be translated into a price
16 or a set of rates.

17 Q But the fact of the matter is the Commission
18 doesn't translate cost changes directly into price changes,
19 does it?

20 A By setting a certain level of cost allocation, you
21 are implicitly having a significant impact on the rate
22 structure.

23 Q Let's talk about the Postal Reorganization Act.
24 Pages 39 and 40 -- we'll get back to Bonbright, but on pages
25 39 to 40, you talk about the Postal Reorganization Act. Can

1 you point me to anywhere on those two pages where your
2 discussion, where your comments amount to anything more than
3 that the Act requires costs to be accurate, that in your
4 opinion Dr. Bradley's costs are not accurate, and that,
5 therefore, the Commission shouldn't use them?

6 A Those are certainly adequate summarizations of
7 many of my opinions. Now, your question is -- is there
8 anything more than? And I am not sure that there is, but I
9 would have to study this in detail. I don't -- I am not
10 sure that I see much more than that.

11 Q Well, let's look at a concluding sentence on page
12 40, concluding sentence of this section, I think it is on
13 the whole page. If Witness Bradley's methodology results in
14 a failure to attribute correctly the direct and indirect
15 costs to the appropriate class or type of mail, then there
16 would be no compliance with that provision of the Act. And
17 the provision of the Act that you are referring to there is
18 Section 3622(b)(3), is that correct?

19 A Whatever was quoted.

20 Q If you look over on the previous page, it is
21 3622(b)(3), I believe. The provision of the Act requiring
22 that each class or type of mail bear the direct and indirect
23 costs attributable. Wouldn't your sentence be just as true
24 if one inserted two words, "rejection of", at the beginning,
25 to make the sentence read, "If rejection of Witness

1 Bradley's methodology results in a failure to attribute
2 correctly the direct and indirect costs to the appropriate
3 class or type of mail, then there would be no compliance
4 with that provision of the Act."?

5 A If the Commission found that Witness Bradley's
6 study were correct, and if they found that it didn't meet
7 the usual provisions that they implement under the Act, then
8 I suppose it could be said to -- I would assume that your
9 conclusion would be correct. But I don't believe that the
10 Commission should find that Witness Bradley's methodology is
11 correct. In fact, I could go on at some length with its
12 theoretical deficiencies.

13 Q I understand that, and we are trying to -- that's
14 the previous sections of your testimony.

15 A Yes, sir.

16 Q And we are trying to focus on this section, see
17 what it adds to that. Therefore, isn't it true that all the
18 Act really requires in 3622(b)(3) is the most accurate
19 measurement available for costs?

20 A I can't offer you a legal opinion beyond what I
21 have said.

22 Q Well, would you agree that the issue before the
23 Commission in this case is whether more accurate costs are
24 based on the results of Dr. Bradley's methodology or on the
25 previously employed methodology?

1 A That was not my understanding of Witness Bradley's
2 testimony, where he stated that he was developing a
3 methodology for consideration. I did not see in that
4 testimony the statement that you are making.

5 Q Well, I agree, I wouldn't look to Dr. Bradley's
6 testimony to find the range of issues in this case.

7 A Mr. Koetting, that is all I am testifying on, is
8 Dr. Bradley's testimony.

9 Q Well, I thought you were testifying on your
10 testimony.

11 A Well, of course, I mean my testimony is about Dr.
12 Bradley's testimony, yes, to be exact.

13 Q And you are recommending the Commission not adopt
14 his testimony, correct?

15 A Because I believe it is inaccurate, yes, sir.

16 Q So in deciding to credit your submission, you are
17 putting before the Commission the choice of the accuracy of
18 the costs based on Dr. Bradley's methodology versus the
19 previously employed methodology, isn't that correct?

20 A Yes, sir.

21 Q And you're saying you are simply unaware of
22 whether there is any other witness in this proceeding
23 advocating for anything other than one of those two options?

24 A I am not an expert on that, no.

25 Q Well, I didn't ask you if you were an expert. I

1 am just asking you are you aware, is there any other witness
2 advocating that the Commission do something other than that?

3 A Other than what? I'm sorry.

4 Q Other than taking Dr. Bradley's variabilities or
5 going with the old methodology in which the variabilities
6 were essentially assumed to be 100 percent.

7 A That is my understanding of what -- of two of the
8 issues on the table and, quite frankly, I am not familiar
9 with all the other testimonies to the degree that I could
10 answer that question.

11 Q Let's talk about the Bonbright standards a little
12 bit. At the top of page 36, you claim that Dr. Bonbright
13 articulated the standards which a regulatory study should
14 meet, correct?

15 A Yes, sir.

16 Q Now, I called your counsel yesterday and requested
17 that you bring a copy of the 1961 Bonbright book that you
18 cite with you. Do you have that?

19 A I have it.

20 Q Could you look at page 291, which a page you
21 cited?

22 A I have it.

23 Q Is there anything on that page where Dr. Bonbright
24 says anything at all about regulatory studies, per se?

25 A Well, we might turn to the previous -- to the same

1 paragraph, previous page, and say -- What then are the good
2 attributes to be sought and the bad attributes to be avoided
3 or minimized in the development of a sound rate structure?
4 I believe that Dr. Bonbright is talking about rates at that
5 point.

6 And, of course, costs translate into rates one way
7 or another. So I would think that, to the degree that one
8 is a subject, that the same standards would be applicable.

9 Q But he is talking about something broader than
10 studies. He is talking about sound rate structure. That's
11 the heading under which he has presented the criteria which
12 you are describing, correct?

13 A Yes.

14 Q I mean he hasn't said these are the criteria you
15 apply to cost studies or regulatory studies, he says these
16 are the criteria you apply to a rate structure, correct?

17 A And I -- here it is either an explicit or implicit
18 assumption that if such standards are required of the
19 product, then, of course, such standards would be required
20 of the subproducts used to reach that product.

21 Q Well, let me explain why I think that the
22 differences are of some relevance. In the second page --
23 I'm sorry, in the second paragraph on page 36 of your
24 testimony, you claim that Dr. Bradley's study is incomplete,
25 that he failed to do adequate testing of alternatives, is

1 that correct?

2 A Probably. But where are you? Which line, please,
3 line number?

4 Q Second paragraph, lines 13 and 14.

5 A Where it says a third criterion? Let's start off
6 -- what page? I'm sorry. Let's --

7 Q Page 36.

8 A Okay. Now, page 36, line?

9 Q Fourteen -- 13, 14.

10 A I have got line 13 and 14.

11 Q Now, aren't you arguing that Dr. Bradley's
12 empirical study be rejected as incomplete in favor of an
13 assumption of direct proportionality that has never been
14 empirically tested?

15 A I am testifying that I don't believe Dr. Bradley's
16 study is adequate for decision making to be accepted and
17 implemented. It is up to the Commission as to what the
18 alternatives are.

19 Q But Dr. Bonbright says you have to have a sound
20 structure, correct?

21 A I assume so, yes.

22 Q And so the sound structure requires some
23 variability, elasticity -- variability, elasticity, call it
24 what you will, for mail processing costs, correct?

25 A That's correct.

1 Q And we have got Dr. Bradley's study, which you are
2 saying should be rejected because it is incomplete, and you
3 are citing Dr. Bonbright's standard to support that
4 completeness if relevant. And I asking, doesn't the
5 completeness criterion suggest that Dr. Bradley's study has
6 to be favored over an assumption that never been empirically
7 tested?

8 A Well, this Commission would also have the option
9 of requesting that the Postal Service bring a corrected
10 study that would be adequate. Such a study indeed might
11 find 100 percent variability or it might find Dr. Bradley's
12 conclusions, for all I know.

13 Q But my point is, you are criticizing a study,
14 saying it is incomplete but, by default, you are, therefore,
15 advocating utilization of an assumption that, by definition,
16 must be incomplete because it hasn't studied anything?

17 A I don't know by definition whether that is
18 complete or not, because I do not know the history of that
19 assumption or the basis on which the Postal Service has
20 implemented its rates in the past. I am really only talking
21 about general regulatory policy and, specifically, about my
22 views on Dr. Bradley's study. I really don't think I have
23 testified further than that.

24 Q Well, do the Bonbright factors suggest that the
25 soundness of the rate structure is enhanced by using

1 untested assumptions rather than empirical testing?

2 A I don't think that I am advocating that either. I
3 am telling you that I am commenting on Dr. Bradley's study,
4 and, mostly, in regulatory proceedings, the burden of proof
5 is on the applicant where they are proposing a change from
6 the existing practice. I don't think Dr. Bradley's study
7 meet that burden of proof.

8 Q What about on page 37, Dr. Bonbright's additional
9 criterion of free from controversy? Is the current
10 assumption of direct proportionality free from controversy?

11 A It certainly has been implemented up to this point
12 on an ongoing basis. For something to be implemented that
13 is free from controversy, if I may respectfully call it to
14 your attention, the submission from the Chairman earlier
15 today, which is in the record which shows that the
16 variability of some of these costs is all over the lot, so
17 to speak. That is clearly not free from controversy.

18 Q That wasn't my question. Is the assumed 100
19 percent variability any freer of controversy?

20 A I can only answer that on the basis of what I know
21 about this proceeding from the time that I, shall we say,
22 joined it, and when I came in this was the issue on the
23 table.

24 I don't know the history of controversy or
25 noncontroversy over this assumption prior to my taking up

1 the analysis of Dr. Bradley's study.

2 Q Well, my point again, and what I am trying to get
3 at here is what is the relevance of these Bonbright criteria
4 that you brought to bear in your testimony.

5 You are suggesting somehow that one of the reasons
6 why the Commission should reject Dr. Bradley's methodology
7 is because it is not free from controversy --

8 A Or complete or accurate.

9 Q No, but let's focus on free from controversy.
10 That is the point here on page 37.

11 A Fine.

12 Q And I am asking you how can the Postal Service
13 ever come in and improve its costing systems in ways that
14 have effects ranging in the hundreds of millions and
15 billions of dollars and expect there not to be controversy?

16 A By I think presenting a correct study.

17 Q You are saying in an adversarial rate proceeding
18 where rate payers are going to pay increased postage up to,
19 for individual mailers, amounts in the order of hundreds of
20 thousands and millions of dollars, they are going to by
21 consensus agree that what shifts costs -- and as you have
22 suggested thereby their rates -- in the upward direction,
23 they are not going to find some basis to challenge that and
24 thereby create controversy?

25 A I have been in many proceedings of a regulatory

1 nature in both the gas and the electric business where there
2 have not just been hundreds and thousands and millions of
3 dollars on the table but tens of millions and even hundreds
4 of millions of dollars on the table, and, yes, parties
5 always come in with differing approaches, but after there is
6 a full airing of the situation it is usually possible for
7 the Commission to arrive at some conclusion as to whether
8 the witness is correct or not and it becomes fairly obvious
9 after a complete airing of the situation, possibly over a
10 period of some years, as to what's what, so to speak, and in
11 fact many relatively new and interesting concepts -- such as
12 marginal cost, demand structures to take two -- have proven
13 to be very controversial initially and subsequently been
14 settled relatively clearly.

15 So, yes, it is possible for things to lack
16 controversy after they have been studied.

17 Q But let me be clear on what kind of controversy it
18 is that you are talking about.

19 The mere fact that someone comes in and files
20 testimony challenging a study doesn't create the type of
21 controversy you are saying should be a bar to the
22 Commission's adopting it, is it?

23 A No. The type of controversy that I am concerned
24 about is that we have a group of professional economists,
25 learned people with Master's and Doctorates who seem to come

1 up with very different answers and there seems to be no
2 clear way of distinguishing who is right and who is wrong
3 other than by having additional analysis or special
4 analysis.

5 In other words, there is no immediate agreement.
6 That I call controversy -- when I see a wide variety of
7 numbers without any apparent agreement on the modeling
8 techniques, the underlying database, the results, even
9 whether we ought to use fixed effects, random effects,
10 pooled variables, whether these should be time series, cross
11 section.

12 There is a lot of controversy there and I would
13 expect that eventually to be resolved.

14 Q Well, instead of wasting a lot of time arguing
15 about all these Bonbright standards, let me cut to the
16 chase, and this is going to sound familiar, I think.

17 It is Dr. Bradley's testimony that use of his
18 empirical results will improve the accuracy of the mail
19 processing costs relative to the previous assumption and
20 it's your testimony that use of his results will not or at
21 least might not improve accuracy.

22 Are we in agreement so far?

23 A I don't think so. My testimony is I believe Dr.
24 Bradley's study is wrong.

25 Q Okay. So it is your testimony that the use of his

1 results will not improve accuracy? Is that correct?

2 A Conceivably one might imagine on a random basis
3 that there might be a case in which that could be proven to
4 be true. I don't know.

5 I do know that the study is wrong and I would
6 certainly not expect the accuracy to be improved.

7 Q Okay. Fine. That's all I was looking for.

8 My question is now -- and I am asking you to
9 assume this for purposes of the discussion -- if the
10 Commission agrees with Dr. Bradley but his work shows that
11 the previous assumption is inconsistent with reality and
12 that his results lead to improved cost estimates, is there
13 anything in the Bonbright factors you discuss which suggest
14 that despite its finding on the merits the Commission should
15 nonetheless continue to employ what it now considers to be
16 the disproven assumption of 100 percent variability

17 A I'm sorry, your question -- if I may restate your
18 question, you are saying if Bradley should be shown to be
19 wrong --

20 Q No.

21 A -- shown to be correct, is there any reason that
22 the Commission should not represent -- should not implement
23 his study?

24 If he were correct, it would obviously be
25 implementable. If he is wrong, it is the burden of proof I

1 would think would be on the Postal Service to come in with a
2 correct study so that something could be done, and in the
3 absence of that correct study I would assume that the
4 Commission will give appropriate weight to what has been
5 presented and might very well elect to stay with the status
6 quo.

7 Q And they can reach that conclusion without
8 bothering to figure out what the Bonbright criteria tell us,
9 is that correct?

10 A The Bonbright criteria give us some thought about
11 what studies should look like and I am respectfully
12 suggesting that Dr. Bradley's study is deficient by those
13 criteria, which I think are important criteria in the
14 evaluation of the study.

15 Q Well, let me try this one more time.

16 Can you point me to anything in Bonbright that
17 tells the Commission that it should use anything in the best
18 possible cost that it has available?

19 A I have pointed you to things in Bonbright by which
20 studies -- by which Dr. Bonbright believes studies should be
21 evaluated, and that is all that I have done.

22 Q Have you ever been in part of a regulatory
23 proceeding where the decision-makers did not have to choose,
24 did not have to impose a decision because the parties
25 reached a consensus?

1 A Have I ever -- I'm sorry. I am going to have to
2 rephrase that just to make sure I understand.

3 Have I ever been in a regulatory proceeding where
4 the parties reached a consensus?

5 Q I think -- I think you may have correctly stated
6 the question as I did, but I think I need to restate my
7 question. Let me withdraw the earlier question and start
8 over again. I apologize.

9 Have you ever been part of a regulatory proceeding
10 where the governing body or the decision-makers had to
11 impose a decision because the parties could not reach a
12 consensus on methodological matters such as we have been
13 discussing?

14 A The Commission usually makes, usually weighs the
15 evidence and quite frequently regulatory proceedings are not
16 solved by consensus, sometimes they are, so the answer to
17 your question is yes, and I can cite other cases where the
18 answer would be no.

19 Q Can we go to Interrogatory Number 1, please.

20 A Yes, sir. I have it now.

21 Q This answer runs several pages and I am certainly
22 not suggesting that anyone who is interested not read the
23 entire answer, but what we asked you was to provide a list
24 of all published econometric studies that you have
25 performed.

1 Would it be true that if I look through those
2 pages that I would be unable to find any econometric study
3 that you have published?

4 A Exactly.

5 MR. KOETTING: That's all we have.

6 Thank you, Dr. Smith. Thank you, Mr. Chairman.

7 THE WITNESS: Thank you, Mr. Koetting.

8 CHAIRMAN GLEIMAN: Is there any follow-up cross
9 examination?

10 [No response.]

11 CHAIRMAN GLEIMAN: I would like to take a short
12 break, maybe five minutes, if we can, before we proceed.

13 [Recess.]

14 CHAIRMAN GLEIMAN: You were just asked about your
15 response to USPS/OCA-T-600-1, which asked you to provide a
16 list of all published econometric studies that you've
17 performed.

18 Are you an academic?

19 THE WITNESS: Only very briefly, Your Honor -- Mr.
20 Chairman. Sorry, sir.

21 CHAIRMAN GLEIMAN: People around here will tell
22 you that I don't deserve honor.

23 So while you may not have published in the sense
24 that academicians publish, you've done econometric studies.

25 THE WITNESS: Mr. Chairman, I've done quite a few

1 econometric studies. I did actually teach for three years
2 full-time, and about 10 years part-time for George
3 Washington University's nighttime program, three years at
4 Union College.

5 In terms of econometric studies, I performed
6 numerous econometric studies at Washington Gas, and these
7 may at one time or another have wandered into the regulatory
8 record. They certainly would have been there in many cases.

9 I don't have copies of that testimony, because I
10 didn't retain it by and large, and in fact I just discussed
11 with Mr. Richardson as to what to do about this, whether we
12 needed a redirect or whatever, but for the record I have
13 done a number of econometric studies.

14 CHAIRMAN GLEIMAN: Well, I just was curious,
15 because I know that people put great stock in publishing,
16 and that unless you're in an academic setting sometimes it's
17 not that easy to publish.

18 THE WITNESS: Mr. Chairman --

19 CHAIRMAN GLEIMAN: I have a publication in my
20 background that involves elasticities, and the Postal
21 Service might want to take notice of this. Unfortunately it
22 involves elasticities of erythrocytes. So I'm not sure that
23 it's totally relevant to our elasticities, but people do
24 publish when they're in an academic setting, and then
25 sometimes don't have an opportunity to later.

1 You were here earlier today when I asked some
2 questions of UPS Witness Neels?

3 THE WITNESS: Yes, I was.

4 CHAIRMAN GLEIMAN: I gave your counsel copies, as
5 I did others in the room, of the diagram and the table.
6 Could I ask you some questions that I asked earlier today to
7 get your views?

8 With respect to what we had designated as
9 Cross-Examination Exhibit No. 1 when I was questioning Dr.
10 Neels, that's the flow chart, their nested sequence of
11 models --

12 THE WITNESS: Yes, I have it.

13 CHAIRMAN GLEIMAN: Again, the diagram attempts to
14 describe nesting sequence of models discussed on the record
15 by Witness Bradley and others and the hypothesis tests that
16 were applied to determine whether the restrictions imposed
17 were justified statistically.

18 In your opinion does the diagram validly summarize
19 the nesting relationship of the models and indicate which
20 restrictions were tested and rejected by data?

21 THE WITNESS: I believe it is accurate; yes, sir.

22 CHAIRMAN GLEIMAN: Is it accurate to say that
23 Witness Bradley began his search in your opinion for an
24 estimation model by testing and rejecting the most
25 restrictive model that lacks the time-indexed coefficients

1 against the next most restrictive model that lacks
2 time-indexed coefficients?

3 THE WITNESS: I believe that's the case.

4 CHAIRMAN GLEIMAN: Did he then test to the best of
5 your ability to recall and reject the random-effects model
6 against the next most restrictive model that lacks
7 time-indexed coefficients?

8 THE WITNESS: He very definitely rejected the
9 random-effects model.

10 CHAIRMAN GLEIMAN: In your opinion is that why he
11 settles on a fixed-effects model that lacks time-indexed
12 coefficients?

13 THE WITNESS: I'm not sure why he chose to -- it
14 was very clear that getting rid of the random-effects model
15 was probably appropriate. We could debate that a little
16 bit. So I can understand why he would have gotten rid of
17 that. So that would leave him with either the fixed-effects
18 or the pooled model.

19 I think Dr. Bradley's cost function is wrong. I
20 don't think that he has a correct cost function. There are
21 deficiencies in it. He's got variables in it that shouldn't
22 be in it. There are variables that should be in it that are
23 not in it. It is in my opinion an incorrectly specified
24 cost function. And whether that caused him to reject the
25 pooled model or whether it was that his economic approach to

1 analyzing data by facility where he should -- where he's
2 looking at short-term rather than long-term that caused him
3 to reject the pooled model, he did this on the basis, as was
4 mentioned earlier, of a Houseman test, and therefore I don't
5 know which of those caused him to reject it.

6 If you wish, I can further amplify my concern with
7 his cost function or not, as you wish.

8 CHAIRMAN GLEIMAN: Would you?

9 THE WITNESS: Yes, sir. Actually this is fairly
10 long. It'll go quickly. But I would like to write it on
11 the board here.

12 CHAIRMAN GLEIMAN: Do you have a copy that you're
13 going to be able to provide?

14 THE WITNESS: I'd be happy to provide a copy. It
15 is from a book by Intrilligator.

16 MR. KOETTING: Mr. Chairman, I think at this point
17 I'd need to interpose an objection here that -- it sounds
18 like what I'm ready to hear from Dr. Smith is brand-new
19 testimony, and I believe the time has come and gone for
20 that.

21 As he admitted, his testimony finds fault with Dr.
22 Bradley's cost model. Well, the purpose of his testimony
23 was for him to lay out the fault he found with Dr. Bradley's
24 cost model, and that was due on December 30. How can we now
25 have a proceeding in which he comes in on February 27 with

1 entirely new faults with Dr. Bradley's cost model?

2 CHAIRMAN GLEIMAN: I don't -- I did not understand
3 that he was going to tell us about entirely new faults that
4 he had not raised before.

5 Mr. Richardson, do you know whether indeed these
6 are issues that were raised in the witness' testimony?
7 Could you tell me?

8 MR. RICHARDSON: Well, I believe they are, Mr.
9 Chairman, issues raised in his testimony, and I believe the
10 witness just asked you if you wanted amplification of the
11 cost function, and you had requested it.

