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Before the

UNITED STATES POSTAL RATE COMMISSION

In the Matter of: POSTAL RATE AND FEE CHANGE

Docket No. R2000-1

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BEFORE THE
POSTAL RATE COMMISSION

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

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

Volume XXXII
Thursday, July 20, 2000

The above-entitled matter came on for hearing, pursuant to notice, at 9:35 a.m.

BEFORE:
HON. EDWARD J.GLEIMAN, CHAIRMAN
HON. GEORGE A. OMAS, VICE CHAIRMAN
HON. W.H. "TREY" LeBLANC, COMMISSIONER
HON. DANA B. "DANNY" COVINGTON, COMMISSIONER
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C O N T E N T S

E X H I B I T S

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EXHIBITS AND/OR TESTIMONY	IDENTIFIED	RECEIVED
Written Direct Testimony of Joseph E. Shick, PostCom et al-T-2	15700	15700
Written Direct Testimony of Sander A. Glick, PostCom et al-T-1	15711	15711
Designated Written Cross Examination of Sander A. Glick	15736	15736
Direct Testimony of John Haldi, VP-CW-T-1	15750	15750
Designated Written Cross-Examination of John Haldi	15858	15858
Direct Testimony of Dr. Kevin Neels, UPS-T-3	15991	15991
Designated Written Cross Examination of Dr. Kevin Neels	16057	16057
Declaration of Donald M. Baron	16137	16137
Direct Testimony of Antoinette Crowder, MPA-T-5	16142	16142
MPA-LR-6 and MPA-LR-7		16207
Designated Written Cross Examination of Antoinette Crowder	16207	16207

PROCEEDINGS

[9:35 a.m.]

CHAIRMAN GLEIMAN: Good morning ladies and gentlemen. Inasmuch as we do not have a quorum requirement to take testimony at the Rate Commission, we'll continue our hearings to receive direct cases of participants other than the Postal Service in Docket R2000-1.

I have one procedural matter that I have to deal with this morning. Yesterday the Postal Service filed a motion to disallow written discovery on updated testimony and related materials.

The Postal Service contends that written discovery on these materials will be burdensome in the context of the amended schedule, and that no written discovery should be permitted.

I'm denying that motion. Let me explain that I'm denying the Postal Service's request for a blanket prohibition on written discovery related to testimony and supporting documentation filed in response to Order 1294.

The Postal Service may still interpose objections to specific written discovery requests that are inappropriate for any of the standard reasons or grounds, including the ground that specific discovery requests may be unduly burdensome.

Presiding Officer's Ruling Number 71 revised the

procedural schedule in light of Order 1294. It retained the final date for submission of discovery directed to the Postal Service.

Discovery was permitted through July the 31st for the purpose of allowing participants to obtain information from the Postal Service to enable preparation of rebuttal testimony.

Order Number 1294 contemplated that parties, including the Postal Service, would be permitted to submit testimony incorporating the updates called for in that order as part of their rebuttal testimony to be filed on August 14th.

Therefore, discovery on testimony and related materials submitted by the Postal Service was obviously contemplated by the order (Order 1294).

Furthermore, focused written discovery will help the participants and the Commission develop a cogent and complete record for the evaluation of the Postal Service's rate proposals.

The Postal Service suggests that responding to written discovery may impede its preparation for the remaining phase of the case. Again, I'll consider specific objections that particular discovery requests would impose an unreasonable burden on the Service.

However, in the past it has always been viewed as

helpful to have parties identify particular areas of interest through written questions submitted prior to technical conferences.

The written discovery requests should be of assistance to the Postal Service in preparing for technical conferences to be held next week.

I have been able to comment favorably several times during this case on the willingness of counsel to work together cooperatively to resolve potential procedural problems.

The Postal Service complains about the scope of Time Warner Interrogatory Number 3. That's TW/USPS-ST-44-3. Perhaps counsel could discuss whether the scope of that question might be narrowed, or whether the availability of particular data at the technical conference might be satisfactory for some purposes.

The Postal Service also suggests that Interrogatory OCA/USPS-ST-44-1 is inappropriate, yet it then proceeded to indicate that it already submitted the requested information for the record.

Under that circumstance, it would seem that the Postal Service could simply provide an answer identifying the relevant Library Reference or other places in the record where the information has been supplied.

To assure that parties are not confused about the

status of the Postal Service motion and my ramblings about it this morning, we'll issue a separate Presiding Officer's Ruling incorporating my comments this morning, and hopefully we will get that out by the end of the day today.

Does any participant have a matter that they'd like to address today?

Mr. Feldman?

MR. FELDMAN: Mr. Chairman, thank you. On July 14th, I introduced into the record, the written testimony of Victor Navasky on behalf of The Nation.

At that time, we were unable to have at that time a written declaration by Mr. Navasky, affirming his testimony. Of course, he was not required that day to testify, given the lack of cross examination.

I do have two copies, including an original of Mr. Navasky's declaration, and I would ask that we be allowed to put it into the record at this time.

CHAIRMAN GLEIMAN: Most certainly. If you would provide those two copies to the Court Reporter, I'll direct that that material be transcribed into the record.

[Declaration of Victor Navasky for NA-T-1 was received into evidence and transcribed into the record.]

The Nation.
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VICTOR NAVASKY
PUBLISHER AND EDITORIAL DIRECTOR

I, Victor Navasky, hereby affirm that the foregoing testimony, entitled The Direct Testimony of Victor Navasky, is true to the best of my knowledge and belief.

July 18, 2000

Victor Navasky

MR. FELDMAN: Thank you.

CHAIRMAN GLEIMAN: Anyone else?

[No response.]

CHAIRMAN GLEIMAN: If not, we'll mention that there are six witnesses scheduled to appear today: Merriman, Shick, Glick, Haldi, Neels, and Crowder.

Mr. McLaughlin -- oh, Mr. Burzio is here.

MR. BURZIO: There is a substitute. The second team is here today.

CHAIRMAN GLEIMAN: Well, some of us have wondered over the years if Mr. McLaughlin's first name was actually Burzio, but we did find out at some point that it was Tom.

[Laughter.]

CHAIRMAN GLEIMAN: So, welcome, Mr. Burzio. Is Witness Merriman here today, or do you intend to enter this testimony by motion?

MR. BURZIO: Mr. Merriman is here, and Saturation Mail Coalition calls him as a witness.

CHAIRMAN GLEIMAN: Counsel, you may begin when you and your witness are ready.

Whereupon,

ROGER MERRIMAN,

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

DIRECT EXAMINATION

BY MR. BURZIO:

Q Please state your name for the record.

A My name is Roger Merriman.

Q And where are you from?

A I'm from Pierre, South Dakota.

Q What is your occupation?

A I am President of Merriman Printing and Publishing, Inc.

Q Do you have with you at the stand, a copy of a document entitled Direct Testimony of Roger Merriman on Behalf of the Saturation Mail Coalition, which has been marked for identification as SMC-T-2?

A I do.

Q Was that document prepared by you or under your supervision and direction?

A Yes, it was.

Q Do you have any corrections or additions to that document?

A I noticed when I reviewed it that a map that I had submitted had been left out. I believe that when you showed it to me now, that an erratum has been submitted which included the map.

Q All right, with -- are there any other corrections or additions to your testimony?

A No, there isn't.

Q Is this the testimony that you wish to adopt in this proceeding?

A I do.

MR. BURZIO: Mr. Chairman, I will hand two copies of the document marked SMC-T-2 to the Reporter, and move its admission into evidence and its transcription into the record.

CHAIRMAN GLEIMAN: Is there any objection?

[No response.]

CHAIRMAN GLEIMAN: Hearing none, it's so ordered; the materials will be accepted into evidence and transcribed into the record.

[Written Direct Testimony of Roger Merriman, SMC-T-2, was received into evidence and transcribed into the record.]

SMC-T-2

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, D. C.

POSTAL RATE AND FEE CHANGES, 1997	:	Docket No. R2000-1

DIRECT TESTIMONY OF

ROGER MERRIMAN

ON BEHALF OF THE

SATURATION MAIL COALITION

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May 22, 2000

TABLE OF CONTENTS

DIRECT TESTIMONY OF ROGER MERRIMAN

INTRODUCTION AND BACKGROUND

My name is Roger Merriman and together with my wife, Helen, and son, Curt, I have owned and operated Merriman Printing and Publishing, Inc., the publisher of the *Farmer and Rancher Exchange* since 1977.

Beginning with a circulation of 12,000 in 1981, the *Farmer and Rancher Exchange* has grown to 42,000 households in South Dakota, Nebraska, Wyoming, North Dakota, and Montana.

The *Farmer and Rancher Exchange* is the largest weekly advertising publication distributed free in the upper midwest region. We are primarily an agricultural publication and are regarded as the buy and sell bible for farm families and agricultural businesses in a five state area. Most of our circulation is distributed by saturation mail. However, due to the popularity of our publication and in response to requests, we also mail by standard and first class mail to readers outside our circulation area including the States of Minnesota, Iowa, and Colorado.

Our circulation coverage is exclusively rural and midwestern small towns. We exclude from our circulation the big metropolitan areas of South Dakota, like Sioux Falls and Rapid City, where consumers may not be tied into the agrarian economy and advertisers have a range of media choices to reach their customers.

Because of our large rural geographic footprint, we and other rural saturation mailers are different from other metropolitan-area free papers, shoppers, and newspapers in that we truly are a captive customer of the USPS. There are multiple newspapers and shoppers in the metropolitan areas we do not serve that can cost-effectively use their own private carriers. For our publication and approximately 2,500 regular advertisers who rely on us to reach agrarian households and businesses in our market area, the USPS is the only game in

town. I have attached to my testimony a map of our circulation area to give a picture of the broad geographic territory we reach. To put this in further perspective for Washington, DC-based Commission members and staff, let me note that a typical DC suburb has a higher population than our entire circulation area covering 270,000 square miles.

My family has a farming background and has been involved in operating a family farm for five generations. I belong to, and participate in, several trade and business associations relating to the publishing and shopper industry, local business and mail advertising, including the Independent Free Papers of America, the Midwest Free Papers Association, the Alliance of Independent Store Owners and Professionals, and the Saturation Mail Coalition. We also belong and actively participate in the local business chambers operated by the Cities of Pierre, Rapid City, Winner, Chamberlain, Belle Fouche, and Mitchell.

My family also has had a longstanding relationship with the USPS. For 70 years, and four generations, a member of our family has operated a star route for rural delivery.

PURPOSE OF TESTIMONY

I am testifying on behalf of the Saturation Mail Coalition, a group that includes numerous free paper publishers like me, because affordable rates for saturation mail advertising are absolutely essential to the survival of my business. I wholeheartedly endorse the USPS's recommendation to modestly reduce the pound rate charged for ECR mail over the break point. My testimony aims to:

1. Describe the importance of a mailed free paper to a rural community.
2. Explain why my paper, and the advertisers and consumers I serve, would benefit by the USPS's proposal to lower the pound rate. The USPS would also benefit by more sensible pricing that would help it increase its pound rate revenues.

THE IMPORTANCE OF A MAILED FREE PAPER
IN A RURAL COMMUNITY

For the agrarian households that receive our paper, the *Farmer and Rancher Exchange* is the "buy-sell bible." Although we promote our publication as 100% advertising, to our readers it is essential business information to help them productively run their businesses and their lives.

The rural nature and consumer value of our publication is not unique within the saturation mail industry. There are many other saturation mailers that serve rural areas in the south, the midwest, and throughout the nation. All saturation mail programs provide valuable consumer information. However, I believe that this value is especially important in rural markets, because of the geography and demographics of rural areas. We do not serve affluent suburbs that have a vast array of nearby shopping opportunities. Many of the rural households that we and other saturation mailers serve live on tight budgets, and depend on the consumer values our publications offer to help make ends meet. For these households, shopping is not a spur-of-the-moment daily stop at the neighborhood store, but a well-planned weekly excursion to a distant store where every dollar saved is important.

As the number of family-owned farms has decreased, the market area for our consumers' shopping patterns and advertisers has become increasingly large. You will not find a Ford dealership or a combine service shop in every little town. Auto, equipment, and implement dealers may draw on a market area 400 miles away. Farm machinery and equipment dealers often offer a service radius of 200 to 300 miles. Our advertisers and readers depend on the information we provide. Our paper's run of press (ROP) pages run from 32 to 64 pages.

The ROP pages of the paper include display ads, livestock advertisements, and classifieds that reach our entire circulation. For insert advertisers, we are able

to offer partial coverage that is defined by advertiser needs and postal delivery areas. Our advertisers are able to buy insert coverage by carrier route and can purchase insert distribution for as few as 200 pieces.

I believe our publication performs a valuable service for businesses and consumers in the five state rural area we serve. The *Farmer and Rancher Exchange*, together with the postal carriers, provide an essential information highway, or rural route web if you will, for this vast rural community.

By keeping postal rates for saturation distribution of our paper reasonable and stable over the past five years, the Postal Service and the Postal Rate Commission have helped our advertisers and readers. Our ability to expand circulation, thus allowing our advertisers to reach more households, is a direct result of reasonable distribution costs. How does this translate into value for our advertisers and consumers? Let me illustrate:

Most of our readers cannot run to the mall or the corner store for their shopping needs. Buying groceries, hardware, and other consumer goods can mean a lengthy road trip. Even before fuel prices were on the rise, our readers would study the specials found on the pages of our insert advertisers, like Menards, K-Mart, Country General, Wal-Mart, farmer cooperative stores and grain elevators, grocers, and general stores, in planning a buying trip.