12 CHAIRMAN GLEIMAN: I did, but I don't -- you know,
13 I don't want to get into additional rebuttal testimony that
14 was not previously made a part of the record. Is the
15 material that you're making reference to now, Mr. Smith,
16 something that was referenced in your testimony?

17 THE WITNESS: It is referenced in my testimony.
18 It is also referenced in an interrogatory that was given to
19 me, and that -- I can explain the interrogatory, if you
20 wish.

21 CHAIRMAN GLEIMAN: Perhaps if there's an
22 interrogatory response that you could refer to, that would
23 overcome the objection of Postal Service counsel.

24 THE WITNESS: Mr. Chairman, the interrogatory to
25 which I refer is USPS/OCA-T-600-6, in which they asked me to

1 discuss cost functions. That is what I am addressing right
2 now. And one of the possibilities is that an incorrectly
3 specified cost function caused Dr. Bradley to reject the
4 pooled model, which was how we got into this.

5 If you will turn to my answer, the second page of
6 my answer, where I say cost sub i T equals C of Y sub i TP
7 sub i TT, what it is saying is that for a cost function the
8 appropriate variables that would be in it would be Y, the
9 output, the relative input prices of each of the factors of
10 production, as well as a time variable.

11 In the case of Witness Bradley's model, which is
12 on his testimony at page 36, that would therefore exclude
13 such variables as log of MANR, log of MANR square, plus
14 possibly delta sub 8 and its subsequent variable, delta sub
15 10 and its subsequent variable, delta sub 11 and its
16 subsequent variable, delta sub 12 and the variable, delta
17 sub 14 and the variable, delta sub 15 and the variable.

18 A trans-log function which I was going to write
19 but possibly don't need to, since we're just talking theory,
20 would not have these variables, at least according to what I
21 have found in Intrilligator's book, where he quotes an
22 individual by the name of Christensen. Intrilligator's book
23 is a standard textbook, and that is maybe all that needs to
24 be said on that subject other than the wrong cost function
25 may very well have caused the pooled regression to be

1 rejected. It should at least be considered.

2 CHAIRMAN GLEIMAN: Thank you, Dr. Smith.

3 I have no further questions.

4 Any followup as a consequence of questions from
5 the bench?

6 MR. KOETTING: I do have one question.

7 FURTHER CROSS-EXAMINATION

8 BY MR. KOETTING:

9 Q Dr. Smith, with regard to your notion that Dr.
10 Bradley's model was misspecified, you certainly had the
11 opportunity to respecify the model, reestimate it, and
12 present your results, did you not?

13 A Theoretically I did; yes. Yes, sir.

14 Q And you failed to do that; correct?

15 A Well, as I indicated in another of the
16 interrogatories, the burden of proof is on the Postal
17 Service to present such a corrected model.

18 Second of all, Dr. Bradley did not provide the
19 necessary data, nor did the Postal Service. We're operating
20 here trying to estimate a cost function in which there are
21 no costs and the Postal Service has eliminated the
22 interrelationship between capital and labor, which is very
23 important in determining how costs vary as sites expand and
24 contract and are added onto. So in terms of doing an actual
25 cost study, most of the data are not there.

1 So no, I really didn't have an opportunity to redo
2 Dr. Bradley's study other than to redo it exactly as he had
3 done it.

4 Q Did your counsel request any of that material in
5 the discovery process to determine whether it would be
6 available for you to use or not?

7 A No, we did not request it.

8 MR. KOETTING: I have no further questions.

9 CHAIRMAN GLEIMAN: That brings us to redirect.
10 Mr. Richardson, would you like some time with your witness?

11 MR. RICHARDSON: Yes, Mr. Chairman, just a couple
12 minutes.

13 CHAIRMAN GLEIMAN: Certainly.

14 [Discussion off the record.]

15 CHAIRMAN GLEIMAN: Mr. Richardson.

16 REDIRECT EXAMINATION

17 BY MR. RICHARDSON:

18 Q Dr. Smith, in response to one of the questions,
19 you stated that data limitations prevented you from doing a
20 study. Were there any other reasons that you did not do a
21 full study?

22 A In looking at what needed to be done, there was a
23 fundamental recasting of the study that would be needed,
24 lots of changes to it. We discovered this. We took a look
25 at the amount of work involved. We did have 2,000 hours to

1 devote to it. We understood the original study encompassed
2 about 2,000 hours or more of work. This would be a major
3 redo, an entire redo of Dr. Bradley's work in the course of
4 a month or two, and that just wasn't feasible.

5 Q And did you run any regressions in the course of
6 your analysis for this?

7 A During the analysis of the study, although I
8 didn't include any here, I of course ran various
9 miscellaneous regressions, particularly to take a look at
10 the underlying form of the data where I was asking were the
11 slopes equal across the facilities.

12 This subsequently became a request from the
13 chairman's office as to -- for comment on that, and in fact
14 I had done some work taking a look at the underlying data to
15 see if the slopes were equal for each of the beta sub i, and
16 had concluded that they weren't.

17 Q Thank you.

18 MR. RICHARDSON: I have no further questions, Mr.
19 Chairman.

20 CHAIRMAN GLEIMAN: Is there any followup as a
21 consequence of redirect?

22 If not, then, Dr. Smith, we appreciate your
23 appearance here today and contributions to the record, and
24 if there's nothing further, you're excused.

25 THE WITNESS: Thank you, Mr. Chairman.

1 [Witness excused.]

2 CHAIRMAN GLEIMAN: Mr. Miller, if you could
3 identify your witness -- if you could introduce your witness
4 so that I could swear her in.

5 MR. MILLER: Mr. Chairman, testifying on behalf of
6 the National Federation of Nonprofits is Carolyn A. Emigh.
7 Whereupon,

8 CAROLYN A. EMIGH,
9 a witness, was called for examination by counsel for the
10 National Federation of Nonprofits and, having been first
11 duly sworn, was examined and testified as follows:

12 CHAIRMAN GLEIMAN: Please be seated. Good to see
13 you again. You are in a different chair this time.

14 Counsel, if you would like to introduce the
15 witness's testimony.

16 DIRECT EXAMINATION

17 BY MR. MILLER:

18 Q Ms. Emigh, do you have a copy of your direct
19 testimony?

20 A Yes, I do.

21 Q Did you prepare this testimony?

22 A I did.

23 Q Do you have any corrections or changes to make to
24 your testimony at this point?

25 A I do.

1 Q Would you tell us what those are?

2 A On page 14 -- turning on page 15 to the chart on
3 Table A, on page 15, Table 1, the second line, that reads
4 "running across regular nonautomation three-digit,
5 five-digit presort" and the next column says "zero
6 percent" -- that should be "two percent" and as a result of
7 that small error then I have to change, going across that
8 row, 19 percent, I have to change the next number "19" to
9 "17".

10 Then on page 17, the last page, at the top of that
11 page it says Table 2. On the right column, "average
12 differential per rate category" the first entry "17
13 percentage points" -- that has to be changed to "16".

14 Q Are those the only changes or corrections?

15 A Then there is one more change that has to be made,
16 and that is on 14.

17 Q What is that?

18 A The first sentence of the first full paragraph
19 should now read, "For pieces in the second presort tier
20 within the nonautomation rate category the postal management
21 proposes to" -- and that should be "increase" the rate --
22 and then the next phrase should be by "2 percent for mail
23 that serves a commercial purpose, but raise the rate by 19
24 percent for nonprofit mail."

25 And then at the beginning of the next sentence,

1 "In effect the postal management claims that it costs little
2 more than before to process a piece of commercial mail that
3 fails the characteristics needed in order to process it."

4 Q Ms. Emigh, are those all the changes now?

5 A Yes.

6 MR. MILLER: Well, Mr. Chairman, if there are no
7 more changes then I would like to move for the admission of
8 Ms. Emigh's testimony and exhibits to the record.

9 CHAIRMAN GLEIMAN: Are there any objections?

10 Hearing none, Ms. Emigh's testimony and exhibits
11 are received into evidence, and I direct that they be
12 transcribed into the record at this point.

13 [Direct Testimony and Exhibits of
14 Carolyn A. Emigh, NFN-T-1, was
15 received into evidence and
16 transcribed into the record.]

17
18
19
20
21
22
23
24
25

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

))
POSTAL RATE AND FEE CHANGES, 1997))
_____))

Docket No. R97-1

TESTIMONY OF
CAROLYN A. EMIGH
CONCERNING RATES FOR NONPROFIT STANDARD MAIL (A)
ON BEHALF OF
NATIONAL FEDERATION OF NONPROFITS

Please address questions
about this document to:

George E. Miller
Nonprofit Service Group
Suite 400
1250 24th Street, N.W.
Washington, D.C. 20037
202/466-6620

Robert S. Tigner
National Federation of
Nonprofits
Suite 822
815 15th Street, N.W.
Washington, D.C. 20005-2201
202/466-6620

December 30, 1997

Counsel for the National
Federation of Nonprofits

Autobiographical Sketch

My name is Carolyn A. Emigh. I am a principal in the Non-profit Service Group ("NSG"), a consulting firm that provides legal, economic, accounting, and management consulting services to nonprofit organizations. NSG has its headquarters at 1250 24th Street, NW, Suite 400, in Washington, DC 20037.

I was graduated from Pitzer College, a member of the Claremont Colleges, in Claremont, CA, in 1970 with a concentration in economics and international relations. In 1969, I studied at the Institut d'Etudes Francaises in Avignon, France. In 1972, I completed the two-year graduate program at The John Hopkins University School of Advanced International Studies in Washington, DC and Bologna, Italy.

I have also studied industrial organization (antitrust economics) at the graduate level at The George Washington University and currently am a third year student at the School of Law at Washington University in St. Louis, MO. The late Dr. W. Edwards Deming was my mentor in the application of statistical methods to management of business, industry, and government.

From 1972 to 1980, I served in the United States Senate and House of Representatives. In the Senate, I was Economic Policy Advisor to the Majority Leader. I served as professional staff economist to the Oversight and Investigations Subcommittee of the House Interstate and Foreign Commerce Committee.

I. Overview

A. Fair and equitable nonprofit rates: Congressional policy reflects historical results.

A regulated rate scheme should be perceived to produce fair rates. Two pieces of mail--each having the same handling characteristics, and each receiving the same level of service--should pay the same rate, all other things being equal.

In the case of commercial and nonprofit Standard A mail, ratepayers expect to pay different rates for two reasons. First, historically nonprofit mailers tend to produce consistently lighter weight, more uniformly shaped pieces of mail than do their commercial counterparts. Thus, the "attributable" (or "direct") cost to process the nonprofit Standard A mail stream was--and still is--substantially less than the direct costs to handle the commercial Standard A mail stream.

Second, in the Revenue Forgone Reform Act, Congress directed rate regulators to set the "institutional" (or "overhead") costs of nonprofit mail at no more than one-half of the mark up used to assign the Postal Service's overhead costs to the comparable rate category of commercial mail. The policy objective was that nonprofit mail should be charged less than the comparable commercial rate within each rate category, but nonprofit rates should move in tandem with their respective comparable commercial rate.

Thus, everyone expects that mail that serves a nonprofit purpose will pay a lower rate than the comparable commercial

relationship between nonprofit and commercial Standard A rates and from the relationship that Congress envisioned when it enacted the Revenue Forgone Reform Act. That the Postal Service has departed from this historical sense of fairness is unfortunate for a number of reasons.

One reason is that, uncorrected, nonprofit organizations will be compelled to find a way to inject fairness back into the rate scheme. One way is for Congress to make the policy subsumed in the Revenue Forgone Reform Act more explicit.

The Postal Service proposal departs from the historical relationship in that it seeks to adjust some of the rates of otherwise comparable nonprofit and commercial pieces in opposite directions. That is, postal management proposes to increase the rate for a piece of nonprofit mail and roll back the rate for a comparable piece of commercial mail. In these instances, the differential that postal management proposes between the two disparate rates of change is enormous. Table I below quantifies these proposed differentials.

In other instances, postal management proposes to raise or lower the rate for both nonprofit and commercial pieces within the same rate category, but the proposed differential is so large as to be discriminatory on its face. Part II of this document quantifies the rates of change between comparable nonprofit and commercial pieces of mail.

Because handling, hence costing, characteristics are virtu-

disparate treatment within the Standard A rate categories of mail that qualify for processing by the automated sorting equipment. Postal management repeatedly promised rate reductions, or at least to slow down the rate of increase, for mailers who financed the tremendous costs to produce mail that the automated sorting equipment could read and process at optimum speed.

With one exception, postal management's proposal makes good on that promise for commercial Standard A mail, but they would penalize the comparable nonprofit piece. Again, this is discriminatory on its face. The automated processing equipment cannot distinguish between a piece of a mail that serves a nonprofit as opposed to a commercial purpose.

The one exception is the automation rate category within the Enhanced Carrier Route Subclass for letters. There, postal management seeks to raise the rate for both nonprofit and commercial by eight percent, an amount that's between three and four times as great as the rate of increase of inflation. The magnitude of that proposed increase, coming on top of the cost to prebarcode and sort by carrier route, sounds like a penalty, not a reward, in that case for both nonprofit and commercial Standard A mail.

In contrast, both commercial and nonprofit Standard A mailers, but particularly nonprofits, kept their end of the bargain. Since reclassification, about 45 percent of nonprofit Standard A mail pays the "Automation Presort" rate versus 37 percent of commercial Standard A mail, according to the Postal Service's compilation called "Revenue, Pieces, and Weight by

respond to nonprofit intervenors' discovery attempts to explain what accounts for these proposed anomalous asymmetrical rates of change, postal management has ducked, dodged, and obfuscated.

Second, Ph.D. economists with many years of professional experience at both the Postal Service and Postal Rate Commission have been unable to unearth the full explanation. Admittedly, there is a limit to what these experts could uncover because the cost to access the Postal Service's data base and establish the accuracy of postal management's computations is prohibitive to nonprofit mailers.

Perhaps if nonprofit mailers could divert hundreds of thousands of dollars of charitable contributions to pay for computer time and specialists, they could discover how postal management has manipulated its cost data to produce these disparate rates of change.

It is also possible, however, that postal management has so skillfully covered its tracks that nonprofits might not be able to discover the answer even if they were able to raise hundreds of thousands of dollars from the public to pay for extensive computer analysis.

If the rationale for such disparate rates of change for comparable pieces of nonprofit and commercial mail were legitimate cost differences, one would think that postal management would lay these cards openly on the table. What would there be to hide, except perhaps mismanagement or misestimation? If there were mismanagement or miscalculation, however, it is grossly

whether they represent "identifiable relationships between the rates or fees charged" comparable pieces of nonprofit and commercial Standard A as required by Sec. 3622(b)(1), (3), and (7) of the Postal Reorganization Act.

Congressional intent is thwarted if nonprofit mailers are unable to learn the postal monopolist's explanation for what appears on its face to be a discriminatory pricing scheme.

The anomalous asymmetrical differentials that postal management proposes for comparable pieces of nonprofit and commercial mail appear to circumvent the policy objective that Congress intended in the Revenue Forgone Reform Act, namely that changes in nonprofit rates would track changes in the comparable commercial rate. Moreover, rate regulation that cannot compel the Postal Service to lay its cards openly on the table or that does not provide rate relief when the monopolist leaves cards up its sleeve is regulation in form only.

Notwithstanding postal management's behavior toward nonprofit Standard A mail as manifested in its proposed rate scheme before the Commission, this proceeding may yet produce fair and equitable rates if the Commission were to be guided by the policy that Congress embedded in the Revenue Forgone Reform Act.

D. Conclusion

Postal management has not made its case that legitimate cost differences justify otherwise discriminatory pricing. Absent full disclosure and an opportunity to rebut, the Commission at a

II. Analysis of Proposed Disparate Rates of Change

Within the two Standard A rate subclasses for letter size mail pieces are nine rate categories. In two-thirds of those rate categories, the Postal Service proposes to adjust the rates of otherwise comparable nonprofit and commercial pieces in opposite directions. That is, within one rate category, postal management proposes to raise the rate for a piece of nonprofit mail while the rate for a comparable piece of commercial mail be rolled back.

For example, consider the non-automation rate category for letters within the Regular Subclass. Whether the piece serves a nonprofit or a commercial purpose, neither piece may be processed using the Postal Service's automated sorting equipment.

As for work sharing, there are two groups within the non-automation rate category: pieces that are sorted by like three- and five-digits and those residual pieces without even sufficient density for the mailer to sort them by three- and five-digits. That level of presort is called "basic."

With respect to the non-automation rate category at the basic presort level, the Postal Service has to do the maximum amount of work to process those pieces of mail, whether the piece serves a commercial or nonprofit purpose.

Despite these fundamental similarities in the lengths that the Postal Service has to go to in order to process each piece, the postal management proposes an absolute rollback of four

Table I

Proposed Change in Standard A Mail Rates
for Commercial and Nonprofit Letters

Asymmetric Rates of Change

Subclass	Rate Category	Com- mercial	Non- profit	Differential in Percentage Points
Regular	non-automation, basic presort	-4%	20%	24
Regular	non-automation, 3-/5-digit presort	^{2%} 0%	19%	±9/2
Enhanced Carrier Route ("ECR")	saturation	1%	-17%	18
ECR	high density	1%	-16%	17
Regular	automation, basic presort	3%	18%	15
ECR	basic presort	9%	-3%	12
Regular	automation, 3- digit presort	0%	11%	11

Not only does postal management propose asymmetric rates of change for seven of the nine rate categories of Standard A letter-size mail, but also note the magnitude of the differential between the proposed rates of change for commercial and nonprofit Standard A mail. The smallest differential is 11 percentage points, and the largest is 24.

The magnitude of the differential for Standard A non-letter size mail is even greater. There are 17 rate categories for this type of Standard A mail. Two rate categories are omitted from

Table II
 Magnitude of the Differential
 Between Nonprofit and Commercial Standard A Mail
 as Proposed by the U.S. Postal Service

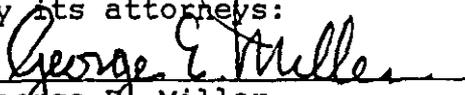
	Average Differential Per Rate Category
Letters, Regular and ECR Subclasses (7 rate categories)	17 16 percentage points
Non-letters, Regular and ECR Subclasses (13 rate categories)	20 percentage points

Given the enormous differential in the proposed rates of change for mail that basically has similar characteristics relative to postal processing, one would expect that postal management could explain fully the economic reason for such disparate treatment.

That they have chosen not to and have resisted nonprofits' efforts to obtain full disclosure through discovery leads to the conclusion that discriminatory pricing is at work. This conclusion is buttressed further by the inability of recognized independent experts to penetrate postal management's data compilations and computations to determine how such disparate rates of change were generated for comparable pieces of nonprofit and commercial standard A mail.

Respectfully submitted

National Federation of Nonprofits
By its attorneys:



 George E. Miller
 Nonprofit Service Group

December 30, 1997

1 CHAIRMAN GLEIMAN: Ms. Emigh, have you had an
2 opportunity to examine the packet of designated written
3 cross-examination that was made available earlier today?
4 Those are your previous written responses to interrogatories
5 that have been designated?

6 THE WITNESS: Yes, sir.

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

10 THE WITNESS: To the best of my knowledge.

11 CHAIRMAN GLEIMAN: That being the case, I am going
12 to provide two copies of the designated written
13 cross-examination of the witness and to the reporter and
14 direct that it be accepted into evidence and transcribed
15 into the record at this point.

16 [Designation of Written
17 Cross-Examination of Carolyn A.
18 Emigh, NFN-T-1, was received into
19 evidence and transcribed into the
20 record.]

21
22
23
24
25

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, DC 20268-0001

Postal Rate and Fee Changes, 1997

Docket No. R97-1

DESIGNATION OF WRITTEN CROSS-EXAMINATION
OF NATIONAL FEDERATION OF NONPROFITS
WITNESS CAROLYN A. EMIGH
(NFN-T1)

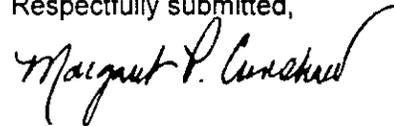
Party

United States Postal Service

Interrogatories

USPS/NFN-T1-1-25

Respectfully submitted,



Margaret P. Crenshaw
Secretary

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-1. Please refer to page 3 of your testimony. You state that, "historically nonprofit mailers tend to produce consistently lighter weight, more uniformly shaped piece of mail than do their commercial counterparts."

a. Please identify all of the subclasses and rate categories to which your statement applies.

b. For each subclass and rate category identified in subpart (a), please provide the (i) total cost, (ii) the total unit cost, (iii) identification of the applicable commercial counterpart, (iv) the total cost of the commercial counterpart, and (v) the total unit cost of the commercial counterpart.

RESPONSE

a. All Standard Mail subclasses and rate categories differentiated by letter, flats, and parcels.

b. We do not have these data.

RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE

USPS/NFN-T1-2. Please refer to page 3 of your testimony. You state that, "historically nonprofit mailers tend to produce consistently lighter weight, more uniformly shaped piece of mail than do their commercial counterparts."

- a. Please provide all of the information that informs your conclusion that nonprofit mailers tend to produce consistently lighter weight pieces relative to commercial mailers. To the extent such information has already been filed in this docket, please provide citations.
- b. Please provide all information that informs your conclusion that nonprofit mailers tend to produce consistently more uniform shaped pieces of mail. To the extent such information has already been filed in this docket, please provide citations.
- c. Please explain the extent to which the alleged lighter weight characteristic of nonprofit mail for the subclasses and categories identified in your response to subpart (a) of USPS/NFN-T1-1 contributes to a lower cost for each such nonprofit subclass or rate category. Please show all calculations.
- d. Please explain the extent to which the alleged uniform shape characteristic of nonprofit mail for the subclasses and categories identified in your response to subpart (a) of USPS/NFN-T1-1 contributes to a lower cost for each such nonprofit subclass or rate category. Please show all calculations.

RESPONSE

- a. Studies and analyses by Dr. John Haldi prior to this rate case; application of neoclassical microeconomic analyses to the enterprise of direct response fund raising; more than fifteen years empirical, firsthand observation of nonprofit direct mail pieces.
- b. See T1-1a. above.
- c. I don't know whether it does.
- d. I don't know whether it does.

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-3. Please refer to page 3 of your testimony. You state that, "in the Revenue Forgone Reform Act, Congress directed rate regulators to set the institutional (or overhead) costs of nonprofit mail at no more than one-half of the mark up used to assign the Postal Service's overhead costs to the comparable rate category of commercial mail. The policy objective was that nonprofit mail should be charged less than the comparable commercial rate within each rate category, but nonprofit rates should move in tandem with their respective comparable commercial rate."

- a. Please provide all quotations, with corresponding citations, to the legislative history of the RFRA that support for your contention that a policy objective of the RFRA was that nonprofit rates move "in tandem" with their respective commercial rates.
- b. Please provide a definition of the use of the term "rate category" in the second sentence quoted above.
- c. Is it your understanding that the RFRA's institutional cost contribution formula in 39 U.S.C. § 3626(a)(3)(B) applies at the rate category level or the subclass level? If the former, please provide all quotations, with corresponding citations, to the legislative history of the RFRA that support your conclusion in this regard.
- d. Please provide your definition of "movement in tandem."
- e. Does your definition of "movement in tandem" have any tolerance for variance in the percentage increase of nonprofit relative to corresponding commercial category? If so, what is the upper bound of the variance, in percentage terms, that you would consider to still represent a movement in tandem?
- f. Please confirm that as a result of Docket No. R94-1, commercial third-class mail rates increased 14.0 percent, and nonprofit rates increased 3.9 percent.
- g. Would it be fair to characterize the relative rate changes for commercial and nonprofit mail as a result of R94-1 as moving in "tandem?" Please explain your response.
- h. Would you describe the relative rate changes that commercial mailers and nonprofit mailers experienced as a result of Docket Nos. MC95-1 and MC96-2 as moving in "tandem?" If your response is affirmative, please explain.

RESPONSE

- a. We haven't been able to locate any by the time of the return date for these interrogatories.
- b. We ascribe to "rate category" its common meaning in the rate case.
- c. Subclass level.

d. By "movement in tandem" we mean to convey a trajectory in the same general direction, although the slopes of the respective curves may not be identical.

e. See T1-3d. above.

f. Confirmed.

g. It meets the test of T1-3d. above.

h. Yes, where rates moved in the same relative direction although respective rates of change may differ.

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-4. Please refer to page 4 where you state that, "[h]istorically, the nonprofit rate has been about one-half of the comparable commercial rate."

- a. Please identify all factors that you believe have contributed to this rate relationship.
- b. Please explain the span of time that your statement considers.
- c. Please provide a table or chart showing this historical pattern.
- d. To what extent has the pattern you describe in your statement been driven by statutory prescription of the method by which nonprofit rates should be determined? Please explain your response.

RESPONSE

- a. We are unable to identify all factors.
- b. Postwar period.
- c. We are searching for a chart. We are unable to collect and compile the data by the return date. In contrast, these data should literally be at the Postal Service's fingertips.
- d. There isn't any question but that statutory prescription has impacted the pricing relationship between nonprofit mail rates and their respective commercial counterparts.

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-5. Please refer to page 4 of your testimony.

You state:

"An analysis of the rate of increase or decrease that the Postal Service proposes for each of the 26 rate categories of Standard A mail reveals that, in almost 90 percent of the categories, the proposed rates of change for nonprofit and comparable commercial rates are asymmetrical."

- a. Please define "asymmetrical" as it is used in this passage.
- b. Please list the 26 rate categories referred to in this passage, as well as the proposed commercial and nonprofit rates (Step 5) for those categories and the differential between such proposed nonprofit rates and the corresponding commercial rates.
- c. Please confirm that Table I on page 15 of your testimony shows that in the seven categories for which "asymmetric" changes are allegedly proposed, nonprofit rates are proposed to decrease in three of the categories, while commercial rates are proposed to decrease in only one of the categories.
- d. Is it your understanding that commercial and nonprofit classification reform also resulted in many "asymmetric" changes? If your response is negative, what is your understanding of the relative rate changes, by category, that resulted from the two classification reform initiatives?
- e. If your response to subpart (d) is affirmative, is it your understanding that nonprofit mail was more frequently the beneficiary of the asymmetric changes in classification reform? Please explain your response.
- f. Aside from category comparisons, is it your understanding that, while commercial classification reform was essentially contribution neutral, nonprofit classification reform resulted in a lower test year (FY95) contribution? If this is not your understanding, please explain what you believe the relationship between test year before and after rates contribution was for both commercial Standard Mail (A) (Regular and ECR) and nonprofit Standard Mail (A) (Nonprofit and NECR).

RESPONSE

- a. By "asymmetrical" we mean that the rates of changes move in opposite directions.

- b. See Attachments A - ^c~~b~~.
- c. Confirmed.
- d. Yes.
- e. How do you define "more frequently the beneficiary?"
- f. Yes.

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-6. Please refer to pages 4 and 5 of your testimony where you state, "[p]ostal management's proposal departs from both the historical relationship between nonprofit and commercial Standard A rates and from the relationship that Congress envisioned when it enacted the [RFRA]."

- a. Please define the "historical relationship" that you claim "Congress envisioned."
- b. Please provide all quotations, with corresponding citations, to the legislative history of the RFRA that support the claim that Congress envisioned the "historical relationship" as you have defined it in subpart (a).

RESPONSE

- a. By "historical relationship" we mean the ratio of nonprofit and commercial Standard A Mail rates over the postwar period.
- b. We haven't been able to locate any by the time of the return date for these interrogatories.

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-7. On page 5, you describe the "proposed differential" to be "so large as to be discriminatory on its face."

- a. To what "differential" are you referring? Please identify the subclasses and rate categories to which your statement refers.
- b. Please provide your definition of "discriminatory."
- c. For each category and subclass in subpart (a), please identify the rate category (i.e., nonprofit or commercial) that suffers from the alleged "discrimination."

RESPONSE

- a. By "proposed differential" we mean the difference in the rates of change that the Postal Service submitted to initiate this proceeding between nonprofit and commercial rates of postage for each Standard A Mail rate category where the difference is a multiple of the rate of increase of inflation.
- b. See T1-7a. above.
- c. The rate categories are those shown on Attachments A-~~8~~
c that are identified by T1-7a above.

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-8. Please refer to your testimony at page 6, lines 6-8. You state, "[f]or Standard A mail that costs the most to process, postal management proposes that nonprofit mail underwrite a rate rollback for commercial mail."

- a. Please identify the subclasses and categories of Standard A mail "that [cost] the most to process."
- b. Please identify all commercial mail rate categories that are subject to a "rollback" at the expense of nonprofit mail.
- c. Please identify all commercial mail rate categories for which the Postal Service proposes a rate increase.
- d. Please explain how nonprofit mail is "underwriting" a commercial mail rate rollback.
- e. Is it your testimony that the revenue from nonprofit is being used to propose lower commercial rates? If so, please quantify the amount of this alleged "underwriting," and show all calculations used to arrive at your conclusion.
- f. Please confirm that, all else equal, if the rates proposed for commercial mail were lower, then the rates for nonprofit mail would be lower, also.

RESPONSE

- a. Bulkier, heavier weight pieces that the automated sorting equipment cannot process.
- b. The rate categories are those shown on Attachments A through ~~8~~ that are identified by a negative rate of change. ^c
- c. The rate categories are those shown on Attachments A - ~~8~~ that are identified by a positive rate of change. ^c
- d. Under existing law, the total revenue that rates must generate is a given. Postal management sets that figure. It also has specific pricing objectives relative to types of mail and mailers. When revenue is shifted away from a certain type of mail in order to achieve a pricing objective, other types of mail or rate categories have to generate sufficient revenue to support attainment of the specific pricing objectives and revenue targets.

- e. The amount underwritten equals the difference between the true cost of the pieces affected by the pricing objective and the revenue that those same pieces will generate if the pricing objective is achieved.
- f. If all else were equal, nonprofit rates would move in tandem with their commercial counterparts.

RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE

USPS/NFN-T1-9. Please refer to page 6 of your testimony. You characterize a 24 percentage point differential as "classic price gouging." Please provide your definition of the concept of "price gouging."

RESPONSE

The Supreme Court defined "price discrimination" in FTC v. Anheuser-Busch, Inc., 363 U.S. 536, 549 (1960) as follows: "A price discrimination within the meaning of that provision [Section 2(a) of the Robinson-Patman Act] is merely a price difference." At some point a mere price difference becomes so large as to constitute an overcharge or an undue exaction. At that point, we define price discrimination as price gouging.

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-10. Please refer to page 7 of your testimony where you state, "Postal management repeatedly promised rate reductions, or at least to slow down the rate of increase, for mailers who financed the tremendous costs to produce mail that the automated sorting equipment could read and process at optimum speed. With one exception, postal management's proposal makes good on that promise for commercial Standard A mail, but they would penalize the comparable nonprofit piece."

- a. Please provide all information that informs your conclusion that mailers were repeatedly promised rate reductions, or at least a slow down in the rate of increase, for automation mail. To the extent that such information has already been provided in this docket, please provide relevant citations.
- b. Is the exception to which your statement refers ECR Automation Letters? If not, what is the one "exception" noted in line 7 regarding commercial mail rates that supposedly was not in keeping with the "promise?"
- c. Please provide your definition of the word "penalize." In your opinion, at what point (quantitatively) does a percentage increase in a rate amount to a "penalty"? Please explain your response.
- d. Is it your belief that ECR Automation Letter rate mailers are being penalized? Please explain your response.
- e. Is it your belief that proposed Automation category rates in Rate Schedule 321.4B do not incorporate discounts for mailer worksharing related to automation? If your response is affirmative, then what do you believe accounts for the rate differentials between the Nonprofit Presort rates in Rate Schedule 321.4B and the Nonprofit Automation rates in Rate Schedule 321.4A?
- f. Is it your belief that the ECR Automation letter rate category does not incorporate savings for mailer worksharing that is deducted from the ECR Basic rate? If your answer is affirmative, then what do you believe accounts for the 0.7 cent difference between ECR Basic and ECR Automated Letter rates?
- g. Is it your belief that the NECR Automation letter rate category does not incorporate savings for mailer worksharing that is deducted from the NECR Basic rate? If your answer is affirmative, then what do you believe accounts for the 0.4 cent difference between NECR Basic and NECR Automated Letter rates?

RESPONSE

- a. We are searching for the files that contain pronouncements, minutes from meetings with postal management, and other documents. These files go back more than ten years, and NPN has been unable to locate them by the return date, although it continues the search. In the early automation filings, the Postal Rate Commission based its reluctance to recommend the rates that the Postal Service proposed for automation in part on the rationale that it was premature to offer a rate incentive when the automation savings was merely anticipated rather than demonstrated.
- b. Yes.
- c. (i) We give "penalize" its common meaning, to put at a serious disadvantage. (ii) The increase is a penalty when the nonprofit mailer would have allocated its resources efficiently by not having shifted dollars away from program and foregone higher response rates in order to install and operate equipment and processes to produce mail pieces that the Postal Service's automated systems can read and process at optimum speed.
- d. Yes, as described in Ti-10c. above.
- e. No.
- f. No.
- g. No.

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-11. Please refer to page 8 of your testimony where you state that [p]ostal management would have both nonprofit and commercial mailers bear equally in the expense to process mail with the automated sorting equipment."

- a. To what is your reference to "bear equally in the expense" intended to refer--total volume variable unit costs, contribution, or some other concept? Please explain.
- b. Does this statement apply only to ECR Automation letter and NECR Automation letter categories are to others? Please explain your response.

RESPONSE

a. Assuming that changes in mail rates reflect the change in cost to process additional pieces of mail in that rate category, that the Postal Service proposes to increase the nonprofit and commercial ECR basic automation rate for letters by the same percentage rate suggests that all Standard A Mail pieces in that rate category would bear equally, as a rate of increase, the extra cost to process ECR basic automation pieces.

b. Here we intended to comment only on nonprofit and commercial letter-size Standard A Mail pieces that qualify for the ECR Subclass and within that subclass for the basic automation rate.

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-12. Please refer to page 9 of your testimony where you state that, "postal management has manipulated its cost data to produce these disparate rates of change."

- a. Is it your testimony that the Postal Service has deliberately manipulated cost data in order to produce disparate rates of change in the rates for commercial mail and nonprofit mail?
- b. If your response to subpart (a) is affirmative, please respond to each of the following subparts:
 - (i) identify who within the Postal Service (by name if known to you) manipulated such data,
 - (ii) state whether such manipulation was authorized or unauthorized, and if authorized, who (by name if known to you) authorized such manipulation, the purpose served by such alleged manipulation, and
 - (iii) all known effects of such manipulation.
- c. If your response to subpart (a) is affirmative, please provide all information that informs your conclusion. To the extent such information has already been provided in this docket, please provide citations.

RESPONSE

- a. No.

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-13. Please see your testimony at pages 13-14 where you state:

"Despite these fundamental similarities in the lengths that the Postal Service has to go in order to process each piece, the postal management proposes an absolute rollback of four percent for the commercial piece of mail and a whopping 20 percent increase for the nonprofit piece. That's a swing of 24 percentage points for the two pieces that are [sic] require essentially similar handling."

- a. Confirm that you are referring to the proposed rate of 24.7 cents for Regular Basic Presort letters, and the Step 6 rate of 16.5 cents for Nonprofit Basic Presort letters. If you cannot confirm, please identify the rate(s) to which you are referring.
- b. If subpart (a) is confirmed, please confirm that the commercial rate exceeds the nonprofit rate by 50 percent. If your response to subpart (a) is not confirmed, please calculate the percentage by which the commercial rate exceeds the nonprofit rate.
- c. Please confirm that the Mail Processing and Delivery costs for Regular Basic Presort and Nonprofit Basic Presort presented by USPS witness Daniel were 12.96 cents for commercial and 11.36 cents for nonprofit (USPS-T-29C, pages 3 and 5, revised 10/1/97).
- a. Please confirm that these pieces require essentially similar handling.

RESPONSE

- a. Confirmed.
- b. Confirmed.
- c. Confirmed.
- d. Confirmed.

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-14. Please refer to your testimony at page 14, lines 5-14. You state:

"For pieces in the second presort tier within the non-automation rate category, the postal management proposes to leave the rate where it has been for mail that serves a commercial purpose but raise the rate by 19 percent for nonprofit mail. In effect, the postal management claims that it costs no more than before to process a piece of commercial mail that fails the characteristics needed in order to process it using the automated sorting equipment but is presorted to like three digits, but it now costs 19 percent more to handle the same piece of mail that serves a nonprofit purpose."

- a. Do you believe that a proposed rate change of zero percent for any given category implies that the cost for that category has not changed?
- b. Do you believe that a proposed rate change of 19 percent for any given category implies that that category has experienced a cost change of 19 percent?
- c. Are there any other factors, other than cost change, that might affect the percentage rate change for an individual rate category? If your answer is affirmative, please identify all such other factors.

RESPONSE

- a. It could imply that.
- b. It could imply that.
- c. (i) There could be other factors.
(ii) We are unable to identify other factors.

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-15. Please see your testimony at page 14, lines 15-18. You state that, "[t]his same phenomenon--the rate for nonprofit and commercial mail moving in opposite directions within the same rate category--can be observed in two-thirds of nine rate categories that make up the two Standard A mail subclasses."

- a. Please list the "nine rate categories that make up the two Standard A mail subclasses" to which you refer in this passage.
- b. Of the nine categories, please identify the categories that are not depicted in Table I of your testimony, and, for each such category, please give the rates for the corresponding commercial and nonprofit categories.
- c. Please show the derivation of the "two-thirds" figure. Please show all calculations.
- d. Please show all calculations that underlie the zero percent figure in Table I for commercial Automation 3-digit.

RESPONSE:

- a. Non-automation basic and 3/5-digit presort; Automation basic, 3-digit presort, 5-digit presort; ECR basic, automation, high density, saturation
- b. Based on the response to T1-15a. above, the Postal Service has quick and easy access to the rate chart data it requests.
- c. Of the nine categories, the proposed rates of change for six or two-thirds of them are asymmetrical.
- d. Based on the rate chart I used, the current postage for that rate category is 20.9 cents which is also the proposed rate.

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-16. Please see your testimony at page 14, where you state, "[i]n only one rate category does postal management propose to do what seems intuitively logical, and that is to increase each piece by the same factor."

- a. Does your statement imply that it is illogical to have a different percentage change for any given commercial rate category as compared to its nonprofit counterpart? Please explain your response.
- b. Is it your belief that corresponding nonprofit and commercial rate categories should exhibit the same cost characteristics? Please explain your response.
- c. What is the one rate category to which your statement refers?
- d. What is the "factor" by which these rates are being increased?

RESPONSE

- a.(i) No.
 - (ii) There may be a good reason why the respective rates of change differ.
- b. (i) No, not necessarily.
 - (ii) If mail in comparable rate categories exhibit different cost characteristics, those differences should be describable.
- c. ECR basic automation.
- d. The Postal Service proposes to raise each by 8 percent.

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-17. Please refer to pages 15-16 of your testimony. You state, "[t]here are 17 rate categories for this type of Standard A mail. Two rate categories are omitted from this analysis because the relatively low base on which the percentage has be computed distorts the size of the percentage increase. A third is omitted because it didn't exist prior to this rate filing."

- a. Please list the 17 rate categories for nonletter Standard Mail (A).
- b. Please list the two rate categories which have a "relatively low base."
- c. What category didn't exist prior to this rate filing?

RESPONSE

- a. Standard Mail (A): Basic and 3/5-digit presort for non-automation, automation, pound, per piece non-automation and automation; ECR basic, high density, saturation, pound, per piece basic, high density, and saturation.
- b. Per piece basic and high density.
- c. Per piece saturation.

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-18. Please see your testimony at page 16, where you state "[w]ith respect to the remaining 14 rate categories, postal management proposes rates of change for eight rate categories that move in opposite directions depending on whether the non-letter size piece serves a nonprofit or commercial purpose. For the remaining six categories, in five of them postal management proposes to increase the rate for both nonprofit and commercial mail; however, the proposed rates of increase vary substantially."

- a. Is it your testimony that eight nonletter rate categories have proposed rates which move in opposite direction for commercial and nonprofit?
- b. If your response to subpart (a) is affirmative, how many of the eight categories involve a rate decrease for the nonprofit piece?

RESPONSE

- a. Yes.
- b. Two.

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-19. Please show all calculations used to derive the figures in Table II of your testimony. In showing your calculations, please identify each figure used, and provide a source for each.

RESPONSE

I computed the differential in percentage points between the proposed rates of change for nonprofit and comparable commercial rates for the rate categories listed in Table II and the accompanying text. Then for each of the two groups identified in Table II, I took a simple average of the differential for each group. For the first group--Letters, Regular and ECR Subclasses, the "Average Differential Per Rate Category" is the quotient of the sum of the differential for each of the seven rate categories identified on the far right column of Table I divided by seven. For the second group, the figures for each of the 13 rate categories used to count the differential in percentage points are set forth on Attachments B and C. The rate categories excluded from the calculation of the average differential per rate category for the non-letters are: ECR per piece rates for basic, high density, and saturation presort and the ECR pound rate. In counting the differential in percentage points, the source for the proposed change in rates (in terms of cents per piece) is U.S. Postal Service rate charts and proposed rates filed to initiate this proceeding. To compute the change for nonprofit rates, we used Step 6 under the current rate schedule and the rates that the Postal Service proposes for Step 6 under R-97.

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-20. Please confirm that the figures in Table II omit those categories where the proposed rate of increase is equal for corresponding nonprofit and commercial categories, or the difference in the proposed increases in a range that you would not characterize as asymmetric. If not confirmed, please explain your response.

RESPONSE

Of the six rate categories omitted in computing the average differential in percentage points between nonprofit and the comparable commercial rate for letters and non-letters, one rate category is omitted because there isn't a differential; three rate categories are omitted because they would distort the answer for mathematical reasons (if included, they would tend to widen the differential for non-letters); and the final two are omitted because we wouldn't quibble over the differential as we expect some differences in the relative rates of change of the cost to process additional pieces of nonprofit and comparably prepared and commercial letter and non-letter mail.

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-21. Please confirm that you use the terms "attributable" and "direct" interchangeably in your testimony (see page 3). Does your testimony equate the two concepts?

RESPONSE:

It's difficult for most of us to conceptualize precisely what constitutes the pool of "attributable" cost after each rate case. In order to make the concept of attributable costs, which is not taught in business school or economics, more comprehensible for the public, we use the concept of "direct" or variable costs as a proxy.

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-22. Please refer to pages 5-6 of your testimony, where you state, "handling, hence costing, characteristics are virtually identical for nonprofit and commercial mail within a particular rate category"

- a. Why do corresponding nonprofit and commercial category exhibit "virtually identical" handling characteristics? Please explain your response.
- b. Do the "virtually identical" handling characteristics for corresponding nonprofit and commercial categories imply that the cost characteristics should be virtually identical as well? Why or why not?

RESPONSE

- a. Mail that is sorted in the order that the carrier delivers it has a common handling characteristic whether it is a piece of nonprofit or commercial Standard A mail. Likewise, mail that is processed on automated sorting equipment has a common handling characteristic, namely the equipment and system used to process those pieces of mail. The same can be said for mail that is presorted by the first three or five digits of the ZIP code.
- b. Where the same piece of equipment and same processing system is capable of handling two pieces of mail, it would seem to cost the same to turn on and run the machine to handle one piece as the other.

RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE

USPS/NFN-T1-23. Please refer to page 6 of your testimony, where you state:

"Whether the piece of mail serves a nonprofit or commercial purpose, postal workers will have to do a comparable amount of work in order to process each piece of mail in that rate category. . . for mail that essentially has the same handling characteristics."