A somewhat sad, but important component of our advertiser mix is the farm auction. Consolidations, estate, and going out of business sales regularly appear on our pages. Eager buyers shopping for the best deal think nothing of driving six to eight hours to attend a good farm auction. For the selling family, our ability to help them reach a large and interested audience brings them the best price possible for a sale that often represents the end of several lifetimes of farm labor.

We call our publication the "buy and sell bible" because buyers and sellers study it for pricing and market information. "What can I charge?" "What should I

pay?" Our paper helps agricultural buyers and sellers be efficient in the marketplace. In the past, we ran livestock and commodity price information at below cost prices as a public service to our advertisers and readers. (This information is like the NASDAQ of livestock and commodity markets.) Increases in postal rates, and the rates we must pay when we exceed the break point, have caused us to increase our charges for these ads. But this is still our lowest advertising rate and barely covers our printing and distribution costs.

Most of our *Farmer and Rancher Exchange* readers may also be advertisers. A rancher who wants to sell 10 bulls can reach potential customers in a five state area through a classified ad that costs only $9.00 for up to 30 words. Without us, the same advertiser would need to be in seven to ten different publications to cover the same geographic area and, in the case of daily or weekly papers based in the major cities, the advertiser would have to pay for reaching households that are not potential buyers.

I know our paper is read and valued by consumers. Recently, our paper participated in an audit conducted by an independent audit company to verify our circulation delivery numbers and readership. The verified audit report concluded that our paper has 86% readership! This number is off the charts for both the free paper industry and subscription papers and periodicals.

IMPACT OF POSTAL RATES

The stable postal rates of the last five years have been beneficial to my business, our advertising customers, readers, and the USPS. These have been the years of the greatest circulation growth in our saturation mail base and growth in our requester circulation for distribution outside our saturation coverage area. This has brought additional revenue to the USPS.

After 20 years in this business, I can tell you what happens to free papers when there are unreasonable increases in postal rates. For papers in metropolitan and suburban areas, alternate delivery for all or part of the circulation is a viable option. In the 1980s, when postal rates for third class mail experienced big hikes, many free papers set up their own delivery force. In my years of attending trade association meetings, I have heard other publishers describe how they would follow the USPS letter carrier to design the best distribution routes. Publishers switching to alternate delivery would "cherry pick" their coverage areas. The first circulation switched from the mail to private carrier is the easy-to-deliver, dense urban areas. For areas that are not cost-effective to deliver, like spread out suburban or rural areas, papers might maintain this circulation with the USPS. Publishers who made the switch to private carrier would boast they were now better able to compete with newspapers for the delivery of insert advertising and that they could often pick up additional pieces and revenue from advertisers that were using the mail.

For rural publishers, switching to private carrier is not a choice. Unreasonable postal rate increases force us to cut back on our saturation circulation, reduce or charge for requester distribution, and do what we can to raise prices. This means our advertisers pay more and get less and households requesting free delivery of our paper must be refused. At best, we switch more of our circulation to racks located in stores or public buildings. It is a poor substitute, but it is what rural free papers must do in the face of unreasonable increases in postal costs.

Speaking from my own experience over the past 20 years, I can tell you how we responded to postal rate increases. In the 1980s when postal rates for third class mail increased steeply on two separate occasions, we were forced to steeply increase our advertising prices. Our circulation growth was stagnant. In response to one postal rate increase, we cut back on saturation distribution.

In 1995 when postal rates went up for us by approximately 14%, we had to change our policy on requester circulation. Prior to 1995, we would mail our paper for free to persons outside our circulation area. We now charge a subscription rate fee to readers outside our saturation mailing areas.

I ask that the Postal Rate Commission recommend rates for saturation flats that are no higher than the USPS proposed rates and I greatly urge the Postal Rate Commission to approve the requested reduction in the pound rate.

BENEFITS OF A LOWER, MORE REASONABLE POUND RATE

I believe a modest decrease in the pound rate for ECR saturation mail would benefit mailers, our advertising customers and consumers, and the USPS.

I would estimate that all but six issues a year of our paper are at the pound rate. We have many insert advertisers including major chains and smaller regional or local stores that want to be distributed in our publication. With the high pound rate, papers that are routinely into the pound rate in urban areas may have to "celebrate" their success by switching all or part of their distribution from postal distribution to private carrier. As discussed above, our geographic market does not give us that choice. Although the USPS has kept our business, it has lost the business of other heavier shoppers and remains at risk that successful mailed free papers may become private carrier competitors as their paper size grows. Although we have remained with the USPS, the existing high pound rate has a detrimental impact on our advertisers and consumers.

We are the only weekly shared mail option for insert advertisers to reach farm and ranch households in parts of a five state area. However, these major advertisers are very sensitive to the weight-related prices we must charge. Our plant is constantly getting calls by advertisers wanting to change format, circulation coverage, reducing page count and size, and other inquiries all aimed at allowing

them to reduce the weight-related/distribution costs of inserting their ad into our paper. These same advertisers are also doing inserts into private carrier free papers or newspapers that have circulation in metropolitan areas, like Rapid City or Sioux Falls, that we do not cover. These advertisers do not have to pay such finely tuned weight-related advertising costs to distribute their inserts with nonpostal distributors. Some of our advertisers do not understand the difference between mail distribution and private carriers. We receive frequent complaints from advertisers asking why our insert rates are so much higher than the rates charged by newspapers or free papers that use their own carriers. I have to explain the weight-based postal rates I pay the Postal Service. The great differences in pricing between private carrier newspapers and free papers and shared mailers creates more work and headaches for our advertisers and our paper.

As a result of this, many of our advertisers do a different version of an insert ad for our mailed paper, that is shorter and lighter than they would do that same week, for circulation in papers delivered by private carriers in metropolitan areas. The high pound rate results in rural readers getting smaller and lighter flyers than their cousins in the cities, that provide less shopping information so vital to consumers in our rural market area. In addition to our readers getting less advertising information than the consumers in the city and suburban areas, this also puts us at a competitive disadvantage.

From a market standpoint, the USPS's charges for heavier pieces are out of kilter with the charges of private carrier companies, newspapers, and shoppers that use alternate distribution. I cannot speak to the USPS's internal costs for heavier pieces of mail. But I can tell you what my fellow publishers do officially, or in practice, when it comes to how they compensate their carriers and how they set prices with their big advertising customers. From a cost standpoint, many of my fellow publishers pay private carriers to do both the inserting and delivery of their

free paper. It is not uncommon for carriers to be paid one cent or less to both insert the piece and deliver it. The same penny is commonly paid regardless of the size or weight of the piece for anything from a single sheet up to 16 or even 32 pages. Papers that distribute by private carrier do not need to concern themselves with paper stock, cut and size of the paper, or other issues about the insert that impact weight.

Private carrier newspapers and free papers are also free to set their advertising prices with little or no regard to weight. Although most prices are individually negotiated with the advertisers, with appropriate discounts for frequency and volume, my fellow publishers with private carriers usually set their prices (both on the rate card and individually negotiated "off the rate card" prices) based on the number of pages without regard to weight. For example, some private carrier shoppers that distribute in Iowa might charge $40 per 1,000 for eight pages and $50 per 1,000 for twenty-four pages. These are the rate card rates. An advertiser committing to high volume coverage and frequency could certainly negotiate for lower prices. Free papers that distribute by private carrier have price setting freedom that mailers do not enjoy. They do not face a last minute shuffle, as publishers do who distribute by mail, when the advertiser chooses a paper stock that is a little too heavy and is suddenly surprised to find its postal distribution costs are much higher than the inserting rates it is paying a shopper with a private carrier force or a newspaper.

Even under the USPS's proposed new pound rate, there will still be significant disparities in costs between what private carriers pay for delivery, the weight-insensitive rates they charge to advertisers, and the rates mailed publications will pay. But the modest reduction proposed by the USPS will help our advertisers.

A reduction in the pound rate will also be beneficial to consumers and the communities we serve. One of the problems with the present pound rate is that it makes every free paper publisher think twice before printing pages that take you from under the break point to over the break point. We can and must charge our insert advertisers for the costs associated with their pieces that require us to pay more postage. But when the weight costs are related to the pages in our paper, it always comes out of our pocket. The consequence of this dilemma is that publishers at or near the break point think twice about giving away "free" advertising space to charities, community events, and other local and social causes.

This has been the case for our publication. In the past, we printed commodity and livestock pricing information at greatly reduced prices. This was information of great value and interest to our readership. We now charge advertisers the lowest rates we can afford to print this information but it still costs them more. As a result of these charges, consumers get less information, and get it less often.

We are constantly approached by local charities, fund raisers, and community event sponsors for free promotional space in our paper. The rates I must pay for our paper when it is overweight have caused me to cut back on the amount of free space I give these events. We still run a number of such spots, particularly when they are unique to our community. For example, farming and ranching can be a dangerous business. Every year, we have helped with fund raisers for injured farmers to raise funds for their medical expenses and families. I would resume doing more for community events and charities if the pound rate for heavier pieces was reduced.

Speaking for other publishers in the industry that use the mail, I can attest that my experience is not unique. In addition to community events and charities, many other free paper publishers give away reader ads where consumers can run

up to something like 15 words for free to sell household items, place a pet for adoption, and other non-commercial purposes. Consumers love these "reader ads" and it helps a paper build its readership and extend its shelf life. But, needless to say, this free space is the first to be cut or reduced as a free paper gets big enough to start paying pound rate postage.

CONCLUSION

Years ago, farm and ranch families were able to buy food and services locally. There no longer is a Main Street or "town" for the areas we serve. Most towns on our map have little more than a bar, a post office, and a few signs memorializing the public buildings that used to be there. Our readers need to look far and wide to find out about household and business goods and services. We provide essential information to shorten the search. I know what our paper means to our readers. In the years our family has handled delivery for a USPS star route, we have seen people standing by their mailbox waiting to get our paper. Our paper helps farm and ranch families, and the businesses in our community, exchange essential information. The modest reduction proposed in the rates we must pay for heavier pieces would help us get more information in the hands of our readers.

In order for publications like ours to continue to serve vast rural areas, postal rates must remain fair and competitive. The farmer and ranch families in the rural areas we serve want and need to receive the service we provide. The present high pound rate makes our task of linking advertisers and farm families together more difficult. I urge the Postal Rate Commission to approve a reduction in the current pound rate proposed by the USPS and to recommend rates for saturation flats that are no higher than the USPS proposed rate.

CERTIFICATE OF SERVICE

I hereby certify that I have on this date served the foregoing document upon all participants of record in this proceeding in accordance with section 12 of the Rules of Practice.

Thomas W. McLaughlin

May 22, 2000

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, D. C.

POSTAL RATE AND FEE CHANGES, 1997	:	Docket No. R2000-1

NOTICE OF FILING OF MISSING ATTACHMENT TO TESTIMONY OF SATURATION MAIL COALITION WITNESS MERRIMAN (SMC-T-2) – ERRATA

The Saturation Mail Coalition (SMC) hereby gives notice of the filing of Attachment A to the testimony of SMC witness Merriman, SMC-T-2. This attachment, consisting of a map showing the service area of Mr. Merriman's company, as referenced in his testimony, was inadvertently omitted in the filed version of his testimony.

Respectfully submitted,

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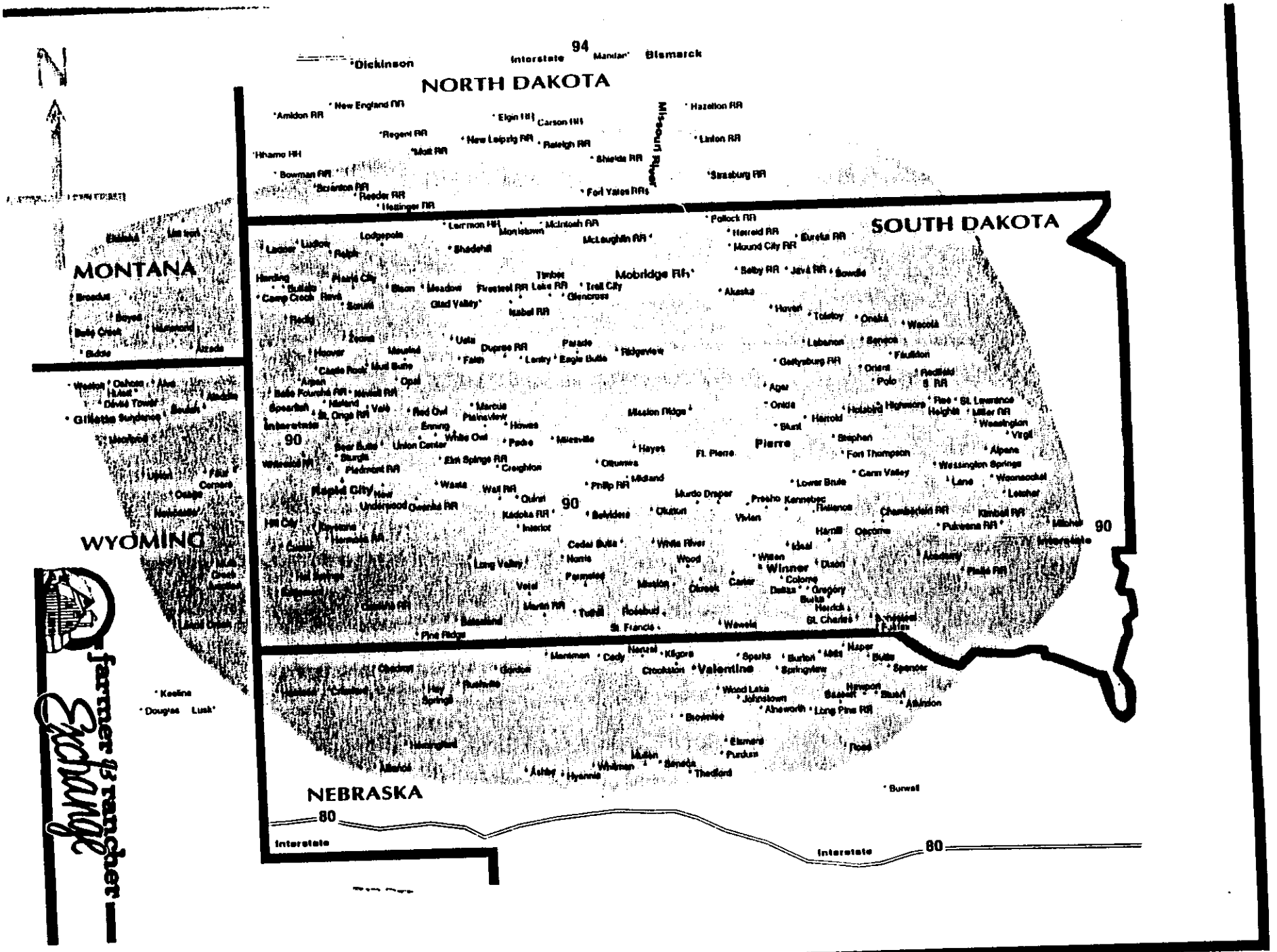
Counsel for the
SATURATION MAIL COALITION