- c. Does your statement imply that corresponding nonprofit and commercial mail categories receive essentially the same handling? Please explain your response.
- d. Does your statement imply that the handling of nonprofit and commercial mail should be the same for corresponding nonprofit and commercial categories? Please explain.
- e. Please define "comparable amount of work" as used in your statement.

RESPONSE

- a. See response to T1-22a. and b. above.
- b. No, but where it is, see response to T1-22a. and b. above.
- c. If mail in a tray is presorted for the carrier in the order that he or she delivers it, one would think logically that the cost to have the carrier pick up the tray, put it in the postal delivery vehicle, and pull out the pieces as the carrier works through the route would vary little whether the piece served a nonprofit or a commercial purpose.

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-24. Please refer to page 9 of your testimony where you state, "postal management has so skillfully covered its tracks that nonprofits might not be able to discover the answer"

- d. In what manner has the Postal Service "skillfully covered its tracks?" Please explain.
- b. Is it your testimony that the Postal Service has deliberately "covered its tracks"?
- cc If your response to subpart (b) is affirmative, please respond to each of the following subparts:
 - (i) identify all cost data for which you believe the Postal Service has "covered its tracks",
 - (ii) identify who within the Postal Service (by name if known to you) "covered up",
 - (iii) state whether such coverup was authorized or unauthorized, and if authorized, who (by name if known to you) authorized such coverup,
 - (iv) the purpose served by such coverup, and
 - (v) all known effects of such coverup.

RESPONSE

- a. We don't know.
- b. No. We don't know whether it has occurred, and if so whether it was deliberate.

**RESPONSE OF NFN WITNESS EMIGH TO INTERROGATORIES
OF UNITED STATES POSTAL SERVICE**

USPS/NFN-T1-25. Please refer to page 13 of your testimony where you state, "[f]or example, consider the non-automation rate category for letters with the Regular Subclass. Whether the piece serves a nonprofit or a commercial purpose, neither piece may be processed using the Postal Service's automated sorting equipment"?

- a. Is it your testimony that any given letter entered under Rate Schedule 321.4A (Nonprofit Presort Categories) is not processed on automated sorting equipment? Please explain your response.
- b. If your response to subpart (a) is affirmative, what is your source?
- c. Assume that a subset of letters entered as Nonprofit Presort (under schedule 321.4A) are barcoded by the Postal Service and processed on automated sorting equipment.
 - (i) Would you agree that the handling of this subset of Nonprofit Presort letters could significantly affect the type and cost of handling of the rate categories in the Nonprofit Presort schedule? Please explain your response.
 - (ii) How would you expect the mail processing costs of the subset of Nonprofit Presort letters (for any given Nonprofit Presort letter rate category) that are barcoded by the Postal Service and processed on automated sorting equipment to compare with the mail processing costs of Nonprofit Presort letters (for the same Nonprofit Presort letter rate category) that are not processed on automated sorting equipment?
 - (iii) How would you expect the delivery costs of the subset of Nonprofit Presort letters (for any given Nonprofit Presort letter rate category) that are barcoded by the Postal Service and processed on automated sorting equipment to compare with the delivery costs of Nonprofit Presort letters (for the same Nonprofit Presort letter rate category) that are not processed on automated sorting equipment?

RESPONSE:

- a. My understanding is that the reason this rate is substantially higher than the basic automation rate for letters within the Regular Subclass is that the Postal Service uses its automated processing equipment to process

every piece of the latter. We meant, by the above cited quotation, that the piece is mailed at the non-automation rate because at the time the mailer presents the piece to the Postal Service it is not machine ready. "Neither piece may be processed using the Postal Service's automated sorting equipment" absent some change to the piece, such as adding a barcode.

b. Assume that a subset of letters entered as Nonprofit Presort (under schedule 321.4A) are barcoded by the Postal Service and processed on automated sorting equipment.

c.

(i) What does the author of this question mean by "Nonprofit Presort schedule?" It would seem reasonable that the larger the proportion of machineable presort mail, the less it would cost to process it or at least the slower the rate would increase.

(ii) We would hope that the total processing cost the cost for the Postal Service to barcode plus process the piece would be less, or it would increase at a slower rate than otherwise.

(iii) Again, we would hope that the cost for the Postal Service to barcode and process presorted letters would reduce or contain delivery costs vis-a-vis direct response letter mail that for whatever reason the Postal Service did not barcode.

Table A
USPS Proposed Rates - R 97-1 Rate Case
Standard (A) Mail: Letter Size - Regular Subclass

<u>Rate Category</u>	<u>Percentage Change in Rate</u>		
	<u>Nonprofit</u>	<u>Commercial</u>	<u>All Rates</u>
<u>Non-automation</u>			
- basic	20%	-4%	
- 3/5 digit presort	19%	0%	
<u>Automation</u>			
- basic	18%	3%	
- 3-digit presort	11%	0%	
- 5-digit presort	8%	3%	
Average	15%	0.6%	4.5%

As shown in Table A, the proposed increases for nonprofits in the Regular subclass range from 8 percent to 20 percent, compared to changes for commercial mail ranging from a decrease of 4 percent to a maximum increase of 3 percent. The overall average for that subclass is 4.5 percent, but every nonprofit rate in the subclass except one would increase by more than twice that percentage.

Table B
USPS Proposed Rates - R 97-1 Rate Case
Standard (A) Mail: Non-Letter Size - Regular Subclass

<u>Rate Category</u>	<u>Percentage Change in Rate</u>		
	<u>Nonprofit</u>	<u>Commercial</u>	<u>All Rates</u>
<u>Piece Rates</u>			
<u>Non-automation</u>			
- basic	19%	-2%	
- 3/5 digit presort	18%	0%	
<u>Automation</u>			
- basic	7%	3%	
- 3/5-digit presort	24%	0%	
<u>Per Piece Per Pound Rates</u>			
<u>Pound Rate</u>			
- basic	14%	-4%	
- 3/5 digit presort	14%	-4%	
<u>Plus per piece rate</u>			
<u>- Non-automation</u>			
- basic	26%	0%	
- 3/5 digit presort	31%	25%	
<u>- Automation</u>			
- basic	1%	-20%	
- 3/5 digit presort	75%	49%	
Average	23%	4.7%	4.5%

Table B demonstrates that the proposed rate increases for nonprofit non-letter mail range from 1 percent to 75 percent. The comparable commercial rates would change ranging from a 20 percent decrease to a 49 percent increase. In this subclass, as in Letter sized mail, the average increase would be 4.5 percent, though all but one nonprofit rate would increase much more than the average.

Table C
USPS Proposed Rates - R 97-1 Rate Case
Standard (A) Mail: Enhanced Carrier Route Subclass

<u>Rate Category</u>	<u>Percentage Change in Rate</u>		
	<u>Nonprofit</u>	<u>Commercial</u>	<u>All Rates</u>
<u>Letters</u>			
Basic	-3%	9%	
High density	-16%	1%	
Saturation	-17%	1%	
Basic automation	8%	8%	
<u>Non-Letters</u>			
<u>Piece Rates</u>			
Basic	-10%	-38%	
High Density	-14%	4%	
Saturation	-15%	3%	
<u>Per Piece Per Pound Rates</u>			
Pound Rate	-22%	-20%	
Plus Per Piece rate			
- basic	85%	206%	
- high density	133%	340%	
- saturation	N.M.	N.M.	
Average	-15%	-13%	4.5%

Table C shows that in this subclass, as in others, for almost every individual rate, the proposed increases for nonprofits would be much more than for commercial mail, and the few decreases less than commercial rate mail.

1 CHAIRMAN GLEIMAN: Does any participant have
2 additional written cross-examination for the witness?

3 [No response.]

4 CHAIRMAN GLEIMAN: If not, we will move on to oral
5 cross-examination.

6 Only the Postal Service has requested oral
7 cross-examination.

8 Does anyone else wish to cross-examine?

9 [No response.]

10 CHAIRMAN GLEIMAN: If not, Mr. Alverno, when you
11 are ready.

12 MR. ALVERNO: Thank you, Mr. Chairman.

13 CROSS-EXAMINATION

14 BY MR. ALVERNO:

15 Q Ms. Emigh, if you could turn to Table 1 of page
16 15, on which I just received corrections, you identify the
17 second item there as regular nonautomation 3/5 digit
18 presort?

19 A Yes.

20 Q For commercial -- for the commercial subclass as
21 undergoing a 2 percent rate increase?

22 A That was my -- apparently the first chart I had
23 was incorrect, and --

24 Q Okay.

25 A -- and I made some inquiries and it appears to be

1 2 percent.

2 Q Okay. I am looking at the rate schedules of the
3 Postal Service for this request, and in the letter size rate
4 for 3/5 digit there is no change.

5 It is 20.9 cents current and 20.9 cents proposed.

6 A All right, so the original is correct.

7 Q Okay, so that should read zero percent for
8 commercial in the regular nonautomation 3/5 digit presort.

9 Is that a yes or --

10 A Yes. I guess I thought that the zero -- somebody
11 had told me it was wrong and I called to get the right
12 answer and --

13 Q Okay.

14 A -- so apparently I was right the first time.

15 Q Okay. Let me now direct your attention, Ms.
16 Emigh, to the last line item, which is identified as the
17 regular subclass in the rate category of automation 3-digit
18 presort.

19 Now there you have identified the commercial
20 subclass as undergoing zero percent rate change. Is that
21 correct?

22 A Is that the one that is wrong?

23 Q Well, that is what I am leading you into, yes.

24 A Okay. I must have -- over the phone when someone
25 brought this to my attention I must have misunderstood what

1 they said.

2 Q Okay. I have a copy here of the rate schedules
3 for automation categories, so would you like me to
4 distribute those, so that way you can confirm that that is
5 the category that should undergo a 2 percent --

6 A If you would like to. I must have misunderstood
7 when somebody --

8 Q Okay.

9 A -- called me over the phone because I got the
10 wrong -- I corrected the wrong rate category.

11 Q Okay, let's just then, let me tell you that the
12 rate proposed by the Postal Service for automation 3 digit
13 is 17.8 cents and the current rate --

14 A Is 17.5.

15 Q Correct.

16 A I am very sorry --

17 Q Okay --

18 A -- I misunderstood that so all these -- the 2
19 percent increase then should be on that last line.

20 Q Okay, and that would change the differential in
21 the last line to 9 percent, correct?

22 A That's correct.

23 Q Okay. Let's turn now to your response to
24 Interrogatory Number 2.

25 A Okay.

1 Q Now in that interrogatory we asked you about your
2 statement regarding the physical characteristics of
3 nonprofit mail and you were asked in subpart (a) to provide
4 all of the information that informs your conclusion that
5 nonprofit mailers tend to produce consistently lighter
6 weight pieces relative to commercial mailers.

7 In your response you identify several items,
8 specifically studies and analyses by Dr. John Haldi prior to
9 this rate case. The second item is application of
10 "Neoclassical Microeconomic Analyses to the Enterprise of
11 Direct Response Fundraising" and thirdly "More than 15
12 Years: Empirical First-Hand Observation of Nonprofit Direct
13 Mail Pieces."

14 Now as I read your response I don't see any
15 citations to information that has been supplied in this
16 docket, isn't that correct?

17 A That's correct.

18 Q In fact, your response also does not point to any
19 quantitative information in this docket that nonprofit mail
20 is lighter weight or more uniformly shaped than commercial
21 counterpart.

22 A Is that a question?

23 Q Yes.

24 A I agree with your statement.

25 Q Let's look at your response to subpart (a) a bit

1 closer.

2 Now you were asked to provide information that
3 wasn't provided in this docket and the first item you
4 mentioned was studies and analyses by Dr. John Haldi.

5 These weren't filed as part of this rate case,
6 correct?

7 A Correct.

8 Q And to what prior rate proceedings are you
9 referring here in your response?

10 A I believe it was R80 or R84.

11 Q Do you happen to have citations for those --

12 A No, I don't.

13 Q Did you review them prior to preparing your
14 testimony?

15 A No, I just remembered from, you know, discussions
16 that I have had in the past.

17 Q Now let's consider the second item for a second.

18 That one is identified as the application of
19 neoclassical microeconomic analyses to the enterprise of
20 direct response fundraising.

21 Could you just elaborate and explain to me what
22 that is precisely?

23 A Well, in analyzing the enterprise, the business
24 of -- most nonprofit mail, Third Class, now Standard, is
25 fundraising mail, and in analyzing the economics of

1 charities and other nonprofit organizations raising money in
2 the mail, the result of that analysis is that these
3 organizations have to design pieces of mail that go for the
4 lowest rate, and that is why there tends to be such great
5 uniformity in the shape of this mail.

6 In other words, these are small pieces and that's
7 also why they tend to be light weight. They use a small
8 courtesy size envelope or Standard Number 9 or Number 10
9 envelope and they always, you know, come in under -- well,
10 not always, but for the most part come in under the minimum
11 weight because they have to be cost minimizers in the mail.

12 Q Is this a study like a document that you reviewed
13 or is it simply your evaluation based on your experience?

14 A It is my evaluation based on my experience.

15 Q Okay. Let's consider the third item for a second.

16 You identified that as being first-hand
17 observation of nonprofit direct mail pieces.

18 Is that the same thing as the previous analysis or
19 is there something more to add to that?

20 A Well, it's just over the -- I mean over the 15
21 years I have had occasion to see a large number of mail
22 pieces that nonprofit organizations use that go at the
23 nonprofit rate. For various reasons I have had to look at
24 these pieces -- you know, for rate eligibility purposes, for
25 computing how to minimize costs and raise more money -- and

1 over the years I have become very familiar with the pieces
2 of mail that many nonprofit organizations mail at the
3 nonprofit rate.

4 You know, I can form -- I have formed certain
5 observations and conclusions as a result of that. They tend
6 to be very -- the nonprofits have to use other ways to
7 differentiate their pieces of mail from each other's, as
8 opposed to size, shape or weight -- you know, having a
9 longer motivational cover letter, having more different
10 types of premiums.

11 They have to go for very light weight and they use
12 different ways to differentiate their mail. They use color
13 envelopes, they use envelope teaser copy instead of using
14 different shapes and being able to go for heavier weight
15 pieces.

16 For example, one of the things I have done in the
17 past many times each year is organizations will come to me
18 and ask me to analyze the effectiveness, the economics, the
19 cost effectiveness of their direct mail fundraising program.

20 To analyze that, I have to look at all of the mail
21 pieces that they send out in a year.

22 Another area that I do a lot of work in is
23 allocation of joint costs, when an organization uses a piece
24 of mail to both solicit funds and educate the mailer, the
25 public about their cause, and this also requires me to

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1250 I Street, N.W., Suite 300
Washington, D.C. 20005
(202) 842-0034

1 actually physically look at the mail piece, count every line
2 of a motivational cover letter, the response device, et
3 cetera.

4 Q All right, thank you. Now let's turn to your
5 response to Interrogatory Number 1.

6 A Yes.

7 Q This Interrogatory also asked you about the same
8 statement that we just discussed earlier. Now, in subpart
9 (a), you were asked to identify the subclasses and rate
10 categories to which your statement applied. And in your
11 response, you stated all standard mail subclasses and rate
12 categories differentiated by letters, flats and parcels.

13 In subpart (b) then, you were asked to provide a
14 certain amount of cost information for those rate categories
15 and subclasses. And in your response, you said that we do
16 not have these data. Is that correct?

17 A That's correct.

18 Q Okay. So you are suggesting, are you not, that
19 there are certain characteristics about non-profit mail, yet
20 you are not able to identify any of the cost characteristics
21 of those categories or subclasses, is that correct?

22 A By your questions on Part B, where you ask for
23 total cost, total unit cost, I interpreted that to be not
24 the cost to the organization to produce those pieces of
25 mail, but I was understanding your question to be the cost

1 to the Postal Service to process and deliver those.

2 Q That's correct.

3 A And I don't -- I don't know the Postal Service's
4 costs.

5 Q You don't know the Postal Service's costs because
6 you say that they are not there, or is it because you just
7 didn't review them?

8 A Because I don't have access to the underlying cost
9 data.

10 Q Have you seen Witness Daniel's exhibits or
11 appendices or Witness Patelunas' attributable costs, his
12 testimony at all in this docket?

13 A Yes.

14 Q You have. And so you don't represent -- or you
15 don't understand those to include the costs of the various
16 subclasses and rate categories of standard mail to which you
17 are referring in your response to Interrogatory 1-A?

18 A Well, I wasn't -- I wasn't sure if those -- if
19 those were the costs that you were referring to.

20 Q But you said that you interpreted the question to
21 --

22 A To be.

23 Q To imply or to ask for --

24 A The Postal Service's costs.

25 Q Exactly, yes.

1 THE REPORTER: The Postal Service's what?

2 THE WITNESS: Costs, costs. The Postal Service's
3 total costs, the total unit costs for the Postal Service to
4 process and deliver a piece of non-profit mail that falls
5 into a certain rate category. And then the total cost, I
6 guess, for all those categories.

7 BY MR. ALVERNO:

8 Q And do you still believe that you don't have the
9 data to be able to answer the question?

10 A I don't, no. I don't know what those costs are.

11 Q But you say that you have also reviewed Witness
12 Patelunas' testimony and Witness Daniel's testimony, and
13 that those testimonies contain a certain amount of cost
14 information by rate category and also by subclass?

15 A Yes.

16 Q Okay.

17 A But do I know that that is the total unit cost,
18 no. And I don't know what goes into all those costs, how
19 those costs are developed. In fact, you know, that is a lot
20 of what is being debated here is are those costs accurate,
21 what methodologies were used to produce those costs.

22 Q Let's turn now to your response to Interrogatory
23 No. 3. Now, this Interrogatory asks you about a statement
24 in your testimony about the underlying policy objective of
25 the Revenue Foregone Reform Act, specifically, your

1 statement that non-profit rates should move in tandem with
2 their respective comparable commercial rate. Is that the
3 policy objective that you have identified in the RFRA?

4 A Yes.

5 Q So if I understand this correctly, the policy
6 objective is that non-profit and commercial rate changes
7 should be in the same direction, that is, both up or both
8 down, am I correct?

9 A Well, I didn't want to -- you know, it was not our
10 understanding that it would be exactly identical. We were
11 just -- we certainly weren't, based on that year and a half,
12 two years of interaction with Congress and the Postal
13 Service, commercial mailers, et cetera, and what we ended up
14 with, it was our understanding that the rates -- I tried to
15 the use words "in tandem" to suggest that they would move
16 more or less proportionately, but, you know, we're -- the
17 National Federation of Nonprofits is not expecting to see
18 exactly both going up by the same amount. I think we are
19 just surprised to see, in the first rate case after that,
20 that the differential was as large as the Postal Service is
21 proposing.

22 Q Which rate case is that?

23 A This one.

24 Q Wasn't the RFRA enacted in 1993?

25 A Yes.

1 Q So R94 would have been the first case subsequent
2 to the enactment of RFRA?

3 A Well, that's true. That's true, but in that rate
4 case, the rates did seem to be more or less in tandem. And
5 this is the first time that we have seen proposed rates that
6 -- where the nonprofit rate is diverging, the proposed rate
7 for nonprofits is diverging so dramatically from the
8 proposed rates for the commercial counterpart.

9 Q Let's turn now to Interrogatory No. 5 of the
10 Postal Service. Now, there you are asked about a statement
11 in your testimony which I guess analyzes the rate changes
12 for 26 categories in Standard A. And you concluded that in
13 almost 90 percent of the categories the proposed rates have
14 changed for nonprofit and the comparable commercial rates
15 are asymmetrical. And is subpart (a) you were asked for
16 your definition of asymmetrical and you said that that is
17 when the rates of change move in the opposite direction.

18 Now, by rates of change, in your response to
19 subpart (a), you are referring, are you not, to the
20 nonprofit and the comparable commercial rate, and that is
21 the comparison you are making, correct?

22 A That is correct.

23 Q Now, in subpart (d), you were asked if it was your
24 understanding that commercial and nonprofit classification
25 reform cases, and by those -- those Dockets were MC95-1 and

1 MC96-2, if those commercial and nonprofit classification
2 reform cases resulted in many asymmetric changes, and in
3 your response to (d), you confirm that, isn't that correct?

4 A Yes.

5 Q And then in subpart (e), you were asked if
6 nonprofit mail was more frequently the beneficiary of the
7 asymmetric changes in classification reform. And in your
8 response, you said, well, how do you define more frequently
9 the beneficiary, and you left it at that, correct?

10 A Yes.

11 Q I want to see if we can try to understand what
12 indeed happened in reclassification with regard to what you
13 define as asymmetric changes. Yesterday, I sent your
14 counsel a copy of an exhibit marked as USPS/NFN-T-1-XE1,
15 which consists just of a simple table comparing the pre- and
16 post-classification reform rates. Do you have a copy of
17 that with you?

18 A I do.

19 MR. ALVERNO: I also have copies, Mr. Chairman for
20 other participants in the hearing room, if you would like me
21 to distribute those.

22 CHAIRMAN GLEIMAN: I am not too concerned about
23 the participants in the hearing room, but I think that we
24 would like to have copies of them up here.

25 MR. ALVERNO: Certainly.

1 CHAIRMAN GLEIMAN: I guess we are participants in
2 the hearing room in a sense, although sometimes people
3 wonder.

4 Thank you, sir.

5 [Cross-Examination Exhibit
6 USPS/NFN-T-1-XE-1 was marked for
7 identification.]

8 BY MR. ALVERNO:

9 Q Now, I trust you have had a chance to look at this
10 table, Ms. Emigh, earlier, correct?

11 A Yes.

12 Q Okay. Now, I see a total of -- or there are a
13 total of 15 rates reported here for nonprofit and
14 commercial, isn't that correct?

15 A Fifteen, yes.

16 Q And could you please identify for me the
17 categories for which there are asymmetric changes as you
18 have defined it in subpart (a) of Interrogatory No. 5?