CERTIFICATE OF SERVICE

I hereby certify that I have this date served the foregoing document upon all parties of record in accordance with sections 12 and 20(c) of the rules of practice.

Thomas W. McLaughlin

May 24, 2000


NORTH DAKOTA
SOUTH DAKOTA
MONTANA
WYOMING
NEBRASKA
Dickinson
Interstate 94
Bismarck
Missouri River
Mobridge RR
Pierre
Fl. Pierre
Mission Ridge
Winner
Valentine
Interstate 90
Interstate 80
Farmer & rancher Exchange

15671

CHAIRMAN GLEIMAN: Mr. Merriman, have you had an opportunity to examine the packet of Designated Written Cross Examination that was made available earlier this morning?

THE WITNESS: Yes, sir.

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

THE WITNESS: Absolutely.

CHAIRMAN GLEIMAN: That being the case, counsel, if I could get your assistance to provide two copies of the Designated Written Cross Examination of this witness to the Court Reporter, I'll direct that the material be received into evidence and transcribed into the record.

[Designated Written Cross Examination of Roger Merriman was received into evidence and transcribed into the record.]

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, DC 20268-0001

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

DESIGNATION OF WRITTEN CROSS-EXAMINATION
OF SATURATION MAILERS COALITION, THE
WITNESS ROGER MERRIMAN
(SMC-T-2)

Party	Interrogatories
Newspaper Association of America	AAPS/SMC-T2-1-4, 10 NAA/SMC-T2-3-5, 7-10
United States Postal Service	AAPS/SMC-T2-1-9 NAA/SMC-T2-2-6, 8-10

Respectfully submitted,

Margaret P. Crenshaw

Margaret P. Crenshaw
Secretary

INTERROGATORY RESPONSES OF
SATURATION MAILERS COALITION, THE
WITNESS ROGER MERRIMAN (T-2)
DESIGNATED AS WRITTEN CROSS-EXAMINATION

Interrogatory	Designating Parties
AAPS/SMC-T2-1	NAA, USPS
AAPS/SMC-T2-2	NAA, USPS
AAPS/SMC-T2-3	NAA, USPS
AAPS/SMC-T2-4	NAA, USPS
AAPS/SMC-T2-5	USPS
AAPS/SMC-T2-6	USPS
AAPS/SMC-T2-7	USPS
AAPS/SMC-T2-8	USPS
AAPS/SMC-T2-9	USPS
AAPS/SMC-T2-10	NAA
NAA/SMC-T2-2	USPS
NAA/SMC-T2-3	NAA, USPS
NAA/SMC-T2-4	NAA, USPS
NAA/SMC-T2-5	NAA, USPS
NAA/SMC-T2-6	USPS
NAA/SMC-T2-7	NAA
NAA/SMC-T2-8	NAA, USPS
NAA/SMC-T2-9	NAA, USPS
NAA/SMC-T2-10	NAA, USPS

RESPONSES OF SMC WITNESS MERRIMAN TO AAPS INTERROGATORIES

AAPS/SMC-T2-1. At page 2, lines 24-26, you state the "more sensible pricing" would help the Postal Service increase its pound rate revenues.

a. By "more sensible," do you mean that the pound rate should be lower?

b. If the pound rate were reduced, would the pound rate revenues from your publication be increased? Explain.

RESPONSE:

a. Yes.

b. Yes, I am confident that they would. As I explained in my testimony, we have a number of advertisers that "lighten up" their mailed inserts because of the high pound rate. With a lower pound rate, I expect they would add pages to their inserts to display more products and provide more consumer information, similar to the larger inserts used in more populated areas served by daily newspapers. In addition, I believe that we would generate some new advertisers or encourage existing advertisers to increase their frequency of distribution.

RESPONSES OF SMC WITNESS MERRIMAN TO AAPS INTERROGATORIES

AAPS/SMC-T2-2. At page 4, lines 8-10, and at page 5, lines 20-24, you praise the "stable" postal rates paid by your publication over the past five years and state that the stable rates have resulted in your greatest circulation growth and additional revenues to the Postal Service. Would these benefits be diminished if rates were to remain stable over the next three years? Explain any negative answer.

RESPONSE:

No, however, I believe a more reasonable pound rate would further enhance these benefits.

RESPONSES OF SMC WITNESS MERRIMAN TO AAPS INTERROGATORIES

AAPS/SMC-T2-3. Why, as you testify at page 8, line 6, is switching to a private carrier not an option for rural publishers? Would the cost be higher if they switched?

RESPONSE:

Switching to private carrier in whole or in part is an option for some rural publishers. Of course, the further apart homes are the higher our costs. In my own experience, I formerly had approximately 120 carriers working for me to deliver our paper in the more concentrated population areas of our circulation. I could still save costs by maintaining a carrier force in these limited areas, but postal rates are now reasonable enough for me to pay the higher costs. For most of our circulation area, where homes are very spread out, it would not be cost-effective for us to use a private carrier force. Although I have personal experience with operating private carriers, I do not hold myself out as an expert on this subject. I can quote Joe Green, who was a witness for your association in the last postal rate case, on the "rule of thumb" he gave at a meeting I attended of free paper publishers. He told publishers that were thinking of switching all or part of their mail distribution to private carrier that, in general, private carrier would not be cost-effective for routes where there are four homes or fewer per mile. The most optimum routes for private carrier were 28 homes per mile. The exception he described to this "rule of thumb" was for heavier papers where postage costs would be so high that having a thinly populated rural carrier force could still be worthwhile. This is what I explain in page 6 of my testimony where I describe how publishers "cherry pick" their coverage area. They use the USPS for the higher cost, less dense areas, and establish their own carriers for the easy to deliver, densely populated areas. Certainly, there are some portions of the geographic area we cover that are so thinly populated that it would not be cost-effective for us to serve them by private carrier.

RESPONSES OF SMC WITNESS MERRIMAN TO AAPS INTERROGATORIES

AAPS/SMC-T2-4. (a) If the ECR rates proposed by the Postal Service were implemented, by how much would you reduce the rate charged to your insert mailers? (b) If the ECR rates proposed by the Postal Service were implemented, by how much would you reduce the rate charged to your classified advertisers?

RESPONSE:

(a) Because our insert customers are weight and price sensitive, we would adjust our prices to reflect the changes in the basic piece pound rates we pay. I cannot tell you what our rates would be or how much we would reduce our rates.

(b) Because our basic piece rate would increase by over 5%, and our classified advertising rates are already a fraction of the cost charged by our competitors (see my answer to NAA/SMC-T2-1 where I demonstrate that our rates for classifieds are 6% of the cost to buy a classified ad in the shared mail option offered by a joint purchase in the community papers covering our area), I doubt we would reduce the rate we charge our classified advertisers.

RESPONSES OF SMC WITNESS MERRIMAN TO AAPS INTERROGATORIES

AAPS/SMC-T2-5. You refer at page 7, line 23, to the "weight-related prices" you charge to your major insert advertisers. Please provide a rate schedule showing those prices or, if such a schedule is not available, describe the rates applicable to inserts.

RESPONSE:

See my answer to NAA/SMC-T2-8.

We do not have a rate schedule. We do individual quotes for advertisers wanting to send inserts.

The prices we charge are determined based on the pound rate we pay for postage, our inserting and handling costs, and a charge to reflect our overhead and profit. This latter mark up would be adjusted depending on the volume and frequency commitments the advertiser is willing to make and competitive conditions. Our starting point, however, for determining our price would always be the pound rate we must pay the USPS for postage.

RESPONSES OF SMC WITNESS MERRIMAN TO AAPS INTERROGATORIES

AAPS/SMC-T2-6. If as you state at page 8, lines 6-12, the prices that must be charged by free papers that use the mail must be so much higher than the rates charged by free papers that are delivered outside the mail, why are there free papers in urban areas (such as the Miami Flyer described by AISOP witness Baro) in the mail?

RESPONSE:

I cannot speak for the individual decisions made by all mailed free papers in urban areas but I can offer some insights based on my experience in operating a carrier force and my observations.

As I discuss in my answer to AAPS/SMC-T2-3, I could save some dollars today by operating my own carrier force in limited areas. I am willing to pay the higher cost for postal distribution to allow me to focus my business on publishing a paper. It is convenient to deal with a single source for distribution that offers reasonably consistent universal delivery. There are many headaches with having to manage a delivery system, not the least of which is having a one day a week labor force, getting calls and complaints from consumers at night when a paper is stuck in a tree or in a snow blower, and worrying about the safety of carriers. Many daily newspapers, and some free paper carrier forces, appear to be subject to exceptions in child labor laws where very young children can deliver papers. Designing routes that keep children off of busy roads and worrying about safety are worries I believe many publishers want to avoid. This has been a particularly sensitive area in South Dakota where a child carrier for the Sioux Falls Argus Leader was murdered while working on a route. In many urban areas, I am certain free papers do not want to be responsible for any employee or subcontractor's safety in particular parts of the city.

RESPONSES OF SMC WITNESS MERRIMAN TO AAPS INTERROGATORIES

AAPS/SMC-T2-7. You state at the bottom of page 8 and the top of page 9 that carriers working for "private carriers" are often paid one cent or less to insert and deliver an advertisement, and that this payment "commonly" applies even up to 32 pages. Please provide all of your support for these claims, including specifically an identification of the "private carriers" that pay one cent or less to their carriers for inserting and delivering 32-page inserts.

RESPONSE:

I have attended meetings of my local and national free paper association where private carrier publishers describe their private distribution costs. Speaking from my own experience when I had private carriers that delivered our paper, with all the inserting done by us at our plant, my fixed price per paper was 6 cents regardless of weight.

I do specifically recall attending a meeting at a free paper conference where publishers who used private carrier talked about the per piece rates they paid independent contractors for delivery of the paper and the task of doing insertion of advertisements and delivery of the paper. I did not write down the names of individual attendees or their papers. There was a consensus among several publishers at this group that they were able to find and hire independent contractors in city areas to pay rates, on average, of 4 cents per paper and rates of one-half cent to one cent per insert. Higher rates were paid for rural routes and different rates for motor carriers. I can remember thinking that I wished I could pay that little for inserts regardless of weight. I do remember that Joe Green, who was a witness for your association in the last rate case, was a speaker at one of these meetings. He stressed that one of the benefits of private carrier delivery for free paper publishers was that publishers would not have to worry about the weight of their inserts and that there were "great margins" for insert delivery. I also recall Ed Marks, a publisher that has owned free papers throughout the country, talking about his experience and how publishers could pay half a cent to carriers to insert a single sheet and one cent for all other pieces.

RESPONSES OF SMC WITNESS MERRIMAN TO AAPS INTERROGATORIES

AAPS/SMC-T2-8. You state at page 10, lines 2-4, that the present pound rate causes publishers to "think twice" before adding content that takes the piece above the break point. (a) If the added content is advertising, doesn't that advertising produce additional revenues? (b) In 1999, what percentage of the content of the Farmer and Rancher Exchange was advertising? (c) Would publishers think only once if the pound rate proposed by the Postal Service were adopted? (d) At what pound rate would this supposed problem disappear?

RESPONSE:

The problem I am describing with the present pound rate being too high is that it creates incentives for free papers to stop giving away free advertising space to charities, community events, and other local and social causes. Most free papers do have some of this information in their papers. As the free paper becomes larger and starts paying postal rates over the breakpoint, and finding our paper is less competitive with other nonpostal media, we are tempted to cut our costs by giving away less free or subsidized space. In 1999, 2% or less of the pages in our paper was "free" or community event or charity space. Approximately 6% to 10% of the pages in our paper were reports relating to livestock market information that is published by us at a subsidized rate. In the past when more of my paper was delivered by my own private carrier force at a fixed rate of 6 cents per paper and inserts regardless of weight, I would not think "once" or "twice" about giving away free space to good causes and I did not charge for publishing the livestock market information at the rates I need to charge today. A reduction in the pound rate would make me focus less on the money I am taking out of my pocket when we run reduced rate information or give away free space.

RESPONSES OF SMC WITNESS MERRIMAN TO AAPS INTERROGATORIES

AAPS/SMC-T2-9. At page 10, lines 16-24, you testify about giving space to charities and community events. (a) In 1999, what percentage of the run-of-press space in your publication was donated for this purpose? (b) In 1999, what percentage of the inserts were used for this purpose? (c) Is it your testimony that publishers will give space to charities only if there is no additional postage cost associated with that space? (d) Please quantify the amount by which you have "cut back" on free space and specify the time period during which that cut back took place. (e) Please confirm (or explain why if you cannot) that donating run-of-process space to a charity generally does not affect the weight of the piece (because it does not cause an increase in the page count or weight of the page) and therefore, while it might prevent sale of that space to a paying advertiser, it does not affect the postage.

RESPONSE:

(a) See answer to AAPS/SMC-T2-8.

(b) None.

(c) No. It is my testimony that we will give less space, or cut back space, when our papers exceed the break point and pay at the pound rate and we can measure a precise, additional cost in adding pages or inserts to our paper.

(d) I cannot precisely quantify how much we have cut back or give exact time periods for when the cut backs took place. I can say in general that as the demand for our paper has grown, and we find most of our mailings at the pound rate, that these cut backs have occurred. In the past, when some of the circulation of our paper was delivered by 120 private carriers (that delivered our paper at a fixed price of 6 cents per paper regardless of weight), approximately 15% to 20% of the pages in our paper went to nonpaid space.

(e) Not confirmed. We do vary the size of our paper and the number of pages based on the amount of advertising we have. We seldom have any open space. We do not need any "filler."

RESPONSES OF SMC WITNESS MERRIMAN TO AAPS INTERROGATORIES

AAPS/SMC-T2-10. At the bottom of page 10 and the top of page 11, you discuss giving away reader ads. (a) Please confirm that these ads would typically be run-of-press ads, not inserts. (b) In 1999, what percentage of your publication's run-of-press content was devoted to free reader ads? (c) In 1999, what percentage of your publication's run-of-press content was "filler."

RESPONSE:

(a) Confirmed.

(b) Zero.

(c) See answer to AAPS/SMC-T2-9. There is great demand for our paper. We do not run any "filler."

RESPONSE OF SMC WITNESS MERRIMAN TO INTERROGATORIES OF NAA

NAA/SMC-T2-2. With respect to The Exchange,

a. How many individuals are on staff of The Exchange?

b. How many of the individuals on the staff of The Exchange are reporters or editors serving the needs of rural America?

c. What percentage of the space in your paper is devoted to news and other editorial matter of interest to rural America?

d. Does your advertising revenue cross-subsidize the news and editorial activities of your paper?

RESPONSE:

a. 40

b-d. We do not have reporters or editors as such but as explained in pages 3 to 7 of my testimony, we believe our paper does a better job of serving the "needs of rural America" than the local community papers or the daily newspapers in surrounding larger metropolitan areas. Please see my answer to NAA/SMC-T1-1. Most of the news and editorial matter carried in the community papers in our area is merely reproduced news off of wire services and local announcements.

The Farmer & Rancher Exchange does have three salespeople who are located out of our central office in the smaller communities we serve. This allows them to give personalized and better services to our many small business customers.

Our paper does print at reduced rates livestock reports and other market information of great interest to rural America. I would estimate that approximately 6% to 10% of the pages of our paper contain this type of information that is offered at reduced rates designed to cover our direct costs. Our other advertising revenues subsidize the reproduction of this information. This advertising revenue also cross-subsidizes the space we give for free to local charities, community events, or other local and social causes.

RESPONSE OF SMC WITNESS MERRIMAN TO INTERROGATORIES OF NAA

NAA/SMC-T2-3. You suggest that free shoppers have left the postal system to go to private carriers and raise the specter of many more poised to change to private delivery if saturation ECR postal rates are not lowered, Please provide all evidence you have to support this claim, including specific names and dates of shoppers leaving the postal system for private delivery.

RESPONSE:

I would take issue with your characterization of my testimony that I "raise the specter of many more [free shoppers] posed to change to private delivery if saturation ECR postal rates are not lower." Page 5 of my testimony was based on 20 years in business where I state, "I can tell you what happens to free papers when there are unreasonable increases in postal rates. For papers in metropolitan and suburban areas, alternate delivery for all or part of the circulation is a viable option. In the 1980s, when postal rates for third class mail experienced big hikes, many free papers set up their own delivery force." I do not believe I am raising the "specter" that many free papers are poised to leave the USPS if "saturation ECR postal rates are not lowered."

I would state that based on my experience and association with other publishers that in the 1980s more than 50% of the publishers who belonged to IFPA (Independent Free Papers of America) distributed their paper through the USPS. Many of these publishers left the USPS in the 1980s and I would estimate today that approximately 75% of IFPA members have their own private carrier force.

The best evidence that I can submit to show that free papers can and will leave the USPS if prices are too high, and that free paper publishers are constantly comparing and evaluating the benefits of private carrier distribution costs with postal delivery, is to point to at least three different businesses or persons I know of that help publishers "convert from postal delivery to carrier home delivery." I am attaching to this interrogatory answer a copy of a brochure put out by Smith Associates, a business I understand to be affiliated somehow with Gannett Company, Inc., that was

distributed at an association meeting of free paper publishers. The brochure represents that Smith Associates can help free papers "convert from postal delivery to carrier home delivery; convert employee delivery force to independent contractors, reducing employment-related costs; and can help "increase pre-print profits." I have heard from other publishers that Smith Associates has represented that this conversation from postal delivery to carrier home delivery can be accomplished for some publishers "for free" as Smith Associates gets paid out of the savings the publisher realizes when it ceases to use the USPS. Another business that I understand can and does help publishers convert from postal delivery to private carrier is Advertiser Postal Service Corp. out of Gaylord, Michigan. Another person who I know provides services to assist publishers from switching from the USPS to private carrier is Joe Green, who submitted testimony on behalf of AAPS in the last postal rate case. Green publishes a number of shoppers but also operates a private carrier business. I have attended meetings where Green has appeared as an expert and resource to publishers who want to switch all or part of their distribution from the mail to private carrier. At one of the meetings I attended, Green and one of his customers discussed how the conversion was going and how the costs for private carrier delivery were substantially less than the former postal costs she paid. I did not take down the names of the persons or shoppers who said they had left the USPS in whole or in part for private delivery. Speaking from my own experience, I can attest that it is more impractical and unlikely that highly spread out or rural areas, like the area I cover, will find it cost-effective to switch completely from the mail to private delivery. Green provided a rule of thumb that the most optimum route for private carriers would have 28 homes per mile. In the past, I had approximately 120 private carriers that did private delivery for us in the portions of our circulation area that were more dense. After reclassification, I switched to the mail as a matter of convenience, I

could still save from $400 to $500 a week by doing my own carrier delivery in the more densely populated areas.

Free paper publishers, like me, will continue to evaluate the cost benefits of having our own private carrier with postal delivery. I can name some publishers that do a mix of both that are SMC members including The Reminder of Coventry, Rhode Island, Decker Advertising, Inc. of Delhi, New York, Antigo Area Shoppers Guide, Inc. of Antigo, Wisconsin, the Berkshire Pennysaver of Lee, Massachusetts, the County Pennysaver of Massena, New York, and the Oneida Madison Pennysaver of Clinton, New York. A specific example of one of the publishers who attended an association meeting that mentioned switching from the mail to private carrier because of postal rates and in particular the pound rate was the Pennysaver of Plymouth, New Hampshire.

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- Implement a product sample distribution program.
- Create an order fulfillment program and product delivery system.
- Provide demographic sales tools with lifestyle and consumer buying habits for your market.
- Develop address-specific delivery capability which matches your readers to your advertisers.

RESPONSE OF SMC WITNESS MERRIMAN TO INTERROGATORIES OF NAA

NAA/SMC-T2-4. Please refer to page 4, lines 8-9 of your testimony. Please explain what you mean when you say that postal rates for saturation distribution of your paper have remained "reasonable" over the past five years.

RESPONSE:

The postal rates that we have paid since 1996 have been reasonable in the sense that we have been able to offer our advertising customers reasonable prices. Reasonable in the advertising business generally means cost-effective. With the exception of the problem I explained in my testimony with the pound rate, our postal rates have allowed us to offer print advertising, distributed by mail, to the advertisers we serve at cost-effective advertising rates.

RESPONSE OF SMC WITNESS MERRIMAN TO INTERROGATORIES OF NAA

NAA/SMC-T2-5. Please refer to page 4, lines 8-9 of your testimony. Please explain what you mean when you say that postal rates for saturation distribution of your paper have remained "stable" over the past five years.

RESPONSE:

I believe the meaning of my statement is clear in the context of my testimony between pages 5 and 8. Although our rates went up by over 14% in January, 1995, there was a partial offsetting reduction in our rates through reclassification in 1996. The basic rate I pay for saturation pieces increased by 2.2% in January, 1999.

RESPONSE OF SMC WITNESS MERRIMAN TO INTERROGATORIES OF NAA

NAA/SMC-T2-6. Please look at page 5 of your testimony. You say that your verified audit shows an 86% readership (or .86 readers per copy) and that this number is off the charts for subscription papers and periodicals. Are you aware that the average readership of a newspaper is 2.148 readers per copy?

RESPONSE:

Your question is comparing apples and oranges. An audit company conducting a independent survey asked the question, "Do you or someone in your household normally read or look through the Farmer & Rancher Exchange?" 86% of all respondents answered "yes." It has been my experience that when newspapers refer to "readership," they may not be referring to a survey where newspaper recipients or subscribers were asked if they read the paper. Readership statistics as used in the newspaper industry are often extrapolated, without any third party survey or audit, from the census figures for the number of households in a given community times the number of people per household. In our market area, we have 2.67 people per household. Doing the math this way, we can, and do, boast that our paper has more than 110,000 readers with mailed circulation to over 42,000 homes.

One of the reasons newspapers like to cite readership figures is to avoid the questions that arise as their paid circulation decreases. For advertisers, the key question is often penetration. In the one area of our geographic coverage where we compete with a daily newspaper, Rapid City, the number of paid subscribers or the penetration of that paper in the market area it covers is less than 25%.

RESPONSE OF SMC WITNESS MERRIMAN TO INTERROGATORIES OF NAA

NAA/SMC-T2-7. Have you reduced the rates that you charge advertisers, as the ECR pound rate has declined since 1995 in real, inflation-adjusted terms?

RESPONSE:

Our overall rates have not "declined" since 1995 as January, 1995 produced an increase of 14.2% in the saturation rates we pay. In the interests of answering your question fairly and completely, I would volunteer that our insert rates have, thanks in part to the savings of reclassification and the stability of the pound rate, remained substantially the same for the past five years. Our ROP rates have increased since January, 1995 from 14% to 18%. I would point out that during this same period we have increased our circulation by approximately 25% so that the effective rate increase for our ROP advertisers was a wash or a modest decrease.

RESPONSE OF SMC WITNESS MERRIMAN TO INTERROGATORIES OF NAA

NAA/SMC-T2-8. Please describe the basis by which you charge for insert advertising in your shared mail program. In particular, do you charge on a piece per thousand basis, or by some other means?

RESPONSE:

Like our postal rates, we need to charge based on weight. Because some of our advertisers, who primarily use nonpostal media, are not used to charges based on weight, we make it a point in giving price quotes to our advertisers to give them a range of prices based on the estimated size of their advertising tab and to state, "Price is dependent only on weight and not on page numbers or page size." For our more sophisticated, larger advertisers, they are well aware of postal pricing and the effect of weight. For our smaller advertisers, we make it clear we need to see the piece, and weigh it, before an exact price can be quoted. We can quote an advertiser in terms of price per piece or price per thousand. We will allow the advertiser to buy as few as 200 pieces in a single carrier route.

RESPONSE OF SMC WITNESS MERRIMAN TO INTERROGATORIES OF NAA

NAA/SMC-T2-9. Please state your understanding of the extent to which other saturation mailers price advertising on the same basis that you do. Please also provide the basis for your understanding.

RESPONSE:

It is my understanding that other mailers also price their advertising based on weight, which is determined largely based on the postal rates and pound rates we pay. I believe it is common for other mailers to quote their prices based on a price per thousand.

RESPONSE OF SMC WITNESS MERRIMAN TO INTERROGATORIES OF NAA

NAA/SMC-T2-10. Do your mailings qualify for destination entry discounts? If so, please state what proportion of your mailings are entered at which level. If not, please explain why not.

RESPONSE:

Less than 10% of our mailings qualify for discounts at the DDU level. It is cost-effective for us to enter this mail by transporting to Mobridge, South Dakota, Rapid City, South Dakota, and Pierre, South Dakota for entry at the DDU as these cities are within 150 miles of our main office and have significant levels of circulation. It is not cost-effective, or practical, for us to transport the balance of our circulation to the sectional centers or delivery unit offices that would serve the balance of our circulation.

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

[No response.]