19 A Okay. For letters at the 3-digit, 5-digit presort
20 rate, they are moving in opposite directions. The 3-digit
21 automation rate. The, for non-letters, 3-digit, 5 digit,
22 presort rate. For carrier route, basic.

23 Q Now, with regard to these four categories that you
24 have isolated and identified as those four which there were
25 asymmetric changes during classification reform, nonprofit

1 was a beneficiary in all cases, was it not?

2 A Let's see. Yes.

3 Q In other words, the nonprofit categories received
4 a rate reduction, while the corresponding commercial rate
5 actually increased or stayed the same for those four
6 categories, and that is for letters, 3-, 5-digit presort,
7 3-digit automation, and for non-letters, 3-, 5-digit
8 presort, and carrier route, basic letters?

9 A Yes.

10 Q And there were no asymmetric changes incident to
11 classification reform where the commercial rates decreased
12 and the nonprofit rate increased, isn't that correct?

13 A Yes.

14 Q And you also define as asymmetric situations
15 where, for example, in basic three-digit automation there
16 was no change in the commercial rate while there was a
17 corresponding decrease in the nonprofit rate.

18 A Yes.

19 Q So do you treat zero change as a direction?

20 A Well, just -- instead of the comparable
21 counterpart rate not moving at all, it did move either up or
22 down.

23 Q Let's turn now to Interrogatory 4 of the Postal
24 Service.

25 MR. ALVERNO: Mr. Chairman, I would like to have

1 that cross-examination exhibit marked as USPS/NFN-T-1-XE1
2 transcribed into the record.

3 CHAIRMAN GLEIMAN: Without objection.

4 MR. MILLER: No.

5 CHAIRMAN GLEIMAN: With no objections, the
6 cross-examination exhibit will be transcribed into the
7 record.

8 [Cross-Examination Exhibit
9 USPS/NFN-T-1-XE-1 was received into
10 evidence and transcribed into the
11 record.]

12

13

14

15

16

17

18

19

20

21

22

23

24

25

Pre- and Post-Classification Reform
 Nonprofit and Commercial
 Rate Comparison
 (cents per piece)

USPS/NFN-T1-XE1

	Commercial			Nonprofit - Step 4		
	Pre-reclass	Post-reclass	Change	Pre-reclass	Post-reclass	Change
Letters						
Basic Presort	22.6	25.6	13%	12.8	13.2	3%
3/5-digit Presort	18.8	20.9	11%	11.5	11.4	-1%
Basic Auto	20.4	18.3	-10%	11.0	9.9	-10%
3-digit auto	17.5	17.5	0%	10.5	9.5	-10%
5-digit auto	16.6	15.5	-7%	9.7	8.2	-15%
Nonletters						
Basic Presort	26.6	30.6	15%	18.0	19.5	8%
3/5-digit Presort	21.4	22.5	5%	16.6	14.9	-10%
Basic Auto	23.7	27.7	17%	15.4	17.1	11%
3/5-digit auto	19.5	18.9	-3%	14.8	12.5	-16%
Carrier Route						
Letters						
Basic	15.0	15.0	0%	9.0	8.7	-3%
High Density	15.0	14.2	-5%	9.0	7.9	-12%
Saturation	14.2	13.3	-6%	8.7	7.5	-14%
Nonletters						
Basic	16.2	15.5	-4%	13.3	10.7	-20%
High Density	15.7	14.7	-6%	13.1	10.0	-24%
Saturation	14.5	13.7	-6%	12.6	9.4	-25%

1 BY MR. ALVERNO:

2 Q Interrogatory 4 of the Postal Service. This
3 interrogatory asked you about your statement at page 4 of
4 your testimony that historically the nonprofit rate has been
5 about one-half of the comparable commercial rate. The
6 subpart (a) asked you to identify all factors that you
7 believe have contributed to this rate relationship. And in
8 your response you said we are unable to identify all
9 factors.

10 I don't quite understand that response. Let's see
11 if we can try to shed some light on it. Are you stating
12 that you don't know all factors that have contributed to the
13 relationship between nonprofit and the comparable commercial
14 rate, or that you know of some, but not all of them?

15 A I don't know what accounts for that relationship.

16 Q And by "that relationship" you're referring to the
17 nonprofit rate being one-half the comparable commercial
18 rate; correct?

19 A Right.

20 Q Correct?

21 A That's correct.

22 Q Now in subpart (b) of Interrogatory 4 you were
23 asked to identify the span of time that your statement
24 considers, and in response you said the postwar period.

25 Now by "the postwar period" do you mean the period

1 from 1945 or '46 to date, or to some other time period?

2 A I think it was 1954.

3 Q 1954 through 1997 or --

4 A Not through 1997.

5 Q Okay.

6 A I'm trying to remember. I think it's in the
7 eighties.

8 Q You think it's in the eighties, like what, 1986 or
9 so, or --

10 A Mid-eighties.

11 Q And so you're not alleging that there has been a
12 relationship between the nonprofit rate and the comparable
13 commercial rate where the nonprofit rate is about one-half
14 the commercial rate since the mid-1980s?

15 A Well, the -- some years ago when I looked at
16 this -- I looked at it, like I say, I think it was in the
17 mid-eighties when I looked at these numbers, and I haven't
18 looked at them -- you know, I haven't done that kind of
19 chart since then.

20 Q Okay. So your statement is confined through
21 the -- from '54 to the mid-1980s --

22 A Right.

23 Q But does not extend --

24 A I was speaking generally for a very long span of
25 time, and I wasn't trying to suggest that, you know, every

1 single year or with every single rate case or every single
2 time that Congress changed the postal rates before 1970 that
3 it was exactly one-half, but just generally standing back
4 and looking at the relationship between nonprofit -- in
5 those days Nonprofit Third Class and Commercial Third Class
6 there seemed to be this relationship of about a half. But
7 I'm not trying to say it's exactly a half in every single
8 year, every single rate case, or every time that Congress --

9 Q Um-hum.

10 A Changed the rates.

11 Q Now with regard to the current decade -- that is,
12 the 1990s -- the introduction of the RFRA would have also --
13 could have also contributed to a change in this equation, is
14 that correct, or -- would you have any reason to disagree
15 with that statement?

16 A Well, with respect to institutional costs I think
17 that's what we thought we were at least getting pegged, the
18 nonprofit rate was at least going to be pegged to one-half
19 of the markup for the comparable commercial.

20 Q Um-hum. But with regard to the total rate, the
21 RFRA would have introduced an extra element to add to the
22 nonprofit rate, which would have reduced the margin between
23 the commercial rate and the nonprofit rate as the phasing
24 schedule moves along. Isn't that correct?

25 A Yes.

1 Q So that would have the effect then of reducing or
2 at least changing the relationship that you've identified in
3 your testimony, so that the nonprofit rate becomes closer to
4 the commercial rate through the fact that it bears a greater
5 portion of institutional cost. Is that correct?

6 A I'm sorry, I didn't hear the last part of your
7 question.

8 Q Yes.

9 A It bears a greater percentage of its institutional
10 cost?

11 Q It bears a greater percentage of institutional
12 cost as a proportion of the commercial markup.

13 A The nonprofit rate bears a greater percentage of
14 institutional costs than commercial?

15 Q No, no, no, no. It bears a greater proportion
16 than it did before. In other words, as time goes -- well,
17 strike that.

18 A Let me just say that it was our understanding that
19 the result, the policy objective of the Revenue Reform Act
20 was that the nonprofit rates would move, as I say, in tandem
21 with the comparable commercial rate, and that one reason why
22 we expected that was that with respect to the institutional
23 cost component that our markup was getting pegged to
24 one-half. There was this mechanistic formula that Congress
25 imposed in the Revenue Forgone Reform Act, and that

1 mechanistic formula meant that there was no sense for us to
2 come back to the Rate Commission and haggle over how much --
3 what -- you know, what percentage -- how much of
4 institutional costs were going to be assigned to nonprofits.

5 But that was the end of us -- the nonprofits
6 spending any money in the rate case, to say oh, we're
7 getting too much, we're being -- the Postal Service is
8 allocating too much of its overhead cost to nonprofits.
9 That portion of the rate would be determined by this
10 formula. And therefore the overall result would be that the
11 nonprofit rate would tend to move similarly. Not -- I'm not
12 saying exactly. We didn't expect to see the exact same
13 rates of increase, but more or less in a general direction.

14 Q Let's turn now to Interrogatory No. 7.

15 A Yes.

16 Q Now, this Interrogatory asked you about your
17 statement that the proposed differential is so large as to
18 be discriminatory on its face. And in subpart (a) you were
19 asked to describe the differential to which you were
20 referring, and in your response, you stated that the proposed
21 differential was the difference in the rates of change the
22 Postal Service submitted to initiate this proceeding between
23 nonprofit and commercial for each Standard A mail rate
24 category where the difference is a multiple of the rate of
25 increase of inflation.

1 I want to try to understand this response because,
2 by rates of change, do you mean the proposed increase or
3 decrease for any given nonprofit rate category as compared
4 to its commercial counterpart?

5 A Yes.

6 Q And what is the rate of inflation to which you are
7 referring?

8 A The rate of inflation for the economy as a whole.

9 Q And in subpart (c) of Interrogatory 7, you were
10 asked to identify the categories to which your statement
11 applies, and you said the categories shown on Attachments A
12 through C that are identified by your response to subpart
13 (a) above.

14 I wonder if we can turn to Attachments A to C of
15 your Interrogatories. If you could please identify for me
16 which of these rate categories meet the test that you have
17 set out in subpart (a) of Interrogatory No. 7.

18 A Okay. Like the first rate, Table A, the proposed
19 rate of increase for the basic rate, non-automation, is a 20
20 percent increase. The proposed rate for nonprofit,
21 non-automation, 3-digit, 5-digit presort is 19 -- almost 20
22 percent. Then dropping down to the basic rate for
23 automation mail, 18 percent, that's almost 20 percent.

24 So with the current rate of increase of inflation
25 for the economy as whole running between 2 and 3 percent,

1 rates in the order of magnitude of 20 percent are many times
2 greater than the rate of increase of inflation for the
3 economy as a whole.

4 Q Over what period of time?

5 A I'm sorry?

6 Q Over what period of time are you -- over what
7 period of time are you measuring this inflation? One year
8 or --

9 A For the economy as a whole?

10 Q Yes.

11 A For my -- the 2 to 3 percent range for inflation
12 is in the current business cycle that we are in, coming out
13 of the recession, the trough of '90-'92, and then we have
14 been in the upswing for '93, '94, '95, '96, '97, we are into
15 '98. During this upswing, heading toward the boom period of
16 this business cycle, we have now been into this upswing for
17 six years. If you look at the rate of increase of inflation
18 over this '92 to '97 -- '91 to '97 period, it has been --
19 inflation has been running between 2 and 3 percent a year.

20 In the early years, coming out of the recession,
21 it was -- inflation was running about 3 percent per year,
22 and now it is running about 2 percent per year.

23 But as a gauge to try to measure the -- what we
24 are talking about in terms of the increase of the Postal
25 Service's costs to process and deliver a piece of mail, I

1 was trying to find a benchmark that would be understandable
2 and the general benchmark for rates of increase is the, you
3 know, inflation in the economy as a whole. That is, the
4 rates of increase of items that find their way into goods
5 and services that we produce and consume. Certainly, the
6 costs of processing and delivering a piece of mail falls
7 into that category.

8 Q Well, the last time the Postal Service raised
9 rates would have been on what, January 1st, -- well, from
10 R94-1, at least, from a rate change, was January 1st of
11 1995, isn't that correct?

12 A Yes.

13 Q So that there would be a period of time within
14 which we could measure the inflation from that point to now,
15 and that would be more than 2 or 3 percent, wouldn't it?

16 A For the economy as a whole?

17 Q For the economy as a whole.

18 A Well, in that -- in the more recent period, it has
19 been running about 2 percent per year.

20 Q Per year. But, in other words, we are measuring
21 inflation over a series of years, are we not?

22 A Well, for two years, you are talking about 4
23 percent.

24 Q Two years, how about -- well, aren't we on to our
25 third year now of these rates?

1 A Well, three years.

2 Q And it is not just additive, is it, you also have
3 to take account of the fact that you have inflation on top
4 of inflation, correct?

5 A It is compounding, but also for nonprofits, you
6 know, the nonprofit rate has increased more than just by the
7 R94 rate case, and by the reclassification rate changes.
8 Nonprofits' mail also increases, you know, every October 1.
9 So nonprofits have even a greater increase than just --

10 Q That's by virtue of the RFRA, correct?

11 A Right. Than just talking about the rate of
12 increase as a result of the last rate case.

13 Q All right. Now, were there other rate categories
14 that you have identified, that you can identify for us as
15 being -- as falling within your definition of the
16 differential being so large as to be discriminatory on its
17 face? You identified one here.

18 A Well, yeah, I mean I --

19 Q At least the first two.

20 A I would say, generally, when we are talking about
21 rates of increase that are double digit, that these are
22 extraordinarily large. We would not expect to see double
23 digit rates of increase. We would not expect to see that
24 the Postal Service's costs to process nonprofit mail since
25 the last rate increase would -- that it would cost the

1 Postal Service in double digit rates to process a piece of
2 nonprofit mail. We can certainly --

3 Q So all the ones in Tables A through C, if the
4 nonprofit category has a double digit rate of increase, then
5 you would say that that is one for which the proposed
6 differential is so large as to be discriminatory on its
7 face?

8 A Particularly when the comparable commercial rate
9 is either not changing at all or is getting a rollback.
10 Because, you know, just standing back and looking at this
11 logically, there isn't a great deal of difference between a
12 piece of nonprofit and a piece of the comparable commercial
13 mail. In fact, if anything, it would seem that it would
14 cost less for the Postal Service to process nonprofit
15 standard mail because it tends to be more uniform and
16 lighter weight, less differential between -- from piece to
17 piece in terms of shape, size, and weight.

18 We just were surprised to see such large
19 differentials and then when you look at each end of the
20 differential, the nonprofit end, we are getting these very
21 large double digit increases. We look at the commercial end
22 and we are seeing these rollbacks.

23 Q Well, there are also --

24 A And yet for inflation for the economy as a whole,
25 inflation has been very low. In fact, the rate of increase

1 of inflation is actually decreasing. It's just -- for us,
2 it is a little confusing looking at the -- looking at the
3 rates that the Postal Service has proposed for nonprofits
4 and commercial and looking at the changes that the Postal
5 Service has made in terms of automation, which is supposed
6 to hold down the rate of increase of processing and
7 delivering the mail, and understanding why, for nonprofits,
8 it's -- you know, we are getting these double digit, the
9 proposed rates are double digit.

10 And we have tried through, you know, the
11 Interrogatories to find out from the Postal Service what is
12 driving that. And we just haven't be able to find out the
13 answer.

14 Q Let's turn now to Interrogatory 8 of the Postal
15 Service, and there you were asked about your statement at
16 page 6 of your testimony, that for Standard A mail that
17 costs the most to process, postal management proposes that
18 nonprofit mail underwrite a rate rollback for commercial
19 mail.

20 And in subpart (a), you were asked to identify the
21 subclasses and categories of Standard A mail that cost the
22 most to process, and you identified those as bulkier,
23 heavier weight pieces that the automated sorting equipment
24 cannot process, isn't that correct?

25 A Yes.

1 Q Okay. And then in subpart (d), you were asked to
2 explain how nonprofit mail is underwriting a commercial mail
3 rate rollback. And in your response to (d), you stated that
4 under existing law, the total revenue that rates must
5 generate is a given. Postal management sets that figure.
6 It also has specific pricing objectives relative to types of
7 mail and mailers. When revenue is shifted away from a
8 certain type of mail in order to achieve a pricing
9 objective, other types of mail or rate categories have to
10 generate sufficient revenue to support attainment of the
11 specific pricing objectives and revenue targets.

12 Now, to what pricing objective are you alluding to
13 in that response?

14 A Well, no, I am not -- I am speaking in general.
15 Now, during the two years or so that I was part of the
16 Postal Service's industry committee on reclassification, the
17 Postal Service economists and planners presented the policy
18 of management to shift pricing away so that it would be more
19 favorable for certain types of mail, and less favorable for
20 other types of mail. And that gave me an insight -- and
21 this is no difference -- postal management is no different
22 than the management of any other company in our society
23 where they are trying to use prices to encourage or
24 discourage certain types of mail or take advantage of
25 certain economic situations like, you know, charging what

1 the market will bear.

2 So, it's -- I think it's far to say that postal
3 management, as with the management of any enterprise in our
4 society, has pricing objectives. In fact, you know, I have
5 seen at the outset of reclassification, I saw the charts
6 that the Postal Service economists and planners handed out
7 to us at these Postal Service industry committee meetings
8 where they were quite open about pricing objectives.

9 Q Let's consider your statement at the beginning of
10 that response to subpart (d), that revenue is shifted --
11 excuse me, the middle of that, of subpart (d), when revenue
12 is shifted away from a certain type of mail in order to
13 achieve a pricing objective. Now, in the context of your
14 testimony, are you stating that revenue has been shifted
15 away from commercial Standard Mail A subclasses to achieve
16 some pricing objective?

17 A Well, there is a certain amount of revenue that
18 every rate case is going to have to generate, and if some
19 rates are going down, P times Q is going to generate less
20 revenue, P , price of the unit, times Q , the number of units,
21 that are sold, pieces of mail in that rate category, then
22 other -- some other component, some other rate category is
23 going to have to get an increase so that P times Q , price
24 times the quantity sold or price times the number of pieces
25 processed and delivered in that other category generate the

1 amount of revenue that is going to be foregone by charging a
2 lower rate or a smaller rate of increase to the other
3 category.

4 Q But are you, in the context of your testimony, are
5 you alleging that any revenue has been shifted away through
6 the Postal Service's proposed rates from commercial Standard
7 Mail A?

8 A To accommodate these, some of these big rollbacks,
9 that -- the loss of that amount of revenue, is going to have
10 to be made up someplace else.

11 Q Okay. And --

12 A And, presumably, it is going to be made up within
13 the class of mail. So, you know, within Standard Mail, for
14 some categories to go down, other -- the rates for other
15 categories will have to go up in order to generate the same
16 overall amount of revenue.

17 Q Are you talking then about institutional costs
18 being shifted around or some other concept?

19 A Well, for institutional costs, you know, we are
20 back to the Revenue Foregone Reform Act, so there, you know,
21 postal management has less flexibility in how to shift
22 around the overhead costs between commercial and nonprofit,
23 because Congress imposed this mechanistic formula that
24 nonprofits is going to be one-half of the mark-up for the
25 comparable commercial rate category.

1 Q So if I understand your statement correctly, you
2 are not -- are you suggesting that rate rollbacks for the
3 commercial subclasses have come at the expense of nonprofit?

4 A Well, they have to be made up someplace.

5 Q Why do they have to be made up in nonprofit. I
6 don't understand how one implies the other.

7 A Well, they still have to be made up from someplace
8 because the overall revenue generated has got to add up --
9 First Class, periodicals, Standard -- it's all got to add up
10 to the total revenue, and then, you know, presumably that
11 total revenue is divided among the classes and within the
12 classes to achieve price incentives or if these proposed
13 rates do actually correspond to underlying costs, then the
14 rollbacks are going to have to be made up by increases
15 someplace else.

16 Those increases don't necessarily all have to be
17 made up from the nonprofit rate categories. You can make
18 them up -- a rollback in one category of commercial could be
19 made up from an increase in another category of commercial,
20 but presumably to get a rollback for high density or
21 saturation carrier route, it's going to have to be made up.

22 That revenue is going to have to come from
23 someplace else.

24 Q How can it be made up from nonprofit though when
25 nonprofit -- when the institutional cost burden to be

1 assumed by nonprofit is prescribed by RFRA?

2 A Well, then I guess it is going to be made up on
3 the -- from the other costs. I mean the whole rate, the
4 whole nonprofit rate isn't just institutional. You have the
5 attributable costs as well.

6 I guess that is where it is going to come from or
7 is coming from or it is being proposed to come there.

8 Q So you are suggesting that there is some sort of
9 inter-subclass cost reallocation from commercial to
10 nonprofit?

11 A The revenue has to come from someplace.

12 There is a total amount that the Postal Service
13 calculates that they need to operate the Postal Service in
14 this test year, and in order for some rate categories to get
15 rollbacks, in some cases the rollbacks are big. They are
16 double-digit rollbacks, but even where they are small
17 rollbacks or no increase at all, then the revenue is going
18 to -- you know, P times Q, if some P -- some prices -- are
19 going down or not increasing but total revenue is
20 increasing, well then the money has to come from some other
21 rate category.

22 Q To the extent that commercial Standard A, the
23 institutional cost burden borne by commercial Standard A,
24 say, for example, the regular subclass is reduced, say the
25 Commission recommends a lower cost coverage for regular

1 subclass, what is the consequence on the nonprofit -- on the
2 nonprofit cost coverage for the corresponding subclass, in
3 this case nonprofit?

4 A I don't know. It would depend on where the
5 Commission would decide that that revenue that is not going
6 to be generated by that -- I'm sorry, are we talking about a
7 regular subclass?

8 Q We are talking about a subclass level.

9 A Subclass -- depending then, you know, they are
10 going to have to look to some other subclass to make up that
11 revenue if they can't change the total revenue --

12 Q I was just asking you what the relationship would
13 be if the Commission simply recommends a lower cost coverage
14 for commercial Standard A, what is the consequence on the
15 corresponding nonprofit subclass?

16 A I don't know. It would be up to the Commission to
17 determine where to make up that revenue.

18 If the Commission's hands are tied about the total
19 amount that all of these rate categories have to generate
20 given these assumed volumes, well then the Commission can't
21 just change -- I mean they have got to change all the mix of
22 rates, so it is going to generate the amount of revenue that
23 the law says they have to generate.

24 Q So that law basically says --

25 A I can't reach into their --

1 Q -- that if the corresponding commercial rate has
2 decreased, then the consequence on nonprofit is to also
3 decrease the institutional cost burden on nonprofit
4 subclass, isn't that correct?

5 A Are we still on the question about what the
6 Commission might do?

7 Q Yes.

8 A And I don't know what the Commission would do. I
9 can't reach into the Commissioners' minds and say -- and
10 think hypothetically if they were to do this on this rate
11 category or on this subclass which subclasses would they
12 look to to make up that revenue.

13 Q But they don't have the opportunity to -- they
14 don't have discretion over the nonprofit cost coverage, do
15 they? It is prescribed by the RFRA, isn't it?

16 A With respect to institutional costs, right.

17 Q Let's turn now to Interrogatory 15 of the Postal
18 Service.

19 CHAIRMAN GLEIMAN: I'm sorry, did you say 15?

20 MR. ALVERNO: 15.

21 BY MR. ALVERNO:

22 Q Now there you were asked about a passage in your
23 testimony at page 14, lines 15 to 18. Let's turn to that
24 passage for just a second.

25 You state there, at page 14, lines 15 to 18, that

1 this same phenomenon, the rate for nonprofit and commercial
2 mail, moving in opposite directions within the same rate
3 category, can be observed in two-thirds of nine rate
4 categories that make up the two Standard A mail subclasses,
5 and then you refer the reader to Table 1.

6 So you are saying that you observe asymmetric
7 rates of change in two-thirds of nine rate categories,
8 correct?

9 A Yes.

10 Q And Table 1 on page 15 embodies or includes those
11 rate categories with asymmetric rates of change, isn't that
12 correct?

13 A Yes.

14 Q Now on Table 1 on page 15 of your testimony you
15 list seven rate categories, isn't that correct?

16 A Right.

17 Q That is not two-thirds. That is more than
18 two-thirds, isn't that correct?

19 A Yes.

20 Q Now let's look at the second item for a second.
21 This is the one where we have touched base on this earlier
22 and we uncorrected it, if you will.

23 A I misunderstood --

24 Q Right.

25 A -- which one --

1 Q Okay.

2 A -- I needed to change.

3 Q And we are back to the original figures that were
4 represented there.

5 A Yes.

6 Q Now you have identified that in the category of
7 rate changes that are asymmetric and there is no change
8 proposed for commercial, correct?

9 A There is no change proposed for commercial?

10 Q Right.

11 A As being -- oh, when -- our definition of
12 asymmetrical --

13 Q Yes.

14 A -- when there is no change for one rate but there
15 is a change for the other, either up or down, that we are
16 going to count that as asymmetrical.

17 Q Okay. That is why that is there.

18 A Yes.

19 Q Okay. Let's look now at the fifth item, which is
20 identified as regular automation basic letters.

21 Now for that category the corresponding commercial
22 and nonprofit rate changes are both in the same direction,
23 isn't that correct?

24 A That's right.

25 Q So this is not an example of an asymmetric rate

1 change for nonprofit and commercial?

2 A That's right.

3 Q So it really doesn't belong in this table, does
4 it?

5 A It doesn't. That's true. You're right. That
6 shouldn't be labelled as asymmetric. I was also using this
7 chart for the -- to list in descending order the
8 differential in percentage points between the rate that the
9 Postal Service was proposing for commercial and nonprofit,
10 and that is why I stuck that one in there.

11 Q Okay --

12 A We're not counting that as asymmetric.

13 Q You are not counting it?

14 A Right.

15 Q Okay. Now let's look at the last item, which we
16 have now corrected, so that it is for regular automation
17 3-digit presort and there you have got -- now we have it
18 corrected -- 2 percent rate of change, positive 2 percent
19 rate of change for commercial, a positive 11 percent rate
20 change for nonprofit and a differential in percentage points
21 of 9 percent.

22 A Right.

23 Q So again this is an example of a rate category for
24 which --

25 A So it is not six out of nine. We have to say five

1 out of nine, based on the correction.

2 Q Okay.

3 A Because there they are both moving in the same
4 direction. It is a big differential, 9 percentage points,
5 but they are both moving up -- one barely and the other by a
6 double-digit amount but it is not asymmetric so I have to
7 change that.

8 Q So that one should be excluded as well?

9 A Yes, so I have to say five out of nine, not six.

10 Q Okay. So then looking down on page 15, you would
11 change the sentence that begins not only does postal -- or,
12 yes -- does postal management propose asymmetric rates of
13 change for five of the nine rate categories --

14 A Right.

15 Q That's how you would change that sentence;
16 correct?

17 A Yes.

18 Q Or the beginning of that sentence. And then still
19 in that same paragraph you would change the sentence that
20 reads the smallest differential is --

21 A Is nine.

22 Q Nine percentage points. Okay.

23 A Right.

24 Q Now let's look at the -- let's go back to the
25 table again, table 1, and let's just consider the five of

1 the nine categories for which there are asymmetric rates of
2 change for the commercial and nonprofit subclass.

3 Oh, excuse me, let's just consider the -- let's
4 exclude for a second the one for which the commercial has no
5 change.

6 A Okay.

7 Q The four asymmetric where we have true movement in
8 opposite directions.

9 A Okay.

10 Q And that is the Regular Nonautomation Basic, the
11 ECR Basic, ECR High Density, and ECR Saturation.

12 Now for these four categories, the nonprofit rate
13 goes down in three out of four of those cases, does it not?

14 A Yes.

15 Q Now do you object to the asymmetric movement in
16 those particular instances? In other words, when the
17 nonprofit rate's going down, the commercial rate's going up.

18 A Let me just say two things here, counsel. One is
19 that with respect to ECR High Density and Saturation where
20 the nonprofit -- the Postal Service is proposing about a 16
21 and a 17-percent reduction for the nonprofit rate, those
22 rates are of virtually no use whatsoever to nonprofit
23 mailers. I don't know of any nonprofit mailer that
24 qualifies for the saturation, you know, mailing to 90
25 percent of the addresses in a carrier route.

1 Nonprofits just simply don't have that kind of
2 density of supporters, you know, it's just for any -- you
3 think of any charity, even a neighborhood church hardly -- I
4 mean, it would just be unbelievable to think that 90 percent
5 of the people in one carrier route would be supportive of
6 that organization. And likewise with respect to the
7 high-density rate category, mailing, you know, 125 pieces
8 per carrier route. Nonprofits hardly meet the 10 pieces per
9 carrier route, you know, for the basic.

10 So for -- there's no question that statistically
11 looking at the differential between the proposed rate for
12 commercial, a 1-percent increase, and the proposed rate for
13 the nonprofit, minus 16 percent, minus 17 percent, that
14 looks very good on paper, but in terms of practical impact
15 in the marketplace, there isn't any.

16 I'm sorry, could you repeat your question? I
17 forgot the second part of it.

18 [Laughter.]

19 The second part of what I -- there's more of the
20 response that you asked me to make to you, and I --

21 Q Yes, in other words --

22 A I'm sorry.

23 Q For three out of the four categories for which
24 there are asymmetric rates --

25 A Oh, and do we -- okay, I remember now. Thank you.

1 Do we object to that?

2 Q Right. And do you object to those asymmetric
3 changes in those cases?

4 A No, of course we don't. But not to get in on
5 quibbling rate category by rate category, but as I said
6 earlier, we're just trying to understand what's going on
7 here, and we see that where pieces -- yes, in some cases the
8 nonprofit rate is going down, the commercial rate is going
9 up. But where the -- where most of nonprofit mail is, for
10 example, the Nonautomation or Automation, the basic presort
11 rate for Automation, for the basic rate for Nonautomation,
12 for the Nonautomation three-digit five-digit presort rate,
13 that's where most of nonprofit mail is.

14 It's Automation, it's nonprofit -- I'm sorry, it's
15 Nonautomation, sorted to three or five digits. It's
16 Nonautomation Basic. It's the Automation Basic. There, the
17 increases, you know, 18 percent, 20 percent, 19 percent,
18 where most nonprofit mailers are -- you know, they're
19 putting on the bar code.

20 Almost half of nonprofit Standard A mail is
21 pre-bar-coded. Nonprofits are preparing their mail, that is
22 the Postal Service's raw material, in the way that the
23 Postal Service would like to have it presented to them,
24 about 45 percent, about half of nonprofit mail. Even in the
25 Basic, the Nonautomation Basic presort rate, that mail can

1 be automated by the Postal Service's automated sorting
2 equipment, because it's OCR-readable, and there, you know,
3 the rates that are being proposed are these enormous
4 double-digit rates, 20 percent, 19 percent.

5 We look over at the comparable commercial rate,
6 there are these rollbacks. Yes -- or small increases. Yes,
7 a 4-percent rollback is not a big rollback, but still,
8 compared to 20-percent increase -- and so we're saying well,
9 what's driving this differential?

10 You know, we're not saying in every single case,
11 but where we look where most nonprofit mail falls, we see
12 this enormous differential going in the direction of the
13 nonprofits being proposed, you know, the rate being proposed
14 for nonprofits being like a double-digit increase. And
15 we're asking, we're trying to figure out where -- what's
16 driving this? What are the costs that are driving?

17 And we say well, it can't be the overhead cost,
18 because that's being set by this mechanistic formula. So,
19 therefore, it's got to be the attributable costs. And what
20 is there, especially in these Automation categories, what
21 costs are there that are driving those differentials?

22 That's what we've been trying to -- that's been
23 the thrust of the limited money that we've had to spend in
24 this rate case. That's where we've spent it, in the
25 interrogatories trying to find out the answer to that

1 question.

2 CHAIRMAN GLEIMAN: Mr. Alverno, do you have much
3 cross-examination?

4 MR. ALVERNO: No.

5 CHAIRMAN GLEIMAN: What do you mean by that? Ten
6 minutes?

7 MR. ALVERNO: Ten, 15 minutes at the most.

8 CHAIRMAN GLEIMAN: Okay. Thank you. Just go
9 ahead.

10 BY MR. ALVERNO:

11 Q Just to follow up on that one point, Ms. Emigh,
12 the nonprofit Automation rate categories experienced
13 double-digit declines in connection with Docket No. MC96-2;
14 isn't that correct?

15 A This is the --

16 Q Again, I'm looking at -- if you want to refer back
17 to the --

18 A USPS --

19 Q Yes, the exhibit.

20 A NFN-T-1-XE-1? And the four categories that we had
21 identified earlier?

22 Q No, these are just -- looking at the Automation
23 categories.

24 A Oh, I'm sorry, looking at the Automation --

25 Q Categories for letters. Those sustained

1 double-digit declines in rates.

2 A Yes.

3 Q All right, let's turn now to table 2 on page 17 of
4 your testimony. As corrected, you have a
5 16-percentage-point -- excuse me, strike that.

6 What you have presented in table 2 as I understand
7 it is the magnitude of the differential between nonprofit
8 and commercial Standard A mail as proposed by U.S. Postal
9 Service. And you divide -- it looks like you've divided
10 this up by shape; correct?

11 A By shape -- by rate category. Because I just went
12 down the rate categories. Really a very simple --

13 Q Okay.

14 A You know -- it's just an average.

15 Q Okay.

16 A And it was just, you know, as a gauge, as a
17 benchmark to get some handle on the differential for those
18 two groups -- letters and nonletters.

19 Q All right, now, the 16-percent figure that you
20 report for letters is based upon the seven letter rate
21 categories that you report in table 1; isn't that correct?

22 A Right. And did you understand what I did?

23 Q Well, yes, we'll get to there. So that means that
24 all letter mail volume is not included in the calculation of
25 that 17-percent figure; isn't that correct?

1 A Right. It's just those rate categories.

2 Q Okay. And that's a simple average across all --
3 across those categories; isn't that correct?

4 A Right. I just went down and took for each of
5 those rate categories the proposed rate of change for the
6 commercial rate, the proposed rate of change for the
7 nonprofit counterpart, and then just counted the number of
8 percentage points difference going from one -- the end of
9 the spectrum from commercial to the nonprofit.

10 Q So your 16-percent figure is not volume-weighted,
11 is it?

12 A No, it's not.

13 Q Okay.

14 A I say that. It's just a simple average.

15 Q Um-hum.

16 A And the 16 -- it's not 16 percent, you know, it's
17 the differential between the proposed change for the
18 nonprofit and the proposed change for the comparable
19 commercial rate category.

20 Q Okay. And the 20-percent figure also is a
21 straight average, is it not?

22 A That's right.

23 Q Okay.

24 A It's just a --

25 Q Just for the selected nonletter rate categories.

1 A Right.

2 Q It doesn't represent all nonletter mail volume,
3 does it? Only certain selected categories.

4 A Right. And in there I describe which ones we
5 didn't count and the reasons why.

6 You know, for example, there's a couple rates
7 where I thought they were new rates that the Postal Service
8 was proposing, so if you did a rate of increase, it's going
9 to be something like, you know, over a hundred percent. I
10 mean, it's going to be a meaningless number just because
11 there wasn't a rate to begin with. Or -- so I thought it's
12 unfair to show like a 50-percent differential when that's
13 going to be driven by this, you know, number that wasn't
14 mathematically meaningful in the first place. So that's why
15 I excluded those.

16 Q All right, let's turn to your response to
17 Interrogatory No. 20.

18 A Yes.

19 Q Now there you are asked about the figures in Table
20 2. You acknowledge that six rate categories were omitted in
21 computing the average differentials, isn't that correct?

22 A Yes, and then I went on to explain each one of
23 those six.

24 Q Right, and you threw one of them out because
25 admittedly there isn't a differential, isn't that correct?

1 A Yes.

2 Q So in other words you decided to exclude from your
3 computation a rate category because it didn't prove your
4 point?

5 A Well, I just was trying to -- I mean we can put it
6 in.

7 Q If you put it in, that would have the effect of
8 increasing the denominator though and reducing the total --

9 A Right --

10 Q -- reducing the percentage.

11 A I could have put in other ones that would have
12 changed it the other way and I think actually when I did the
13 seven -- was there one that was -- of the seven rate
14 categories, there in going back and looking over it I did --
15 okay, I take that back. Right. But we could recompute it
16 with that one in.

17 When the differential is 20 percentage points, it
18 is not going to make a great deal of difference to drop out
19 or add one.

20 Q Let's turn now to Table C of your interrogatory
21 responses. Now I am referring -- let me direct your
22 attention to the text at the bottom of Table C where you
23 state, "Table C shows that in this subclass as in others for
24 almost every individual rate the proposed increases for
25 nonprofits would be much more than for commercial mail and

1 the few decreases less than commercial rate mail."

2 Isn't that correct?

3 A Yes.

4 Q Now looking at Table C, I only see three rate
5 categories in nonprofit that are proposed to increase. Do
6 you agree?

7 A Okay -- oh, wait -- okay.

8 Q So yes?

9 A Yes.

10 Q Okay. So when you state at the bottom that there
11 are few decreases for nonprofit, in fact the majority are
12 decreases?

13 A Yes, but as I was discussing earlier, like in the
14 rate category Letters, the enhanced carrier route high
15 density and saturation minus -- a 16 percent minus 20
16 percent -- those are really, you know, hypothetical rates
17 because there aren't nonprofits that mail to 90 percent of
18 the addresses on one carrier route.

19 Q Ms. Emigh, I am just asking you about the
20 statement.

21 A Yes -- and I said yes, so I just want to add that,
22 that is a minus 16 percent, a minus 17 percent there doesn't
23 do anybody any good because nonprofits don't mail at those
24 rates. They can't qualify for those rates because they
25 don't have that density of mailing lists.

1 They don't mail to 90 percent of the addresses on
2 the carrier route. They can't even qualify for 125 pieces
3 for one carrier route.

4 Q Looking back at your --

5 A Excuse me -- and then as far as the -- I'm sorry,
6 it just takes a couple seconds here to get back into this --
7 and then with respect to the piece rates, you know, there's
8 something going on here. I am not sure what you all have in
9 mind here, but, you know, for example you have got the pound
10 rate going down and then these -- you know, like take the
11 commercial piece rate for the basic piece rate, a 38 percent
12 rollback versus a 10 percent rollback for nonprofits. I am
13 just not sure -- this is why we asked these interrogatories,
14 trying to get at the underlying cost data.

15 It is hard to conceptualize what is going on with
16 the underlying, the Postal Service's underlying costs or
17 what pricing objective -- obviously, some pricing objective
18 here is that you are trying to reduce the rates for heavy,
19 very heavy pieces of mail that's going at the carrier
20 rate --

21 Q Right.

22 A Ten pieces, 125 or mailing to 90 percent of the
23 addresses -- and so the objective here must be to reduce the
24 rates for this, and the only thing I can think of here is
25 like catalogs, and you know, nonprofit just don't mail heavy

1 catalogs.

2 They don't mail heavy catalogs and they can't
3 qualify for these high dense carrier route rates, so these
4 rollbacks are really of no use to nonprofits.

5 Q All right. Now you also state that -- in your
6 text there that the proposed increases for nonprofits would
7 be much more than for commercial mail, but as a look at
8 those three rate categories for which there are increases,
9 the changes are either the same for commercial nonprofit or
10 the nonprofit increase is much lower, isn't that correct?

11 A Yes.

12 MR. ALVERNO: Nothing further. Thank you.

13 COMMISSIONER HALEY: Is there any further recross?

14 MR. MILLER: May I speak to the witness for a
15 minute?

16 COMMISSIONER HALEY: Yes, you may speak to her.

17 [Discussion off the record.]

18 MR. MILLER: Commissioner, we have no redirect.

19 COMMISSIONER HALEY: Well, we really weren't
20 prepared at the moment for that, Mr. Miller.

21 I just thought you wanted to speak to her. Just a
22 minute.

23 MR. MILLER: Oh, I'm sorry.

24 COMMISSIONER HALEY: I would like to ask
25 Commissioner Omas, do you have any concerns?

1 COMMISSIONER OMAS: No questions.

2 COMMISSIONER HALEY: I think I would like to go
3 off the record for a minute.

4 [Recess.]

5 CHAIRMAN GLEIMAN: Any redirect? No redirect?

6 MR. MILLER: Commissioner Haley already determined
7 that.

8 CHAIRMAN GLEIMAN: Okay. I just wanted to make
9 sure and Commissioner Haley was making sure that I didn't
10 have any questions that I wanted to ask, and I apologize for
11 having to step out, but I had to take some phone calls that
12 were rather important.

13 If there is no redirect, then Ms. Emigh, that
14 completes your appearance here today.

15 We want to thank you for your contributions to the
16 record and you are excused if there is nothing further.

17 [Witness excused.]

18 MR. KOETTING: Mr. Chairman?

19 CHAIRMAN GLEIMAN: Yes, sir, Mr. Koetting?

20 MR. KOETTING: If I could just recapitulate my
21 understanding of what is going to happen on Monday with
22 regard to the hearings on the mail processing volume
23 variability?

24 CHAIRMAN GLEIMAN: I would very much appreciate
25 that because I am not quite sure, so maybe between the two

1 of us we can figure it out.

2 MR. KOETTING: Of the three witnesses that were
3 initially scheduled, we -- I should say you entered into
4 evidence today Dr. Neels' supplemental testimony and the
5 interrogatory responses and as far as I am aware, he has
6 discharged all his responsibilities.

7 CHAIRMAN GLEIMAN: It is my understanding that the
8 Postal Service completed its cross-examination on both his
9 original and supplemental testimony and Dr. Neels does not
10 have to come back.

11 That leaves us with four parties -- USPS Witness
12 Baron; AMMA et al., Witness Crowder; USPS Witness Bradley;
13 and MPA Witness Higgins.

14 It is my understanding that there have been some
15 indications of oral cross-examination for three of those
16 four witnesses -- Baron, Crowder, and Bradley.

17 MR. KOETTING: I was unaware that anybody has
18 requested to cross-examine Dr. Bradley.

19 I thought --

20 CHAIRMAN GLEIMAN: I thought that UPS had --
21 maybe, Mr. McKeever, you can enlighten us with respect to
22 your interest in either Bradley or Higgins.

23 MR. MCKEEVER: Mr. Chairman, we do not expect at
24 this -- well, we will not have any cross-examination for Dr.
25 Bradley or for Mr. Higgins.

1 CHAIRMAN GLEIMAN: That being the case, Witnesses
2 Bradley and Higgins do not have to appear because if there
3 is no one who has indicated any cross for them and to the
4 best of my ability to determine right now we are not going
5 to have any questions from the bench, there is no need for
6 either of those two witnesses to appear.

7 If there is testimony to be entered, certificates
8 of authenticity would suffice for that purpose and that
9 would leave us with Baron and Crowder.

10 MR. McKEEVER: Mr. Chairman, we will have some
11 written cross-examination of Dr. Bradley, but I have spoken
12 with Mr. Koetting about that and again the interrogatory
13 answers and questions were accompanied by a declaration, so
14 at least for our purposes we see no need for Dr. Bradley to
15 appear -- if that is acceptable.

16 CHAIRMAN GLEIMAN: We are all on the same
17 wavelength so far?

18 MR. KOETTING: We are indeed, Mr. Chairman.
19 In fact, I have the material for Dr. Bradley now.
20 We can either do it on Monday or now, at your
21 convenience.

22 CHAIRMAN GLEIMAN: As far as I am concerned, we
23 can do it now.

24 I just have to get back in gear.

25 MR. KOETTING: Yes. Mr. Chairman, I have two

1 copies of USPS-ST-55, which is the supplemental testimony of
2 Michael D. Bradley on behalf of the United States Postal
3 Service, and it is accompanied by a declaration adopting it
4 as his supplemental written testimony, and I would request
5 that this be accepted into evidence in response to the
6 Commission's notice of inquiry.

7 CHAIRMAN GLEIMAN: I will direct that the
8 testimony and exhibits of Witness Bradley be received into
9 evidence and transcribed into the record at this point. And
10 it is accompanied by a certificate of authenticity, right?

11 MR. KOETTING: That is correct, Mr. Chairman.

12 CHAIRMAN GLEIMAN: Okay.

13 [Supplemental Direct Testimony and
14 Exhibits of Michael D. Bradley,
15 USPS-ST-55, was received into
16 evidence and transcribed into the
17 record.]