CHAIRMAN GLEIMAN: If not, is there anyone in the room who wishes to cross examine this witness?

COMMISSIONER OMAS: Mr. Chairman, I have one just very brief question for Mr. Merriman.

CHAIRMAN GLEIMAN: Certainly.

COMMISSIONER OMAS: Mr. Merriman, your testimony indicated that some of your issues weigh more than the breakpoint. Could you give us an indication of how often this occurs?

THE WITNESS: A majority of the time, it occurs; I'd say that probably 90 percent or better of the time that it would be over the breakpoint.

COMMISSIONER OMAS: Thank you. That's all I have, Mr. Chairman.

CHAIRMAN GLEIMAN: Anyone else on the Bench?

[No response.]

CHAIRMAN GLEIMAN: Any followup to the Bench question?

[No response.]

CHAIRMAN GLEIMAN: If not, counsel, would you need some time with your witness to prepare for redirect?

MR. BURZIO: There is no redirect.

CHAIRMAN GLEIMAN: Thank you. That being the case, Mr. Merriman, I want to thank you for your appearance here today and your contributions to our record, and also for clarifying for me, the pronunciation of the capital.

[Laughter.]

CHAIRMAN GLEIMAN: If someone had asked me, I could point to it on the map and spell it, but I'm not sure I would have pronounced it right until today, so we thank you for making us a little bit smarter, not only with regards to your testimony, but the geography, too. Thank you.

THE WITNESS: The Weather Channel doesn't even know where we're located.

[Laughter.]

CHAIRMAN GLEIMAN: You're excused, sir.

[Witness Merriman excused.]

CHAIRMAN GLEIMAN: We have a substitute today again, I see.

MR. VOLNER: Today is second team day.

CHAIRMAN GLEIMAN: Well, we won't comment on whether it's first team or second team. Mr. Volner, would you like to call your witness?

MR. VOLNER: Mr. Chairman, there were no interrogatories to Mr. Shick, and there were no requests for oral cross examination. So rather than burden the

Commission, what I'd like to do is have his testimony admitted on motion.

CHAIRMAN GLEIMAN: Certainly.

MR. VOLNER: I am going to hand to the Reporter, two copies of the Direct Testimony of Joseph E. Shick on Behalf of the Association for Postal Commerce and Mail Advertising Service Association, which has been designated PostCom et al-T-2.

There is a written declaration attesting to the correctness and the adoption of the testimony attached to the testimony itself.

CHAIRMAN GLEIMAN: Is there any objection?

[No response.]

CHAIRMAN GLEIMAN: Hearing none, the testimony of Witness Shick will be received into evidence. You'll provide the copies to the Reporter, along with the attestation, and the material will be transcribed into the record and entered into evidence.

[Written Direct Testimony of Joseph E. Shick, PostCom et al-T-1, was received into evidence and transcribed into the record.]

Postcom, et al.-T-2

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

POSTAL RATE AND FEE CHANGES, 2000 **Docket No. R2000-1**

DIRECT TESTIMONY OF JOSEPH E. SCHICK ON BEHALF OF THE ASSOCIATION FOR POSTAL COMMERCE AND MAIL ADVERTISING SERVICE ASSOCIATION

Communications regarding this document should be served on

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Dated: May 22, 2000

TESTIMONY OF JOSEPH E. SCHICK

Purpose and Autobiographical Sketch

My name is Joseph E. Schick. I submit this testimony on behalf of the Association for Postal Commerce and the Mail Advertising Service Association ("Postcom, et al."). In separate testimony of its economic consultant, Postcom, et al. has shown why drop entry discounts should reflect 100% of the measured cost savings the Postal Service realizes from this worksharing activity. The purpose of my testimony is to show why, as a practical matter, full recognition of the cost savings associated with drop entry serves to advance other non-transportation Postal Service operational objectives. In particular, I show that strengthening the incentives for drop entry serves to encourage mail to be placed on pallets.

I am Director of Postal Affairs at Quad/Graphics, Inc. headquartered in Pewaukee, Wisconsin. Quad is one of the largest printing and distribution companies in the United States for magazines, catalogs, books, parcels and other direct mail marketing materials. I have more than 15 years of experience in Postal Affairs and have been employed in my present position since 1990. I am the current Chairman of MTAC; I have served and continue to serve on numerous technical advisory committees and informal industry working groups. I testified before this Commission in Docket R97-1 on matters related to drop entry.

STRONG DROP ENTRY INCENTIVES PROMOTE PALLETIZATION OF MAIL

The depth of the discounts offered by the Postal Service for the drop entry of mail influences more than the decision whether it is worthwhile for mailers to enter their mail at a destination entry facility. From the standpoint of the mailer and mail service provider, it is the total cost of the job (including postage) that counts. Several of the postal related costs, such as sortation, are reflected in the rate structures of both the Standard (A) and Periodical rate schedules. There is, however, one component of the total cost of a mailing job that is not reflected in the current rate schedules -- the cost of placing presorted mail in containers (sacks, gaylords or pallets) -- for transportation to the Postal Service facility.

At each step of the mail preparation process, mailers and mail service providers have choices and, at each step, the choice taken is very strongly influenced by the trade-off between the cost of preparing and presenting a mailing and the benefit that the mailer will receive in terms of reduced postage. The choice of type of containerization and of transportation does not have to be, and often is not, the same for an entire mailing job. It is not uncommon for a mailer to split the run of a catalog into geographic parts. Some parts are drop entered; others are not. Nor are containerization and transportation decisions made independently of one another.

The basic calculus of cost against the benefit of discounted rates applies, and is applied, regardless of the size of the mailing. In each case, the decision is driven by the amount of the postal cost savings that will be realized by drop

entering a portion of the mailing at a particular destination entry point. For example, at a particular drop entry discount level, a mailer may decide to drop enter all of its mail at a single BMC or SCF close to the point of printing even though only a portion of the mailing will qualify for the drop entry discount. In yet other cases, the mailer may decide that it is necessary to split the mailing entirely and to use plant-load Postal Service trucks for some portion of the mailing job, using private sector transportation only for that location or those locations at which drop entry makes economic sense in terms of the total cost of the job. At a deeper level of discount, the mailer may decide that it is cost effective to enter mail at 2, 3 or more separate destination entry points.

This disaggregation of mailing job by point of entry carries with it a distinct difference in the kinds of containers that are used for transport. The reason for this lies in the cost difference associated with the type of containerization. For drop entered mail, it is almost imperative to use pallets to the maximum extent possible. Pallets permit most efficient use of the cubic capacity of the truck thereby keeping the transportation cost -- paid for by the mailer -- at the lowest feasible level. Also, pallets can be loaded onto (and off) trucks very quickly, reducing stop time and demurrage charges. However, for mail that is not drop entered and for mixed loads where only a portion of the load will qualify for the discount, the decision as to the choice of container is very different: Since the mailer has already paid for Postal Service-provided transportation through the undiscounted rate, the mailer's only incentive is to find the least costly means of getting the mail onto the Postal Service trucks (in a plant load operation) or to the

closest postal facility. The fact is that the palletization of mail requires costly and sophisticated equipment (forklifts, palletizers and the like) and is in many circumstances, therefore, more costly than the use of either sacks (or for certain types of mail) gaylords.

It is also important to consider the depth of dropship entry. Two elements of the mail preparation process affect the depth of entry -- presort and containerization. These are separate elements, but are tied together because of postal requirements and mail volume.

As indicated, in a normal mailing operation, each mailing job is presorted, containerized and set up for distribution based on its own merits. If, for instance, a mailing has no carrier route presort, it will not be eligible for any DDU (Destination Delivery Unit) discounts. That would be due to the fact that only carrier route mail can claim that level of dropship discount. If, in that same mailing, there were no 5-digit, 3-digit or SCF level pallets, the mail would not be entered at a SCF. It could only be entered at either a BMC (Standard (A) mail) or ADC (Periodicals), if palletized. If, in that same mailing, all or most of the mail was in sacks, we would not dropship regardless of sack level because of material handling and added transportation costs associated with sacks.

However, if we were presented with greater incentives for carrier route and/or 5-digit presort and 5-digit palletization, there would definitely be a change in behavior related to mail preparation in the printing and consolidation industry. Expansion of the presort discounts and harmonization of those discounts across classes would prompt co-mailing, co-palletization and, as a result, deeper drop

entry. Although we are hopeful that the Postal Service will restructure its presort incentives in the future, no significant changes in the presort structure for Standard (A) mail have been proposed in this case.

Moreover, the landscape of dropshipping has changed since the drop entry discount structure was initiated for Standard (A) mail in 1991. At that time, dropshipping at a SCF meant going to one designated building in the city where the SCF was located. Any mail that we had on a trailer that qualified for entry at that facility was off-loaded there. Since that time, because of the volume of mail that has moved in the SCFs for dropship entry into the Postal Service, numerous postal annexes have appeared. In some cities, a SCF may be represented by 5 or more different buildings located miles apart. In many instances, we are being required to off-load different classes of mail at different facilities for the same SCF dropship discount. Because we are combining those classes of mail on the same trailers to maximize our transportation efficiencies and to help control our costs, we actually end up losing those efficiencies at destination.

This relationship between presort and containerization and the changed landscape of drop entry makes it especially important to maximize the incentives for drop entry deep into the postal system. To do this, it is imperative that the drop entry differentials be preserved and that the full cost savings associated with drop entry be reflected in the discount.

Experience with the drop entry discounts in Standard (A) shows that the deeper the discount the more volume that is drop entered. It is also the case that the more mail that is drop entered, the more mail that will be placed on pallets.

As there are many of us in the mailing industry that believe that container-based discounts deserve renewed consideration, at the very least, it should be recognized that drop entry discounts promote palletization and that a strong incentive to drop entry also promotes palletization.

Palletization Benefits the Postal Service

The Postal Service has openly acknowledged that it realizes cost and non-cost benefits when mail is presented to it on pallets. Although, under the plant verified drop ship system, the mailer actually bears the cost of offloading the truck at the destination entry point, the Postal Service benefits even at this step of the mail handling process: the quicker the truck gets in and out, the sooner the unloading bay will be available for another entry, simplifying the Postal Service's administration of the drop entry process. Also, it has long been recognized that cross-docking operations -- which are performed by Postal Service personnel -- are much less time-consuming and more accurate when the mail has been presented on pallets. Further, when the mail is to be further worked or sorted at the destination entry point, mail on pallets can be more conveniently staged, whether the sortation is manual or automated, pallet of mail can be more readily moved to the location in the plant at which it is to be sorted than other any form of containerization. Further, working with industry, the Postal Service has developed pallets that are stackable and can be conveniently transported from the postal facility at which they have been off loaded to the mail service

provider's plants. Last, but by no means least, the use of pallets significantly reduces the risk of, and incidents of, injury to Postal Service employees.

All of these considerations, of course, translate into more efficient mail handing and processing at less cost to the Postal Service. Not all of these benefits to the Postal Service are incorporated into the drop entry discount. Some of them may be unquantifiable. Nonetheless, it plainly makes sense to reflect 100% of the cost savings associated with drop entry that the Postal Service is able to measure in order to promote realization of these other operational objectives.

TESTIMONIAL DECLARATION OF JOSEPH A. SCHICK

I declare under penalties of perjury that the foregoing direct testimony of Joseph A. Schick on behalf of Postcom, et al. (Postcom, et al.-T-2) was prepared by me or under my direction and control. I further declare that, if called upon to testify orally, my testimony would be the same.

Date: 7/18/00

Joseph E. Schick

CHAIRMAN GLEIMAN: There was no Designated Written Cross Examination for this witness. Does anyone have written cross examination that they would like us to consider?

If not, then, counsel, we thank you for your assistance with regard to Mr. Shick's testimony.

You also, I believe, have the next witness, who I've yet to swear in. I was hoping he would be in the room today so I could finally swear him in and get it straight once and for all, but we can proceed on motion, if you'd like.

MR. VOLNER: Mr. Chairman, there being no requests for oral cross examination of Witness Sander A. Glick, I would like to move his testimony in on motion. And I will hand to the Reporter, two copies of the Direct Testimony of Sander A. Glick on Behalf of the Association for Postal Commerce and Mail Advertising Service Association, which we have designated PostCom et al-T-1.

There is an attestation adopting the testimony attached to the testimony itself.

CHAIRMAN GLEIMAN: If you would provide that material to the Court Reporter -- is there any objection?

[No response.]

CHAIRMAN GLEIMAN: Hearing none, I'll direct that the material be transcribed into the record and received

into evidence.

[Written Direct Testimony of Sander A. Glick, PostCom et al-T-1, was received into evidence and transcribed into the record.]

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POSTAL RATE COMMISSION
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Postcom, et al.-T-1

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

POSTAL RATE AND FEE CHANGES, 2000 **Docket No. R2000-1**

DIRECT TESTIMONY OF SANDER A. GLICK ON BEHALF OF THE ASSOCIATION FOR POSTAL COMMERCE AND MAIL ADVERTISING SERVICE ASSOCIATION

Communications regarding this document should be served on

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Dated: May 22, 2000

TABLE OF CONTENTS

AUTOBIOGRAPHICAL SKETCH

My name is Sander A. Glick. I co-manage the Economic Systems practice at Project Performance Corporation (PPC), a consulting firm based in McLean, Virginia. PPG provides economic and technology consulting services to private and public sector clients. I joined PPC in 1994 as an Analyst and am now a Program Manager. Since joining the firm, I have worked on a number of economic and cost issues for mailer associations, the Department of Defense, and the Department of Energy.

In Docket No. R97-1, I testified regarding the fee for Qualified Business Reply Mail (QBRM) and the appropriate method for distributing rural carrier costs to mail classes and subclasses. In this case, I am also testifying for the Magazine Publishers of America (MPA) regarding the Postal Service's costing methods and joint Postal Service/Industry efforts to reduce Test Year costs and for the Recording Industry Association of America (RIAA) regarding the appropriate method for determining the cost difference between Standard (A) flats and parcels. I am an industry representative on the Mailers' Technical Advisory Committee's (MTAC) Package Integrity Work Group and was an industry observer on the MTAC Package Integrity Study.

I attended the Maxwell School of Citizenship and Public Affairs at Syracuse University, where I received a Masters of Public Administration in 1994, and Carleton College, where I received a Bachelors Degree, magna cum laude, in Physics in 1993. I am a member of the American Economic Association and the System Dynamics Society.

I. PURPOSE AND SCOPE OF TESTIMONY

In this testimony, I propose a rate design for Standard (A) with two important attributes. First, it provides mailers with the appropriate incentives to prepare their mailings in a way that minimizes the combined mail processing and transportation cost to mailers and the Postal Service in the Test Year. Second, it encourages mailers to barcode flats, which will facilitate the Postal Service's automation program.

My proposed rate design passes through 100 percent of destination entry cost savings. This rate design will not only increase the amount of Standard (A) mail that is dropshipped, but will also increase the amount of mail that is presented on pallets (see witness Schick's (PostCom, et al.-T-2) testimony). As I describe in my testimony for MPA, increased palletization will reduce the number of bundles that will break in the Test Year, which in turn will lower Postal Service costs. Further, as described by witness Unger, pallets are much less costly to handle than similarly presorted sacks. USPS-ST-43 at 4-5.

Second, while I believe that witness Moeller's (USPS-T-35) proposed automation discounts for Standard (A) flats are reasonable, they are based upon flawed cost studies. Specifically, the modeled cost savings upon which he bases his discounts are understated. Thus, the proposed passthroughs are a considerably smaller proportion of costs saved than witness Moeller presents them to be. Also, the Postal Service's flats cost model ignores the value that barcoded flats will provide to the Postal Service's flats automation program and a large portion of the savings that result directly from automation requirements pertaining to address quality. While these benefits are hard to quantify, they are high and justify a passthrough of more than 100 percent of the quantifiable cost savings in this case. The remainder of my testimony provides detail to support these points.

Section II of my testimony summarizes the Postal Service's proposed dropship discounts, estimates dropship discounts based on full passthroughs, and describes precedents for passing through 100 percent of destination entry cost savings. Section III discusses several reasons why the Postal Service has understated the cost savings that result from barcoding, quantifies the degree to which the Postal Service understated the value of automation mail, and briefly describes the value that barcodes will provide to the Postal Service's flats automation program.

II. DROPSHIP DISCOUNTS SHOULD REFLECT ALL DESTINATION ENTRY COST SAVINGS

A. The Postal Service's Proposal Passes Through Only About 75 Percent of Destination Entry Cost Savings

In this docket, witness Moeller proposes passthroughs of destination BMC (DBMC) and destination SCF (DSCF) cost savings of 73 percent and 77 percent, respectively, for the Standard (A) Regular subclass (USPS-T-35 at 15) and passthroughs of 73 percent for DBMC, 77 percent for DSCF, and 77.5 percent for destination delivery unit (DDU) entry for the Standard (A) Enhanced Carrier Route (ECR) subclass. Id. at 27.

In contrast, I propose 100 percent passthroughs of all destination entry cost savings because 100 percent passthroughs send the appropriate price signal to mailers and, as described by witness Schick,[1] will result in a more efficient mailstream.[2] Also, full passthroughs of destination entry cost savings

[1]Witness Schick notes that increased dropship discounts will increase palletization as well as the volume of mail that is dropshipped. Data provided by witness Crum (USPS-T-27) further support this point. Specifically, Crum shows that approximately 72 percent of Standard Mail (A) pounds entered at destination BMCs and 68 percent of Standard Mail (A) pounds entered at destination SCFs is prepared by mailers on pallets, whereas only 3 percent entered at origin associate offices, 20 percent entered at origin SCFs, and 38 percent entered at origin BMCs are prepared on pallets. USPS-T-27, Attachment C, Table 6.

[2]Increased palletization will reduce Postal Service costs including container handling costs. USPS-ST-43 at 4-5.

are more consistent with recent Commission recommendations for both Standard (A) and other mail classes.

B. Full Passthroughs Send the Appropriate Pricing Signals

In Docket No. R97-1, witness Bernstein described why passing through 100 percent of cost savings, an example of efficient component pricing (ECP), sends the theoretically correct price signal:

> ...any activity that can be performed by more than one agent should be performed by the most efficient (least cost) agent. In the case of postal services, the principle of Efficient Component Pricing can be applied to the establishment of a discount granted to mailers for performing some task that would otherwise be performed by the Postal Service, such as mailer presorting instead of Postal Service sorting. ECP minimizes the total cost of providing mail service, where the total cost is the sum of the Postal Service's cost plus the mailer's cost of worksharing (known as a user cost) if the mailer chooses to workshare. Under ECP, the price difference between a non-workshared mail category and its workshared component should equal the difference between the Postal Service costs of the non-workshared and workshared mail category. Docket No. R97-1, USPS-T-31 at 72-73.

In those situations where the cost for mailers to perform an activity is significantly different than the cost for the Postal Service to perform it, small deviations from ECP will not have a large impact on mailer behavior. Dropshipping, however, is not one of those activities. As witness Schick indicates, increasing dropship discounts will increase palletization and dropshipping.

C. Full Passthroughs Are Consistent With Recent Commission Decisions

Commission precedent also indicates that destination entry passthroughs higher than those proposed by witness Moeller are appropriate. In Docket No. R97-1, the Commission recommended destination entry passthroughs of 85 percent for Standard (A) mail. Op. R97-1 at V-431. Furthermore, the Commission recommended 100 percent passthroughs of destination entry cost savings for all but the non-transportation portion of the DDU entry cost avoidance

for Periodicals Regular mail[3] and nearly 100 percent for Standard (B) parcel post in that case. Id. at V-538 for Periodicals and V-488-495 for Parcel Post.

In Docket No. MC95-1, the USPS proposed 100 percent passthroughs of all destination entry cost savings for the newly proposed Enhanced Carrier Route (ECR) subclass and 95 percent for Standard (A) Regular. Op. MC95-1 at V-152-153. The Commission recommended 100 percent passthroughs for both subclasses. Id. at V-250. In addition, the PRC recommended a 100 percent passthrough of the transportation and non-transportation cost avoidances estimated for DSCF and DDU entry Periodicals Regular mail (again, excluding consideration of the unzoned editorial rate). Id. at V-141-142.

Table 1 presents a summary of the Commission-recommended passthroughs of destination entry cost savings for the major mail subclasses in Docket Nos. MC95-1 and R97-1. Note that except for the passthrough of DDU cost savings for Periodicals Regular mail in Docket No. R97-1, these passthroughs are all higher than the Postal Service's proposal for Standard (A) mail.

[3]The editorial pound rate for Periodicals is flat. Therefore, the effective destination entry discount for Periodicals mail is less than 100 percent.

Table 1. Recent Commission-Recommended Passthroughs of Destination Entry Cost Savings for Major Mail Subclasses

Class/Subclass	MC95-1	R97-1
Periodicals		
Regular		
DSCF (pc/lb)	100/100[1]	100/100[2]
DDU	100/100	100/70[3]
Standard (A)		
Regular		
DBMC	100[4]	85[5]
DSCF	100	85
Standard (A)		
ECR		
DBMC	100[6]	85[7]
DSCF	100	85
DDU	100	85
Standard (B)		
Parcel Post		
DBMC		100[8]
DSCF		92
DDU		99

[1]Op. MC95-1 at V-141-142.
[2]Op. R97-1 at V-537-538.
[3]On the pound rate, passthrough is 100 percent for transportation savings and 70 percent for non-transportation savings.
[4]Op. MC95-1 at V-250.
[5]Op. R97-1 at V-431.
[6]Op. MC95-1 at V-250.
[7]Op. R97-1 at V-431.
[8]Op. R97-1 at V-488-493. DSCF discount of 45 cents per piece and cost avoidance of 48.7 cents per piece; DDU discount of 72 cents per piece and cost avoidance of 72.4 cents per piece.

D. PostCom's Proposed 100 Percent Passthroughs Are Appropriate

Table 2 presents a comparison of the per-piece and per-pound discounts that result from using the Postal Service's reduced passthroughs of destination entry cost savings and the full passthroughs that I propose. As this table demonstrates, increasing the passthroughs to 100 percent in all cases increases the discounts by 0.7 to 0.8 cents on a per-piece basis and three to four cents on

a per-pound basis. Also, it maintains the Postal Service's proposed DBMC-DSCF differential and increases the DSCF-DDU differential. Attachment A presents rates based upon these proposed passthroughs.

Table 2. Comparison of USPS and PostCom Destination Entry Discounts and Passthroughs for the Standard (A) Regular and ECR Subclasses

		USPS Proposal		PostCom Proposal		
Subclass/ Entry Point	Cost Savings ($ per pc/ $ per lb)[1]	Passthrough %[2]	Discount ($ per pc/ $ per lb)	Passthrough %	Discount ($ per pc/ $ per lb)	Difference ($ per pc/ $ per lb)
	[1]	[2]	[3]=[1]*[2]	[4]	[5]=[1]*[4]	[6]=[5]-[3]
Regular Subclass:						
Piece-rated						
DBMC	0.0235	73	0.017	100	0.024	0.007
DSCF	0.0289	77	0.022	100	0.029	0.007
Pound-rated						
DBMC	0.114	73	0.083	100	0.114	0.031
DSCF	0.140	77	0.108	100	0.140	0.032
Enhanced Carrier Route:						
Piece-rated						
DBMC	0.0235	73	0.017	100	0.024	0.007
DSCF	0.0289	77	0.022	100	0.029	0.007
DDU	0.0357	77.5	0.028	100	0.036	0.008
Pound-rated						
DBMC	0.114	73	0.083	100	0.114	0.031
DSCF	0.140	77	0.108	100	0.140	0.032
DDU	0.173	77.5	0.134	100	0.173	0.039

[1]USPS-T-27 at 7; USPS-LR-I-166, wp1_comm.xls, worksheet "drop."
[2]USPS-LR-I-166, wp1_comm.xls, worksheet "drop."

III. THE VALUE OF AUTOMATION IS MUCH HIGHER THAN ESTIMATED BY THE POSTAL SERVICE

In this case, witness Moeller states that the cost studies performed by witness Yacobucci (USPS-T-25) "clearly indicate that the automation discounts are too large, so a reduction is warranted." USPS-T-35 at 13. He therefore proposes automation discounts that are smaller than the current discounts but, in order to mitigate the impact and to limit the percentage changes for individual rate cells, he proposes to maintain these discounts "at nearly 75 percent of their current value." Id.

Witness Moeller's logic is flawed. Incorrect and inconsistent assumptions in the Postal Service's flats cost model, USPS-LR-I-90, understate cost savings by a significant amount:

- The flats cost model overstates FSM 881 accept rates for nonbarcoded flats.

- The flats cost model fails to take into account the lower wage rates that are paid to BCR/OCR clerks as compared to keyers and clerks who manually sort flats.

- The flats cost model understates the proportion of incoming secondary sorts that will be performed on flat sorting machines in the Test Year.

- The flats cost model uses inconsistent assumptions regarding FSM 1000 keying and FSM 1000 BCR productivities. This results in a data anomaly.

Furthermore, as described by witness Lubenow (PostCom, et al.-T-3), the Postal Service has not quantified all of the cost savings that result from the higher address quality that result directly from automation requirements. Finally, while Postal Service witnesses clearly understand the effect that barcoded flats have on automated flat sorting productivity, Unger, Tr. 21/8275, the Postal Service has failed to quantify this value.

Therefore, given these points and the rapidly changing flats processing environment, it is appropriate to maintain automation discounts at the level proposed by witness Moeller. The remainder of this section discusses the reasons why the Postal Service's model underestimates cost savings, models automation cost savings using a revised version of the flats cost model, and

discusses additional reasons why witness Moeller's proposed automation discounts should not be reduced.

A. Incorrect and Inconsistent Assumptions in the USPS Flats Cost Model Lead to Understated Cost Savings

In this section, I first describe the reasons why the Postal Service's cost model understates automation-related cost savings. I then estimate more accurate automation-related cost savings using an improved version of the USPS flats cost model. While my corrections are focused on the Test Year flats processing environment, the value of automation will increase further in the coming years as the Postal Service begins delivery point sequencing (DPS) barcoded flats.[4]

1. FSM 881 Accept Rates

Based upon input from USPS Operations, the Postal Service's flats cost model incorrectly assumes that the FSM 881 OCR accept rate for nonbarcoded flats is between 80 and 90 percent.[5] USPS-LR-I-90, worksheet "Accept Rates." These accept rates are significantly higher than the 70 to 80 percent FMOCR read rates that were cited by the Postal Service in its "Strategic Improvement Guide for Flats Processing," which was just issued in September 1999. USPS-LR-I-193 at 21.