USPS-ST-55

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

POSTAL RATE AND FEE CHANGES, 1997

Docket No. R97-1

SUPPLEMENTAL TESTIMONY OF
MICHAEL D. BRADLEY
ON BEHALF OF
UNITED STATES POSTAL SERVICE

Statement of Professor Michael D. Bradley
on
The Postal Rate Commission's
"Notice of Inquiry No. 4 On Mail Processing Variability"

February 6, 1998

1

2 **I. INTRODUCTION**

3

4

5

6

7

8

9

10

11

When an econometrician is fortunate enough to have access to panel data, he or she has information along two dimensions — through time and across sites. This is a considerable advantage over either cross sectional data, that can only vary across sites, or time series data, that can only vary through time. However, the dual dimension of the data does raise an issue about how the data should be organized for estimating econometric equations. The “Notice of Inquiry No. 4 On Mail Processing Variability” (hereinafter NOI #4) touches on a single dimension of this issue and thus seeks statistical evidence on only a single hypothesis.

12

13

14

To understand the statistical test that the Commission requested and to understand the implications of the results, it is important to understand the context for the single, specific, statistical test requested in NOI #4.

15

16

17

18

19

20

If one starts from the position that the individual sites in the panel have very little in common, then one would think of the panel data as a set of individual time series.¹ In that case, an econometric model would be estimated individually for each site. Formally, this would imply a set of equations of the form:

¹ Of course, this approach requires that there are sufficient continuous data on each site to permit estimation. If the panel data set includes just two or three data points for a site, then such an approach would not be possible.

$$y_{it} = \alpha_i + \beta_i x_{it} + \eta_{it}$$

1 If one believes that there are some commonalities in production, or if one
 2 is trying to estimate the response of the entire system of sites to a change in
 3 volume, then one imposes a restriction on the above equation. By restricting the
 4 slope parameters (the β_i) to be equal across sites while letting the intercept
 5 parameters vary (α_i), one captures the common or, in some sense, "average"
 6 response to volume changes. Yet this approach does not impose the strict
 7 requirement that the production process is identically equal across all sites. In
 8 fact, the use of a flexible functional form (like the translog) within this approach
 9 allows for varying elasticities across sites with out the need for estimating
 10 additional parameters. This intermediate and widely used approach to exploiting
 11 the richness of panel data is often referred to as the "fixed effects" model and
 12 can be written formally as:

$$y_{it} = \alpha_i + \beta x_{it} + \eta_{it}$$

13 A formal statistical test for this restriction is provided by testing the
 14 hypothesis that $\beta_1 = \beta_2 = \beta_3 \dots \beta_N$, where N is the number of sites in the data set.
 15 This is the statistical test requested in the NOI #4.

16 A more restrictive set of assumptions is embodied in what is known as the
 17 "pooled model." In this model, the production process is assumed to be
 18 identically equal across all sites and a single set of coefficients is estimated for
 19 all sites. The pooled model, which is nested inside and thus more restrictive

1 than the fixed effects model, is given by:

2

$$y_{it} = \alpha + \beta x_{it} + \eta_{it}$$

3 The formal statistical test for the pooled model is provided by testing the
4 hypothesis that $\beta_1 = \beta_2 = \beta_3 \dots \beta_N$ and that $\alpha_1 = \alpha_2 = \alpha_3 \dots \alpha_N$, where N is the
5 number of sites in the data set. The NOI #4 did not request testing this
6 hypothesis, presumably because the Commission was aware that rejecting the
7 fixed effects model relative to the site-by-site ~~necessarily~~ implies rejecting the
8 pooled model in the same comparison.

9 In the balance of these comments, I explain how one goes about testing
10 these restrictions for the data set and model at hand, and I provide the results of
11 such testing. I then explain the implications of the test results.

12

13

1 **II. PRELIMINARY CONSIDERATIONS**

2 There are procedures in econometrics for which specifying a "textbook"
3 set of statistical tests is easy in theory, but for which actually carrying out those
4 tests with real data and a real model is much more complex and difficult. The F-
5 tests requested in NOI #4 are an example of such a procedure. Because the
6 calculation of the requested F-statistics is not completely straightforward, the
7 Commission should be aware of important issues that must be addressed in
8 making those calculations. It should also check to be sure that all responses to
9 NOI #4 address these issues. To inform the Commission on these issues, I
10 provide a brief discussion of each.

11

12 **A. The Issue of Non-invertability**

13 The object of the F-test specified in the NOI #4 is to test the restriction
14 that all of the estimated non-intercept parameter values are the same at all of the
15 individual sites. This requires, of course, that the same set of parameters be
16 estimated for each site. Although this is clear in theory, in practice this can be
17 difficult because the data for a particular site may not permit estimation of the
18 equation. In particular, one may not be able to invert the matrix of right-hand-
19 side variables for a specific site and thus may not be able to estimate the set of
20 regression coefficients for that site. Non-invertability can arise because of

1 perfect collinearity among the limited number of data points for a site.² In these
2 instances, OLS estimates for the set of model parameters cannot be obtained.³

3 To ensure direct comparability in calculating the F-statistics, I re-estimated
4 the fixed effects and pooled models with data from just those sites for which the
5 data permitted estimation of the set of site-specific parameters. All subsequent
6 F-tests are, and should be, performed on a consistent set of data and estimated
7 parameters.⁴

8

9 B. The Issue of Serial Correlation

10 F-tests of the type requested in the NOI #4 presume well-behaved residuals
11 from the estimated regressions. In the particular case at hand, it is known that
12 the residuals are serial correlated. Therefore, the F-tests should be done on the
13 models corrected for serial correlation. In addition, one must recognize that an
14 equation for each site is being estimated individually. Just as the α and β
15 coefficients are allowed to vary across sites, so should be the ρ (serial

² It is important to recognize that this is not just the multicollinearity problem described in my response to POIR #7. Under that type of *multicollinearity*, the estimated coefficients are unreliable. Here, in contrast, the matrix cannot be inverted so the specified model cannot be estimated for the site.

³ The test requested by the NOI #4 highlights the advantage of working with a data set that includes at least 39 observations per site. To the extent the data set was populated by small, fragmented chains of data, these tests could not go forward.

⁴ Parameter estimates and the calculation of the F-statistics are included in Library Reference H-339, "Econometric Programs and Results Provided in Response to NOI #4."

1 correlation) coefficients.⁵

2

3 **C. The Issue of Mean Centering.**

4 When I estimated the fixed effects and pooled models for my testimony, I
5 mean centered the data for computational convenience. Under mean centering,
6 each observation is expressed as its deviation from the overall sample mean.
7 Mean centering allows calculation of the desired elasticity directly from the TPH
8 coefficients. However, when the models are estimated on a site-by-site basis,
9 there is no advantage in constructing the data as deviations from the overall
10 sample mean.⁶ The site-by-site regressions are not on mean centered data.
11 Therefore, to ensure direct comparability of the results of the various estimations,
12 I re-estimated the fixed effects and pooled model on the data without mean
13 centering⁷

14

⁵ I do, however, present the F-tests based upon the uncorrected residuals. Although inferences should not be based upon these calculated statistics, I present them to reassure the Commission that the F-test results are not dependent upon the serial correlation correction.

⁶ If one wanted to preserve the mean centering approach, one could mean center each site on its own data. The important thing is to be consistent among the site-specific regressions and the fixed effects and pooled models.

⁷ When the data are not mean centered, one cannot simply calculate the variability from the coefficients on the TPH variable. Instead, one must calculate the derivative of log hours with respect to log TPH. This means that various cross product terms are included in the elasticity calculation. Also, because the models are designed to calculate the response in hours to a sustained increase in volume, the derivative should also include the response in hours to the lagged TPH terms.

1 **III. TESTING THE RESTRICTIONS**

2 As explained in the introduction, the test requested in the NOI #4 is
3 actually part of a sequence of statistical tests which can be used on panel data.⁸
4 In this section, I present and explain the complete sequence of tests and present
5 the results of applying the sequence of tests to the current data. Recall that
6 there are three sets of possible parameters and three hypotheses to be tested.⁹

7

8 **A. Hypothesis 1: Pooled Model vs. Site-by Site Regressions**

9 The first hypothesis that is tested is that of the restrictions embodied in the
10 pooled model. The hypothesis of common intercept and slope coefficients,
11 which I call H_1 , amounts to a set of $(K+1) * (N-1)$ restrictions, where K is the
12 number of (non-intercept) right-hand-side variables and N is the number of sites.
13 This hypothesis can be tested by calculating the following F statistic:

14

15

⁸ For a discussion of this sequence of F-tests please see, Cheng Hsiao, Analysis of Panel Data, Cambridge University Press, Cambridge, U.K., 1986 at pages 12-18.

⁹ Formally speaking, there is a fourth parameterization that could be investigated. It is technically possible to envision a set of parameters in which the intercept is the same at all sites but the slope coefficients vary. However, I follow Hsiao, (see p.13) in not testing this case:

Because it is seldom a meaningful question to ask if the intercepts are the same when the slopes are unequal, we shall ignore the type of restrictions postulated by (2.2.3).

$$F_1 = \frac{(SSE_p - SSE_s) / [(N-1)(K+1)]}{SSE_s / [NT - N(K+1)]}$$

1 where SSE_p is the sum of squared errors from the pooled regression and SSE_s is
 2 the sum of the sum of squared errors from the site-by-site regressions. If this F
 3 statistic is not significantly different from zero, then it would suggest pooling the
 4 data and estimating a single set of parameters.

5

6 **Hypothesis 2: Fixed Effects Model vs Site-by-Site Regressions**

7 The second hypothesis compares the fixed effects model with the site-by-
 8 site regression. The fixed effects model assumes common slope coefficients but
 9 different intercepts. I term this hypothesis H_2 and it amounts to testing a set of
 10 N-1 restrictions on the coefficients. This hypothesis is tested by calculating the
 11 following F statistic:

$$F_2 = \frac{(SSE_F - SSE_s) / [(N-1)(K)]}{SSE_s / [NT - N(K+1)]}$$

12 where SSE_F is the sum of squared errors from the fixed effects model.

13

14 **B. Hypothesis 3: Pooled Model vs Fixed Effects Model**

15 Under the maintained hypothesis of common slope coefficients, one can
 16 test the fixed effects model against the pooled model. I call this last hypothesis
 17 H_3 . Testing this hypothesis requires testing a set of N-1 restrictions on the α

1 coefficients given the maintained hypothesis that the β_j are equal. This
 2 hypothesis is tested by the following F statistic:

3

$$F_3 = \frac{(SSE_p - SSE_F) / [(N - 1)]}{SSE_F / [NT - N - K]}$$

4

5

6 The calculated F-statistics for each of the three hypothesis are presented
 7 in Table 1 below. Results are presented for residuals corrected for serial
 8 correlation as well as for uncorrected residuals.

9

10

11

12

13

14

15

16

17

18

19

20

21

22

TABLE 1				
F-Statistics for Hypothesis Tests				
	Manual Letter	Manual Flat	LSM	OCR
Serial Correction Included				
F ₁	5.79	5.60	6.04	3.48
F ₂	4.03	3.48	3.45	2.21
F ₃	27.75	36.71	43.42	27.15
No Serial Correction Included				
F ₁	40.26	40.79	41.13	23.40
F ₂	9.90	10.05	9.63	9.61
F ₃	232.00	241.77	244.53	106.33

1 **IV. INTERPRETING THE RESULTS**

2 Because of the large number of observations in the data set, the critical
3 value for all of the F-tests can be taken as 1.0. Thus, in any instance in which
4 the calculated F-statistic exceeds 1.0, rejection of the null hypothesis is
5 indicated. The results for F_1 , presented in Table 1 indicate that the null hypothesis
6 of site-specific homogeneity is rejected. This implies that site-specific
7 heterogeneity is important and, consequently, a pooled equation should not be
8 estimated for the mail processing activities. The question, then, is how to model
9 the site-specific heterogeneity. Site-specific heterogeneity can be modeled with
10 either a fixed effects approach or a site-by-site regression approach.

11 The second F-statistic, termed F_2 , provides information on this question as
12 it investigates the hypothesis that the 27 (non-intercept) slope coefficients are
13 identical across sites. The results for F_2 suggest that this hypothesis is also
14 rejected, albeit with much smaller F-statistics. This result is not surprising, as I
15 suggested in an earlier interrogatory response, because the test requires
16 equality of 27 different regression coefficients across hundreds of sites. In fact, it
17 would be surprising if the null hypothesis did hold.

18 Finally, as a check on the nature of the site-specific heterogeneity, one
19 can test the restriction that the α , the same across facilities, given the maintained
20 hypothesis that the β_i are. This set of restrictions is tested by comparing the
21 fixed effects model with the pooled model, and the results are presented in the
22 F_3 row in Table 1. The F-statistics for testing this hypothesis are very large and
23 thus indicate a "strong" rejection of the pooled model in favor of the fixed effects

1 model.¹⁰

2 If the approach to econometric modeling was based solely upon this set of
3 F-tests, the results would indicate a preference for site-by-site estimation of the
4 regression equations. However, in a more informed determination, the
5 econometrician should consider a number of factors in making the modeling
6 choice. These factors include:

7

- 8 1. The severity of the restrictions being testing.
- 9 2. The goal of the econometric research.
- 10 3. The ability of the data to support reliable site-specific
11 equations.
- 12 4. The possible reasons for rejection of the restrictions.
- 13

14

15 As I discussed above, the complexity of the econometric specification
16 implies that a relatively large number of parameters need to be estimated for
17 each site. This increases the "tightness" of tests of the fixed effects regression
18 and makes it more likely that the hypothesis will be rejected. Yet the richness of
19 the specification is a strength of the analysis, not a weakness, and the fixed
20 effects approach allows one to estimate a more sophisticated model. This
21 advantage must be traded off against the "cost" of imposing the restrictions.

22 This tradeoff can be evaluated relative to the goal of the research. The

¹⁰ This result corroborates the Gauss Newton specification tests presented in my testimony. Those results strongly suggested that site-specific differences are important.

1 goal here is not to estimate individual site equations or aggregate equations to
2 be applied to individual sites for the purpose of, say, evaluating the individual
3 sites. Rather, the goal is to produce an aggregate variability or elasticity for the
4 relevant cost pool.¹¹ This means that even if site-specific elasticities are
5 calculated, they must be averaged or aggregated in some way. This
6 aggregation, in itself, imposes some implicit restrictions, so in choosing between
7 the models, the validity of these implicit restrictions must be balanced against the
8 validity of the explicit restrictions in the fixed effects model.

9 In addition, the site-specific variabilities are dependent upon the ability of
10 the data to estimate reliable equations for each site. If, for example, reliable
11 equations cannot be estimated for a number of sites, then the aggregate
12 elasticity derived from this approach will be less representative than the elasticity
13 derived from the fixed effects model. Moreover, given the size and complexity
14 of the mail processing analysis, evaluating the set of site-specific equations for
15 just one activity would be a time-consuming job. Evaluating and defending the
16 site-specific equations for each site, for each activity, is an overwhelming job.
17 This also reduces the attractiveness of the site-by-site approach — it is far more
18 difficult to get a thorough review of the econometric results.

19 The site-specific approach also has the weakness that does not provide

¹¹ The fact that the site-specific equation approach is not consistent with estimating an aggregate variability does not imply that it is necessarily the best econometric model to estimating site-specific variabilities. As demonstrated in my response to POIR #7, the fixed effects model provides a complete set of sensible variabilities for individual sites. In fact, the fixed effects model can provide variabilities for many sites for which the site-specific approach cannot.

1 variabilities for costs generated at sites not included in the econometric analysis.
2 The fixed effects approach provides a representative variability that is applicable
3 to the costs for all sites included in the data as well as for those that are not.
4 Because the site-specific approach is just that — site-specific — its estimated
5 variabilities are not directly applicable to other sites. Thus, it does not provide a
6 method for generating variabilities for sites not included in the estimation
7 process.

8 Finally, the inability of the site-specific data to estimate reliable site-
9 specific equations may be a contributor to the rejection of the null hypothesis.
10 To the extent that data inadequacies at the site-specific level cause variation in
11 the estimated coefficients, the likelihood of rejection of a "true" restriction is
12 increased. It is clear, for example, that the site-specific equations suffer from
13 multicollinearity, which generates instability in the parameter estimates. It is thus
14 possible that the calculated F-statistics are reflecting this problem. Moreover,
15 traditional remedies for multicollinearity include adding more data to the analysis
16 and imposing restrictions on the parameters to be estimated. These are just the
17 remedies provided by the fixed effects approach. Use of the fixed effects
18 approach thus avoids the problems generated by the site-specific data
19 inadequacies.

20 When all of these factors are considered, I believe that the fixed effects
21 approach continues to be superior to the site-by-site approach even given the
22 results of the F-tests. For the reasons discussed above, I would encourage the
23 Commission to adopt the fixed effects approach.

1 Nevertheless, to the extent the Commission felt compelled to accept the
2 site-by-site approach, it is important to understand the implications for the
3 variability estimates. To gain that understanding, I used the site-specific
4 equations to calculate an elasticity for each site. This calculation is performed by
5 using each site-specific regression equation with the means of the data for just
6 that site. The derivative of log hours with respect to log TPH (and lagged log
7 TPH) is calculated from the regression equation for each site in the data. It is
8 then evaluated at the sample mean values for that site alone.

9 The clear implication that emerges from this exercise is that the site-by-
10 site results strongly suggest that the true underlying variability is not 100 percent.

11 If the true underlying variability were 100 percent, the distribution of site-specific
12 variabilities would be massed around that value. However, as the attached
13 histograms show, the vast majority of sites have a variability *between zero and*
14 *100 percent and the variabilities are massed at a value far below 100 percent.*

15 The histograms also show that there are a few outliers with variabilities
16 that are negative or greatly larger than 100 percent. But given the
17 multicollinearity problem that I described before, such results are expected.
18 Nevertheless, the site-by-site results seem to validate the reliability of the data
19 because for the overwhelming majority of sites, the data produce "sensible"
20 variabilities.¹² Taken together, the points indicate that the true underlying

¹² I do not make a stronger claim for the site-by-site results because, given the number of individual sites, I could not review all of the individual site results and determine the reliability of each one. Therefore, I view the site-by-site results as being *suggestive and corroborative*.

1 variability is far from 100 percent, particularly for the manual letter and manual
2 flat activities.

3 I believe that there are some serious concerns associated with applying
4 the site-by-site approach, but if the Commission did pursue the disaggregated
5 approach, the individual site variabilities would have to be combined into a single
6 overall variability. To see the outcome of this experiment, I calculated the
7 average variability from the site-by-site regressions and compared it with the
8 variability for the pooled model and the fixed effects model for the same offices.¹³
9 The calculated variabilities for the site-by-site approach, the fixed effects
10 approach and the pooled approach are all presented in Table 2.

11

12

13

14

15

16

17

18

TABLE 2				
Estimated Variabilities from the Three Approaches				
	Manual Letter	Manual Flat	LSM	OCR
Site-by-Site	0.524	0.523	0.832	0.707
Fixed Effects	0.728	0.763	0.913	0.768
Pooled	1.030	1.071	1.024	0.978

19

20

21

Interestingly, in all cases, the average site-by-site variability is lower than
the fixed effects variability and the pooled variability. In fact, as additional
restrictions are imposed, the variability rises. This indicates that the pooling bias,

¹³ Recall that the data for some offices do not allow estimation of the individual site regressions. To ensure an accurate comparison, I re-estimated the equation and variabilities for the pooled model and the fixed effects model for the exact set of offices for which an individual equation is available.

1 if there is one, is positive. A positive pooling bias means that the fixed effects
2 model, if anything, may overstate the "true" variability.

3

4 **V. CONCLUSION**

5 The specification analysis implied by the NOI #4 reveals that a fixed
6 effects approach appears to be a good approach for econometric modeling of
7 mail processing activities. The fixed effects approach provides the best balance
8 of raw statistical accuracy, accurate model specification, avoidance of bias, and
9 overall econometric reliability. It makes use of all the data in an effective way
10 and provides an accurate estimate of the overall variability without encountering
11 severe multicollinearity problems. It permits specifying an equation that
12 effectively controls for non-volume influences on hours, ensuring an accurate
13 measure of the elasticity estimate

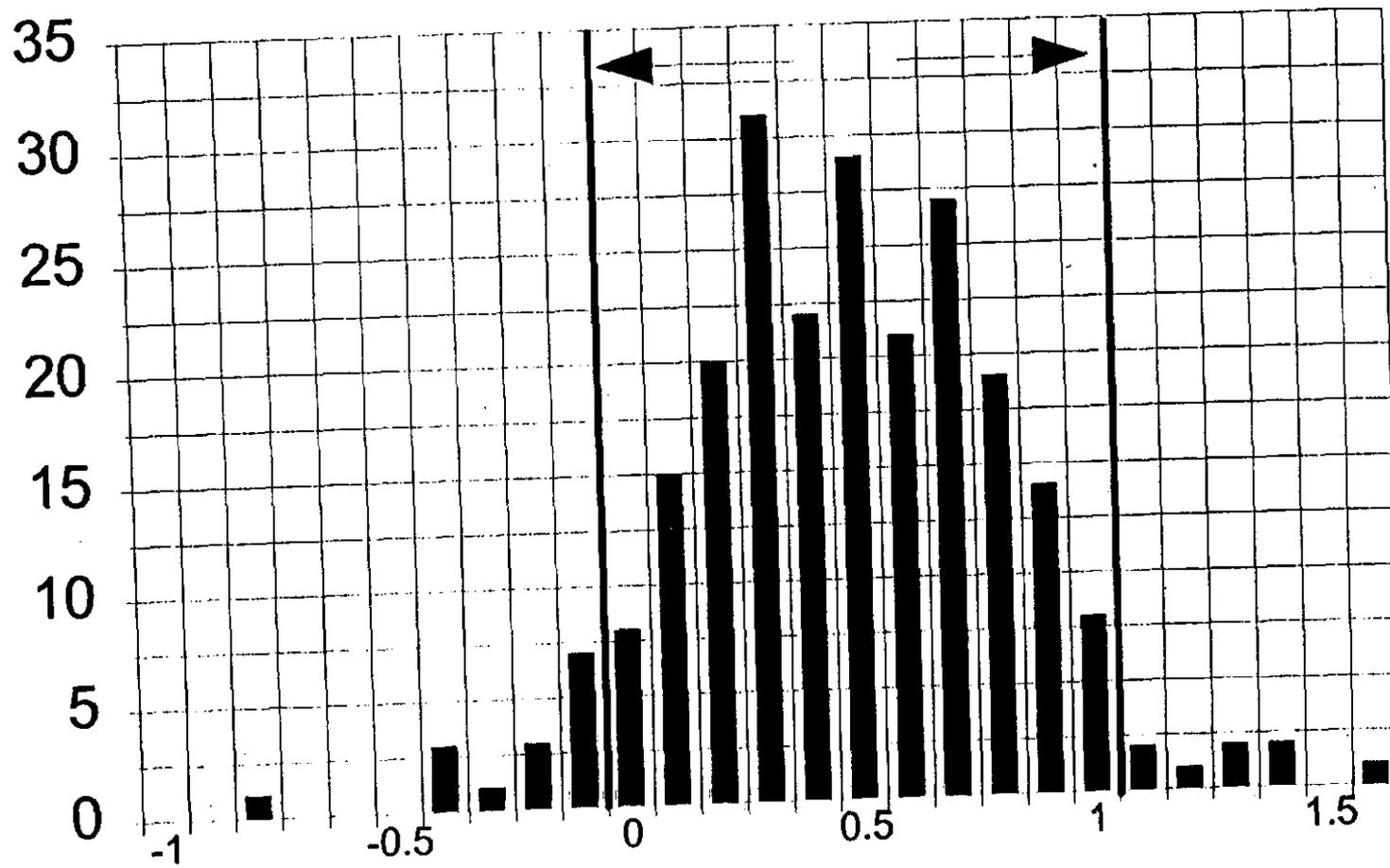
14 In addition, the specification tests establish that if one uses statistical tests
15 to reject the fixed effects model, those same tests can only imply a simultaneous
16 rejection of the hypothesis that the mail processing variability is 100 percent.

Appendix to
Statement of Professor Michael D. Bradley
on
The Postal Rate Commission's
"Notice of Inquiry No. 4 On Mail Processing Variability"

February 6, 1998

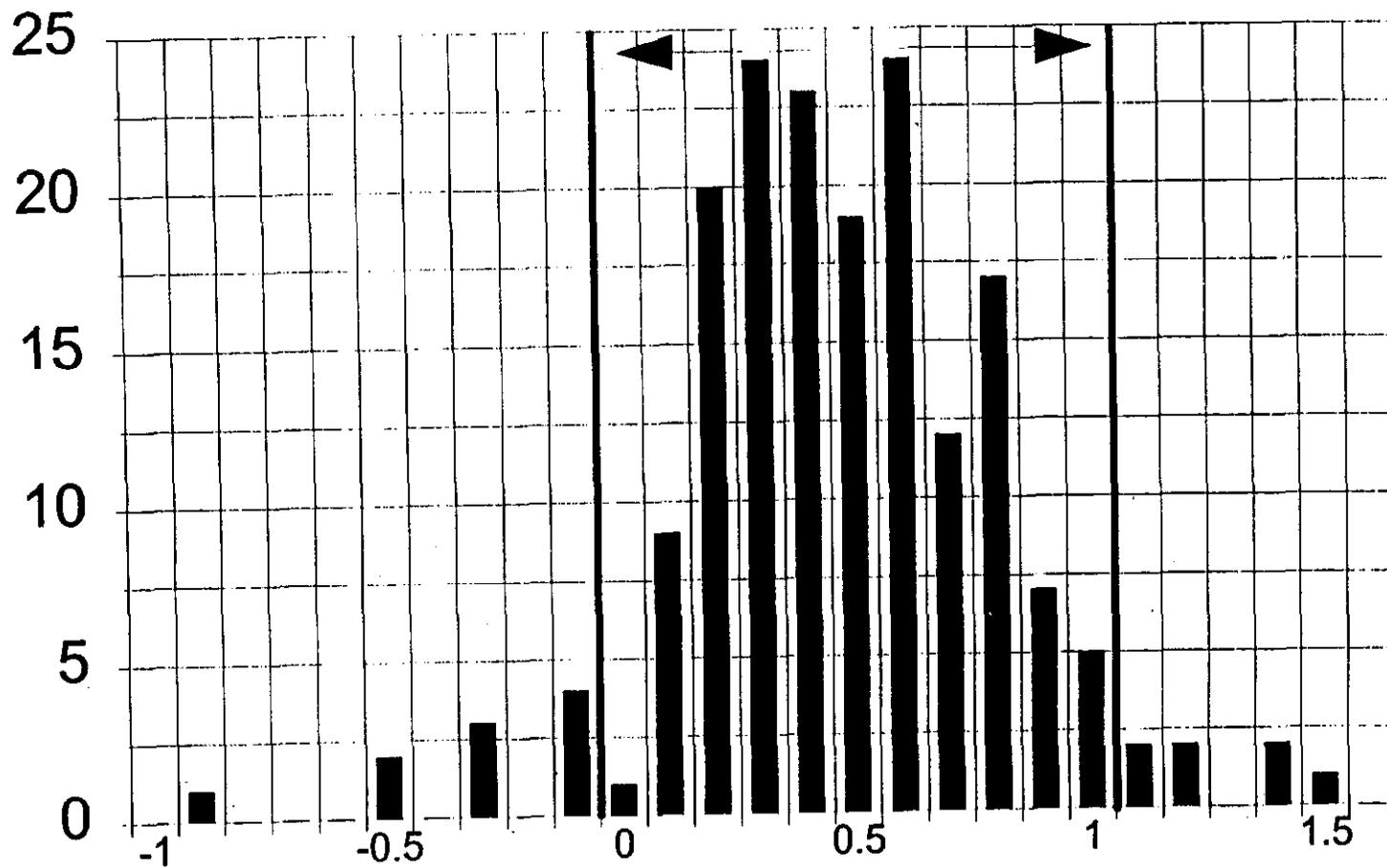
Manual Letter Variabilities

Distribution Across Sites



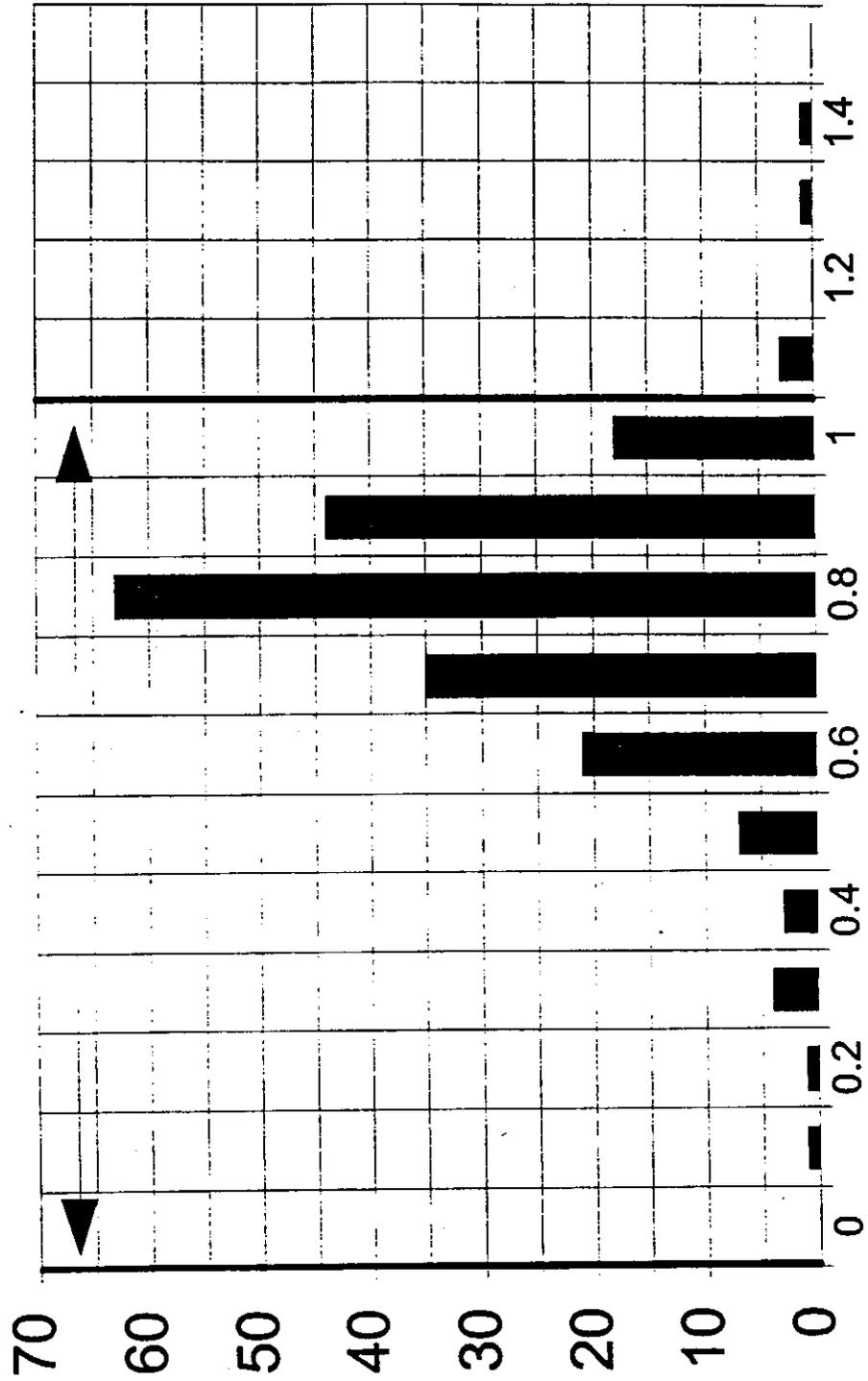
Manual Flat Variabilities

Distribution Across Sites



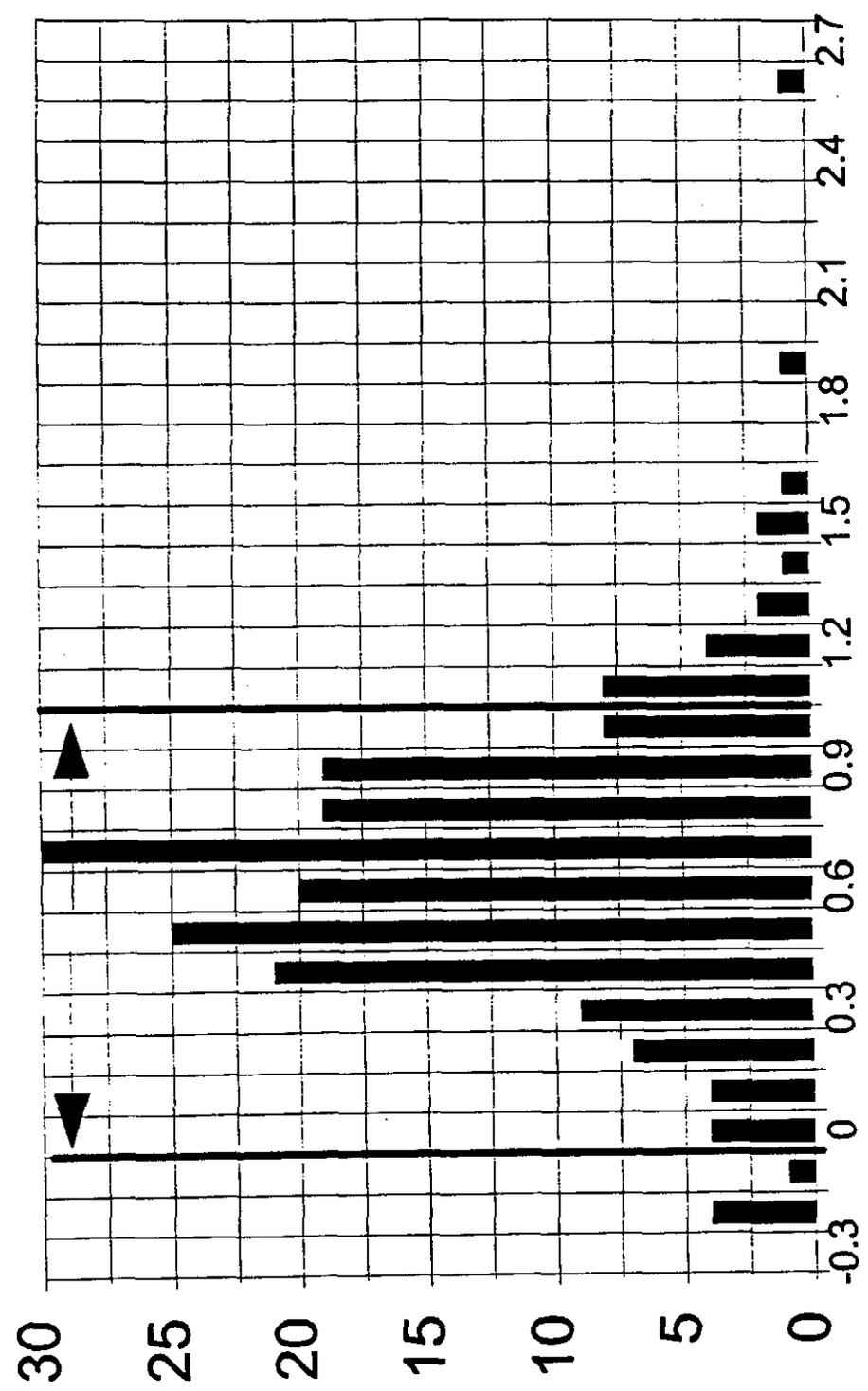
LSM Variabilities

Distribution Across Sites



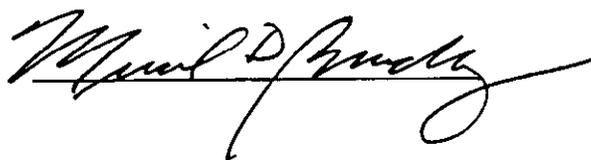
OCR Variabilities

Distribution Across Sites



DECLARATION

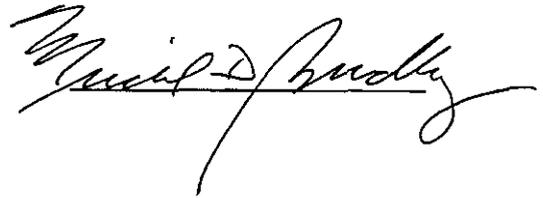
I, Michael D. Bradley, declare under penalty of perjury that the foregoing statement is true and correct, to the best of my knowledge, information, and belief.

A handwritten signature in cursive script, reading "Michael D. Bradley". The signature is written in black ink and is positioned to the right of the declaration text.

Dated: Feb 6, 1998

DECLARATION

I, Michael D. Bradley, declare under penalty of perjury that the foregoing written testimony is true and correct to the best of my knowledge, information and belief, and that were I to testify orally, my testimony would be the same.

A handwritten signature in black ink, appearing to read "Michael D. Bradley". The signature is written in a cursive style with a long, sweeping underline that extends to the right.

Dated: 2/27/98

1 CHAIRMAN GLEIMAN: And there's some written
2 cross-examination which was filed with declarations. If you
3 could also make those copies available to the reporter.

4 MR. McKEEVER: Mr. Chairman, I do have copies of
5 them here.

6 CHAIRMAN GLEIMAN: All right.

7 MR. McKEEVER: I can identify them.

8 CHAIRMAN GLEIMAN: If you would.

9 MR. McKEEVER: The Interrogatories that we wish to
10 have admitted into evidence as written cross-examination of
11 Dr. Bradley are Dr. Bradley's responses to Interrogatories
12 UPS/USPS-T14-62 and 63. I have copies of the declarations
13 that were filed with the original answers attached to each
14 set, and we could either use those. If that is acceptable
15 to Mr. Koetting.

16 MR. KOETTING: Actually, I have them.

17 CHAIRMAN GLEIMAN: Mr. Koetting seems to have
18 originals.

19 MR. KOETTING: I do indeed, Mr. Chairman.

20 MR. McKEEVER: Well, then I will --

21 CHAIRMAN GLEIMAN: You have been trumped.

22 MR. McKEEVER: Then I will remove the copy that I
23 have and substitute the original.

24 CHAIRMAN GLEIMAN: And we will get the two copies
25 into the reporter's hand with the original declarations, and

1 that involves the designated written cross-examination for
2 Witness Bradley.

3 MR. RICHARDSON: Mr. Chairman.

4 CHAIRMAN GLEIMAN: Yes.

5 MR. RICHARDSON: OCA also has some designated
6 written cross-examination for Witness Bradley.

7 CHAIRMAN GLEIMAN: Okay. If you would add yours,
8 if you could tell us which Interrogatory responses those
9 are.

10 MR. RICHARDSON: Yes, it is. It was a response
11 filed today to OCA/USPS-ST-55-1, and it is just one
12 Interrogatory, which I have two copies that I can give to
13 the reporter.

14 CHAIRMAN GLEIMAN: All right. If I could prevail
15 on you gentlemen to put those materials together and give
16 them to the reporter. And I assume that there is a
17 certificate of authenticity -- a declaration, excuse me,
18 associated with that?

19 MR. KOETTING: I believe the declaration was
20 intended to apply to the entire packet, Mr. Chairman, and I
21 may have been a little trigger happy giving both to Mr.
22 McKeever.

23 CHAIRMAN GLEIMAN: I think at this time of the day
24 on Friday afternoon, we are all a little trigger happy. And
25 in about 30 seconds we are going to be just plain old happy.

1 Mr. McKeever, are you prepared to give those to
2 the reporter at this point?

3 MR. McKEEVER: I am, Mr. Chairman, and I move that
4 all three Interrogatory responses of Dr. Bradley be admitted
5 into evidence and transcribed into the record.

6 CHAIRMAN GLEIMAN: It is so ordered.

7 [Designation of Written
8 Cross-Examination of Michael D.
9 Bradley, USPS-ST-55, was received
10 into evidence and transcribed into
11 the record.]
12
13
14
15
16
17
18
19
20
21
22
23
24
25

Response of United States Postal Service Witness Bradley
to
Interrogatories of OCA

OCA/USPS-ST55-1. In reviewing your conclusions on page 10, lines 11-17, of your statement filed on February 6, 1998 (styled above as supplemental testimony, ST55) you concluded that the 27 different regression coefficients are not identical across sites and indicate that this is not surprising. Please confirm that you did not test for the equality of the regression coefficients of the TPH variable alone, disregarding the equality or inequality of any other variable coefficients. If you do not confirm, please explain.

OCA/USPS-ST55-1 Response:

Confirmed.

Response of United States Postal Service Witness Bradley
to
Interrogatories of UPS

UPS/USPS-T14-62. Please confirm that the results you present on page 9 of your response to Notice of Inquiry No. 4 indicate that the data do not support the hypotheses that the slope parameters (or volume variability) are equal across all sites (for the activities tested.)

UPS/USPS-T14-62 Response.

Not confirmed. The strict results of the statistical test indicate rejection of the null hypothesis of identical regression coefficients (slope or otherwise) at all of the individual sites. This result does not imply, nor is it a test of, the equality of the variabilities at all of the individual sites. Moreover, I would be cautious in asserting that the data, broadly speaking, do not support the restriction. It may be, for example, that the restriction would hold for many of the sites. In addition, the relative similarity between the variability calculated when the restriction is imposed with the variability calculated when the restriction is not imposed represents support for the restriction in the data.

Response of United States Postal Service Witness Bradley
to
Interrogatories of UPS

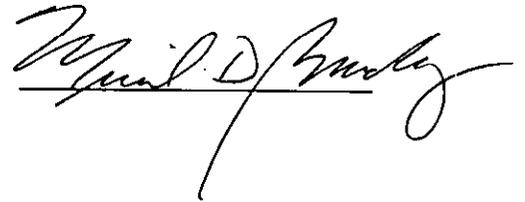
UPS/USPS-T14-63. Please confirm that in USPS-T-14 (and reiterated on page 2 lines 12 through 14 and page 13 lines 20 through 23 of your response to Notice of Inquiry No. 4) the estimated volume variabilities are derived from a model that imposes the restriction that the slope parameters are equal across all sites.

UPS/USPS-T14-63 Response:

Confirmed.

DECLARATION

I, Michael D. Bradley, declare under penalty of perjury that the foregoing written interrogatory responses are true and correct to the best of my knowledge, information and belief, and that were I to testify orally, my responses would be the same.

A handwritten signature in cursive script, reading "Michael D. Bradley", written over a horizontal line.

Dated: 2/27/98

1 CHAIRMAN GLEIMAN: And with that, I think we are
2 finished for the day. Unless somebody can find a way to get
3 Witness Higgins' material in.

4 MR. KOETTING: Well, I don't have Mr. Higgins'
5 material, but would it be appropriate for me to call his
6 attorney and advise him that Mr. Higgins does not need to
7 appear on Monday. The last time we spoke, I thought he was
8 anticipating that there might be questions from the bench.

9 CHAIRMAN GLEIMAN: You can do that. That would be
10 fine. Also, I will ask our counsel to contact him. Perhaps
11 between the two of you, you will get in touch with him.

12 Anybody else that wants to contact MPA counsel is
13 welcome to do so.

14 We don't have anything further today and we will
15 receive whatever testimony is left to receive on Monday, and
16 that is Witnesses Baron and Crowder, and I bid you all
17 adieu. Have a nice weekend.

18 [Whereupon, at 4:46 p.m., the hearing was
19 recessed, to reconvene at 9:30 a.m., Monday, March 2, 1998.]

20
21
22
23
24
25