Furthermore, the FSM 881 accept rates for nonbarcoded flats used in the USPS flats cost model are similar to the average accept rates for FSM 881s in "BCR/OCR mode," a mode which processes barcoded flats on the BCR and nonbarcoded flats on the OCR. USPS-LR-I-90, worksheet "Accept Rates"; USPS-LR-I-107, Yrscrub.xls; Unger, Tr. 21/8175-8177. Because accept rates

[4]Delivery Point Sequencing flats will increase USPS efficiency because the unit cost for performing a manual incoming secondary sort for flat-shaped mail is more than four cents while the unit cost of an incoming secondary sort on an AFSM 100 is approximately one cent. USPS-LR-I-90, worksheet "Mailflow Model Costs", column 21.

[5]Note that the notation "FSM 881 OCR" in USPS-LR-I-90 denotes an FSM 881 in BCR/OCR mode processing nonbarcoded flats. Yacobucci, Tr. 5/1439. This is different than what "FSM 881 OCR" denotes in MODS. In MODS, "FSM 881 OCR" indicates an FSM 881 in BCR/OCR mode processing all flats. Unger, Tr. 21/8175-8177.

are much higher for barcoded flats than for nonbarcoded flats, using what amounts to average accept rates for FSM 881s in BCR/OCR mode as proxies for the accept rates for nonbarcoded flats is inappropriate. Using actual incoming secondary FSM 881 BCR and FSM 881 BCR/OCR accept rates for FY 2000, Institutional Response to PostCom/USPS-ST43-6, I was able to calculate an average accept rate for nonbarcoded flats on the FSM 881 BCR/OCR. My calculations, which were confirmed by witness O'Tormey, result in an average FSM 881 BCR/OCR - Incoming Secondary accept rate for nonbarcoded flats of approximately 75 percent. Tr. 21/8353-8354.

Since there is no reason to believe that the accept rate for other sorts (e.g., outgoing primary) will be higher than that for the incoming secondary sort and to be consistent with the "Strategic Improvement Guide for Flats Processing," I use this accept rate for all FSM 881 BCR/OCR sorts of nonbarcoded flats. By increasing the effect of the presence of a barcode on the FSM 881 BCR/OCR accept rate, using this more accurate FSM 881 BCR/OCR accept rate for nonbarcoded flats increases automation-related cost savings.

Table 3. FSM 881 BCR/OCR Accept Rates for Nonbarcoded Flats

Scheme	USPS Flats Cost Model[1]	PostCom Model
Outgoing Primary	80%	75%
ADC	80%	75%
Incoming Primary	85%	75%
Incoming Secondary	88%	75%

[1]USPS-LR-I-90, worksheet "Accept Rates."

2. Average Labor Rate

Witness Kingsley indicates that the Postal Service's flats cost model uses identical labor rates for all clerks despite the fact that automated (BCR/OCR) operations are staffed primarily by PS-04 and casual clerks while manual sorting operations are staffed by PS-05 clerks, and FSM keyers are PS-05 or PS-06 clerks. Kingsley, Tr. 5/1803-1804; Kingsley, Tr. 5/1840-1841. (Table 4 shows FY 2001 average labor rates for each type of clerk.) Since automation flats are more likely to be sorted in automated operations, using an average labor rate for all operations understates automation-related cost savings.

Table 4. FY 2001 National Average Labor Rates[1]

Level	Rate
Casual	$11.49
PS-04	$27.41
PS-05 (Manual Sorting and Keying)	$31.41
PS-06 (Keying)	$32.93

[1]Kingsley, Tr. 5/1941.

To estimate worksharing-related cost savings, the Postal Service should develop operation-specific wage rates in the next case and use them in their worksharing cost models. Lacking such information in this case, I have used data from witness Kingsley's interrogatory responses to develop approximate operation-specific wage rates for flat sorting operations. I use these rates in the revised flats cost model (filed as MPA-LR-2), which I developed with witness Stralberg (TW-T-1).

In implementing this adjustment, I generally use PS-05 wage rates for manual sorting, PS-05 and PS-06 wage rates for FSM keying, and casual and PS-04 wage rates for OCR/BCR operations. Then, I proportionally adjust these wage rates to ensure that the weighted-average wage rate for all piece-sorting operations, $28.24, is consistent with the average wage rate in the Postal Service's model. USPS-LR-I-90, worksheet "Data."

3. Incoming Secondary Operations

The incoming secondary machine/manual factors (IS factors) used in the Postal Service's flats cost model for FSM 881s and AFSM 100s understate the extent to which Standard (A) flats will receive incoming secondary sorts on flat sorters in the Test Year. Witness Yacobucci defines IS factors as "the percentages of flats by machine type that flow to a machine for incoming secondary piece handlings that the machine actually processes. The remaining flats not actually processed on the machine are processed manually." USPS-T-25 at 16. For example, the IS factor of fifty percent in the USPS flats cost model for AFSM 100s and FSM 881s for Standard (A) Regular flats, USPS-LR-I-90,

worksheet "Data," indicates that the Postal Service performs a manual incoming secondary sort on fifty percent of flats that meet all machinability requirements, receive all other sorts on a flat sorter, and are sorted at plants that have machines.

On cross examination, witness Kingsley justified the use of a fifty percent IS factor for AFSM 100s and FSM 881s by first indicating that flats in small zones would not be sorted on machines: "So, for flats, if we already know that they are small zones, we aren't going to put them on a flat sorter, that automatically is 30 percent." Kingsley, Tr. 5/1977.

Then she indicated that another twenty percent of flats are not sorted on an FSM because they are rejected or cannot be handled by a machine. Specifically, when asked, "So you are projecting that between the things that cannot be handled by a machine, for one reason, and the pieces that are rejected by a machine, for some reason, those are going to make up 20 percent of the universe of flats in a test year. You add that to 30 and you get the 50, is that right?" she responded "Approximately, yes." Kingsley, Tr. 5/1978.

While witness Kingsley's argument that less than 100 percent of machineable flats will receive an incoming secondary sort on a flat sorter is reasonable, the appropriate percentage for Standard (A) Regular flats should be seventy percent (the percentage of flats that destinate in zones with ten or more routes), not fifty percent, for several reasons.

First, witness Kingsley indicated that, at the end of the Phase I AFSM 100 deployment, there will be no shortage of flat sorting machines. Kingsley, Tr. 5/1631. Therefore, the capacity problem, which she identified as the primary reason for manual flat sorting, will be alleviated by the Test Year. USPS-T-10 at 15; Kingsley, Tr. 5/1691. Her assessment can be verified using evidence on the record. According to witness Yacobucci's model, there will be approximately 13 billion machineable, non-carrier route flats in the Test Year.[6] Excluding witness

[6]This number was calculated by summing machineable flat volumes for First-Class Mail, Standard (A) Regular, Standard (A) Nonprofit, Periodicals Regular, and Periodicals Nonprofit from USPS-LR-I-90. To do this, I used the method recommended by witness Yacobucci during

Kingsley's thirty percent of flats that destinate in small zones leaves approximately nine billion machineable, non-carrier route flats that will destinate in zones where the Postal Service plans to perform incoming secondary sorting on flat sorters.

The Postal Service will have more than enough capacity to sort all of these flats to carrier route on flat sorters. In the Base Year, before the OCR modification to FSM 881s[7] and the Postal Service's effort to increase FSM utilization (USPS-T-10 at 10 and 15), the Postal Service performed approximately five billion incoming secondary sorts on FSM 881s. USPS-LR-I-107, Yrscrub.xls. Phase I of the AFSM 100 deployment will provide an additional 16 billion sorts in the Test Year.[8] Based upon witness Tayman and witness Kingsley's confirmation that the primary use of the Phase I AFSM 100 machines will be to automate incoming secondary sorting and witness Kingsley's estimate that at least half of the savings from Phase I will be from automating incoming secondary sortation, witness Buc (DMA, et al.-T-1) calculated that Phase I of the AFSM 100 deployment will provide at least six billion incoming secondary sorts. Kingsley, Tr. 5/1782; Tayman, Tr. 2/314; Kingsley, Tr. 5/1660; DMA, et al.-T-1.

The 11 billion Test Year incoming secondary sorts (6 billion on AFSM 100s and 5 billion on FSM 881s) that will be provided by FSM 881s and AFSM 100s is more than enough to automate the incoming secondary sorting of all machineable flats that are not in small zones.[9] Given the capacity available, the significant productivity gap between AFSM 100 sorting and manual sorting, and the AFSM 100's capability to combine zones, O'Tormey, Tr. 21/8370, the Postal Service may even want to consider (as it did for the delivery point sequencing of

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cross-examination. Yacobucci, Tr. 5/1485-7. These calculations are made in MPA-LR-2, worksheet "Total Volumes."

[7]Witness Kingsley noted that the FSM 881 modification significantly increased the volume of flats that received their incoming secondary sort on a flat sorter. USPS-T-10 at 14.

[8]I calculated this figure using the method described by witness Kingsley. Kingsley, Tr. 5/1981. I multiplied 166.5 Test Year machine-equivalents (USPS-LR-I-83 at I-12) by 52 weeks/year, 6 days/week, 20 hours/day, and 15,000 pieces per hour. USPS-LR-I-90, worksheet "Productivities," footnote 7. Also, note that this completely ignores the Phase II AFSM deployment.

[9]Even if you use witness O'Tormey's 13.5 billion Test Year AFSM 100 sorts, O'Tormey, Tr. 21/8371, which is approximately twenty percent less than the figure I developed, there will still be enough capacity to sort all machineable flats that are not in small zones.

letters) sorting some flats that destinate in zones with less than ten routes in automated operations. Kingsley, Tr. 5/1980.

Second, on cross examination, witness Kingsley's explanation of the reason why the IS factor is fifty percent, rather than seventy percent, is unsatisfactory. Specifically, she states:

> I think that Mr. Yacobucci's models [the USPS flats cost model] take into account most of those situations, where it is too small of a zone, we have reject rates, we have nonmachinability issues, and some of it, again, is coverage factors. We will not have AFSM 100s everywhere. There are only 173 machines, and there are 250 processing facilities. So we know that it is not going to be available to cover every zone with 10 or more carrier routes. Kingsley, Tr. 5/1979.

While witness Kingsley is correct that the USPS flats cost model does take these "situations" into account, she is wrong that these situations should reduce the IS factor to fifty percent. Specifically, as discussed above, the IS factor represents "the percentages of flats by machine type that flow to a machine for incoming secondary piece handlings that the machine actually processes." USPS-T-25 at 16. First, nonmachineable flats and flats that destinate at facilities without AFSM 100s and FSM 881s do not "flow" to AFSM 100s and FSM 881s for incoming secondary sorting in the first place. Second, rejects do flow to AFSM 100s and FSM 881s but, based upon machine-specific accept rates, are explicitly rejected from these machines.

4. FSM 1000 Productivities

The flats cost model uses actual productivities from MODS for FSM 1000 keying operations, but assumption-based productivities for FSM 1000 BCR operations. USPS-LR-I-90, worksheet "Productivities," footnotes 4 and 6. Specifically, due to a lack of Base Year FSM 1000 BCR productivity data, the Postal Service assumed that FSM 1000 BCR productivities are exactly the same as FSM 881 BCR productivities. The inconsistent treatment of FSM 1000 keying productivity and FSM 1000 BCR productivity results in a significant data

anomaly: the incoming secondary FSM 1000 keying productivity, 863 pieces per hour, in the USPS flats cost model is higher than the incoming secondary FSM 1000 BCR productivity, 798 pieces per hour. USPS-LR-I-90, worksheet "Productivities." [10]

Furthermore, when compared to all other FSM keying operations, the incoming secondary FSM 1000 keying productivity appears to be anomalously high. As Table 5 shows, the incoming secondary FSM 1000 keying productivity is approximately fifty percent higher than the average of all other keying productivities and thirty percent higher than the next-highest productivity. To treat FSM 1000 keying and BCR productivities consistently and to resolve these anomalies, I assume that FSM 1000 keying productivities are the same as FSM 881 keying productivities.[11]

Table 5. PFY 1998 Keying Productivities[1]

Description	FSM 1000	FSM 881
Outgoing	594	664
ADC	543	531
Incoming Primary	599	556
Incoming Secondary	863	488

[1]USPS-LR-I-90, worksheet "Productivities."

5. PostCom Automation-Related Cost Savings

To estimate the extent that the Postal Service's incorrect assumptions reduce automation-related cost savings, I estimated automation-related cost savings using the revised version of the flats cost model, MPA-LR-2, that I developed jointly with witness Stralberg. As shown in Table 6, automation-related cost savings based upon more reasonable assumptions are much higher than those estimated by the USPS flats cost model. Further, based upon these

[10]This clearly is anomalous. According to YTD FY 2000 MODS data, FSM 1000 BCR productivities are about twice as high as FSM 1000 keying productivities. Institutional Response to PostCom/USPS-ST43-6, Attachment 3.

improved automation-related cost savings estimates (and still ignoring address quality-related savings), Moeller's Basic Automation discount represents a 126 percent passthrough and his 3/5-Digit Automation discount is based upon a passthrough of 204 percent.

Table 6. Comparison of Automation-Related Mail Processing Cost Avoidances

Rate Category	Moeller's Effective Passthrough[1]	Cost Avoidance (Cents Per Piece)		
		PostCom Model	USPS Model[2]	Savings Difference
		[1]	[2]	[3]=[1]-[2]
Basic Nonautomation		21.406	19.825	
Basic Automation		17.901	17.915	
Basic Auto Savings	126%	3.505	1.910	1.595
3/5-Digit Nonautomation		12.546	12.004	
3/5-Digit Automation		11.221	11.457	
3/5 Auto Savings	204%	1.325	0.547	0.778

[1]Automation discounts, USPS-LR-I-166, worksheet "regval," divided by PostCom-modeled automation cost avoidances.
[2]USPS-T-25 at 5, Table II-4.

While witness Stralberg and I made several additional improvements to the USPS flats cost model (for a detailed description of these improvements, see TW-T-1), only one of these has a significant impact on automation-related cost avoidances. Specifically, the lower Test Year bundle breakage assumptions used in the revised model reduce automation-related cost savings because they reduce the number of piece sorts that are required for presorted mail. As I describe in my testimony for MPA, these lower Test Year bundle breakage assumptions, MPA-LR-2, worksheet "Control Sheet," are both appropriate and reasonable.

[11]*Another option for resolving the anomaly would be using YTD FY 2000 productivites for FSM 1000s.*

B. The Postal Service Ignored the Cost Savings That Result Directly From Automation Requirements Pertaining to Address Quality

As described by witness Lubenow, the high address quality of automation flats results in significant (although hard to quantify) cost savings. In this section, I show that address quality is higher for automation mail than for nonautomation mail; describe why better address quality results directly from automation requirements; and explain that while the Postal Service's flats cost model explicitly models some of the cost savings that result from improved address quality (e.g., higher accept rates), it ignores many others.

To set a context for this discussion, a recent Postal Service study of undeliverable-as-addressed (UAA) mail, defined as "all mail that cannot be delivered to the person or business at the address specified", found that the total cost for processing UAA mail is about $1.5 billion. USPS-LR-I-82 at 30. Therefore, address quality does have a large impact on Postal Service costs.

1. High Address Quality Results Directly From Automation Requirements

In his testimony, witness Lubenow explains why address quality is higher for automation flats than for nonautomation flats. In this section, I simply make two additional points: (1) while the Postal Service's Operations witness (witness Kingsley) has no data to prove that automation flats have higher address quality than nonautomation flats, she believes that this is the case; and (2) witness Kingsley agrees that higher address quality stems directly from automation requirements.

First, when witness Kingsley was asked to confirm that there is a difference in address quality between automation flats and nonautomation flats, she states, "I would assume yes, but have no data to support." Kingsley, Tr. 5/1805-1807. Second, when asked whether higher address quality results directly from automation requirements, she stated: "Automation rate flats must bear addresses that are sufficiently complete to allow matching to the current USPS ZIP+4 File and must be matched using current CASS-certified address matching software to obtain the correct numeric ZIP+4 code. These are not

requirements for non-automation non-carrier route presort flats and this could result in some differences in address quality." Id.

2. Address Quality Affects Much More Than Reject Rates

In his testimony, witness Lubenow explains that the higher address quality of automation flats not only reduces the reject rate on flat sorters, but also decreases many other costs to the Postal Service. The Postal Service, however, only explicitly modeled the cost savings from lower reject rates, stating that "LR-I-90 accounts for any other mail processing costs caused by address problems via the CRA cost adjustments." Yacobucci, Tr. 5/1481. Accounting for costs caused by address problems via the CRA cost adjustments essentially ignores them for the purpose of determining automation-related cost savings.

For the vast majority of Standard (A) Regular flats, most of the unit costs added by the CRA adjustment, 3.484 cents, come from the "NOT WORKSHARING-RELATED CRA COST" adjustment, which is added to all Standard (A) rate categories and therefore does not reflect cost differences between rate categories. For 3/5-Digit presort flats, the "PROPORTIONAL CRA ADJUSTMENT FACTOR" increases the automation cost savings by less than 0.1 cent, and this amount accounts for all worksharing-related costs not explicitly modeled, not just the cost of poor address quality. USPS-LR-I-90, worksheets "Cost Averaging" and "Scenario Costs." Because a large portion of the cost of poor address quality is unrelated to the reject rate, the Postal Service's flats cost model understates automation-related cost savings pertaining to address quality.

C. Barcoded Flats Will Facilitate the Postal Service's Flats Automation Program

As witness O'Tormey describes in his testimony, the Postal Service's flats automation/mechanization efforts have been met with mixed results. USPS-ST-42 at 7. As shown in Table 7, these mediocre results can be traced directly to

the large decreases in FSM productivity that have occurred as more flats have shifted from manual processing to machine processing.[12]

Table 7. Flat Sorting Productivity
(TPH in Thousands)[1]

Fiscal Year	Flat Sorting Machine
1993	746
1994	735
1995	719
1996	714
1997	670
1998	613

[1]USPS-LR-I-283, BY98 variability dataset (unscrubbed).

Evidence in this case suggests that this decrease in productivity has at least partially resulted from the challenges presented by nonbarcoded flats:

> The introduction of the FMOCR presents an additional challenge to the management of flats processing operations. Ideally, all FSM 881 machineable flats should be processed on the FMOCR. However, depending on the mailbase being processed, the reality is that only 70% to 80% of the non-barcoded flats inducted will be read by the FMOCR, which means that 20% to 30% of the flats inducted will not be read by the FMOCR. Therefore, occasionally there will not be enough processing time or equipment available to key the non-reads coming from the FMOCR on a multiposition flat sorting machine (MPFSM) keying sort program and still meet service commitments. At times, the high non-read rate of a particular mailbase may make it less productive to process it through the FMOCR and then key the rejects than it would be to key all the flats the first time through. However, the much higher throughput for FMOCR induction versus keyed induction should eliminate the latter consideration in almost all cases.
>
> The ideal scenario for each facility is to maximize automated flat processing and reduce keying operations to a minimum. The bottom line, however, is that each facility will need to evaluate FMOCR versus MPFSM processing

[12]Another data set in USPS-LR-I-283 shows that FY 99 FSM productivity was even lower than FY 98 FSM productivity. USPS-LR-I-283, LR283MPA.xls, BY98 variability dataset (scrubbed).

> for each processing operation, taking into consideration site-specific productivities, machine availability, and mailbase readability. USPS-LR-I-193, Strategic Improvement Guide for Flats Processing at 21.

While it is possible that the challenges presented by nonbarcoded flats may not adversely impact the AFSM 100 deployment to the same extent as they have past FSM deployments, it is also possible that barcoded flats will have an even larger impact on the success of the AFSM 100 deployment:

> [D]uring the initial deployment of the AFSM 100's, the potential volume of suitable mail will be greater than the capacity of the machines to be deployed. We expect to prioritize mail for processing on available AFSM 100's to achieve the best overall results. We have found that bar coded mail generally meets our overall preparation guidelines and processes more efficiently than non bar-coded.
>
> The AFSM has a throughput that is several times greater than either the FSM 881 or the FSM 1000. By placing the best mail available on the AFSM 100, we will maximize throughput and minimize downtime, including downtime that might result from jams that occur when inferior quality mail is presented...
>
> Increasing the volume of bar coded mail is a major part of our strategy for flats, as it was for letters. Unger, Tr. 21/8181-8182

Until we know the extent to which the presence of barcoded flats will affect the AFSM 100 deployment, I believe that it is prudent to continue encouraging mailers to barcode flats with a discount at the level proposed by witness Moeller.

ATTACHMENT A. SUMMARY OF POSTCOM PROPOSED RATES

Regular Subclass

Automation		Entered at destination: BMC	SCF	DDU
Letters				
Basic	0.204	0.180	0.175	
3-digit	0.197	0.173	0.168	
5-digit	0.176	0.152	0.147	
Flats (pc-rated)				
Basic	0.271	0.247	0.242	
3/5-digit	0.235	0.211	0.206	
Flats (lb-rated)				
per piece:				
Basic	0.135	0.135	0.135	
3/5 digit	0.099	0.099	0.099	
per pound:				
Basic	0.661	0.547	0.521	
3/5 digit	0.661	0.547	0.521	

Presort		Entered at destination: BMC	SCF	DDU
Letters				
Basic	0.246	0.222	0.217	
3/5-digit	0.229	0.205	0.200	
Non-letters (pc-rated)				
Basic	0.315	0.291	0.286	
3/5-digit	0.262	0.238	0.233	
Non-letters (lb-rated)				
per piece:				
Basic	0.179	0.179	0.179	
3/5 digit	0.126	0.126	0.126	
per pound:				
Basic	0.661	0.547	0.521	
3/5 digit	0.661	0.547	0.521	

Residual Shape Surcharge	0.180
Barcode Discount	0.030

Enhanced Carrier Route

		Entered at destination: BMC	SCF	DDU
Letters				
Basic	0.182	0.158	0.153	0.146
Auto	0.170	0.146	0.141	0.134
High-D	0.159	0.135	0.130	0.123
Saturation	0.150	0.126	0.121	0.114
Non-letters (pc-rated)				
Basic	0.182	0.158	0.153	0.146
High-D	0.161	0.137	0.132	0.125
Saturation	0.155	0.131	0.126	0.119
Non-letters (lb-rated)				
per piece:				
Basic	0.062	0.062	0.062	0.062
High-D	0.041	0.041	0.041	0.041
Saturation	0.035	0.035	0.035	0.035
per pound:				
Basic	0.584	0.470	0.444	0.411
High-D	0.584	0.470	0.444	0.411
Saturation	0.584	0.470	0.444	0.411

Residual Shape Surcharge	0.150

Source:
Revised version of USPS-LR-I-166, wp1_comm.xls, Worksheet "Sum"
Revised version assumes 100 percent passthroughs of dropship cost savings

DECLARATION
OF
SANDER A. GLICK

I declare under penalty of perjury that the foregoing Direct Testimony of Sander A. Glick on Behalf of The Association for Postal Commerce And Mail Advertising Service Association (PostCom et al. – T-1) was prepared by me and that, if called upon to testify under oath, it would be my testimony.

Sander A. Glick

Executed
July 19, 2000

dc1/117231

CHAIRMAN GLEIMAN: There was some Designated Written Cross Examination for Witness Glick. Are you prepared to enter that material also, counsel?

MR. VOLNER: I am, Mr. Chairman. The Designated Written Cross Examination of Witness Glick consists of the Newspaper Association of America Interrogatory T-1-2, and the Postal Service Interrogatories T-1-1 through 6.

I have two complete sets of the Written Cross. The answers were submitted under attestation, and I don't believe that a further attestation is necessary.

CHAIRMAN GLEIMAN: That's correct, counsel, and if you'd please provide those to the Reporter, I'll direct that the material be received into evidence and transcribed into the record.

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

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, DC 20268-0001

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

DESIGNATION OF WRITTEN CROSS-EXAMINATION
OF ASSOCIATION FOR POSTAL COMMERCE
WITNESS SANDER A. GLICK
(POSTCOM-T-1)

Party	Interrogatories
Newspaper Association of America	USPS/PostCom-T1-1-2
United States Postal Service	USPS/PostCom-T1-1-6

Respectfully submitted,

Margaret P. Crenshaw

Margaret P. Crenshaw
Secretary

INTERROGATORY RESPONSES OF
ASSOCIATION FOR POSTAL COMMERCE
WITNESS SANDER A. GLICK (T-1)
DESIGNATED AS WRITTEN CROSS-EXAMINATION

Interrogatory	Designating Parties
USPS/PostCom-T1-1	NAA, USPS
USPS/PostCom-T1-2	NAA, USPS
USPS/PostCom-T1-3	USPS
USPS/PostCom-T1-4	USPS
USPS/PostCom-T1-5	USPS
USPS/PostCom-T1-6	USPS

USPS/Postcom-T1-1. Please see your testimony at Page 6, Table 2.

a. Confirm that your proposed increase in the DBMC piece discount is 50%. If you cannot confirm, please provide your proposed percentage increase.
b. Confirm that your proposed increase in the DSCF piece discount is 38%. If you cannot confirm, please provide your proposed percentage increase.
c. Confirm that your proposed increase in the DDU piece discount is 38%. If you cannot confirm, please provide your proposed percentage increase.
d. Confirm that your proposed increase in the DBMC pound discount is 44%. If you cannot confirm, please provide your proposed percentage increase.
e. Confirm that your proposed increase in the DSCF pound discount is 40%. If you cannot confirm, please provide your proposed percentage increase.
f. Confirm that your proposed increase in the DDU pound discount is 37%. If you cannot confirm, please provide your proposed percentage increase.
g. If, in subsequent rate proceedings, the passthrough of 100 percent of the calculated cost avoidances used to support the destination entry discounts were to lead to reductions of 40% in the discounts, would you continue to advocate 100 percent passthrough? If not, what passthrough would you recommend?

RESPONSE:

a. Confirmed.

b. Confirmed.

c. Confirmed.

d. Confirmed.

e. Confirmed.

f. Confirmed.

g. If the calculated cost avoidance included all cost savings that result from drop shipping and the lower cost avoidance was one that I believed would continue into the future, I would advocate a 100 percent passthrough. If I believed that the calculated cost avoidance ignored a portion of the savings that result from dropshipping or there was a large amount of uncertainty about the value of drop shipping in the future USPS operating environment, I would argue that reducing destination entry discounts only to increase them again in the next case would be inappropriate.

USPS/Postcom-T1-2. Please see Attachment A of your testimony which includes POSTCOM proposed rates for Standard Mail (A).

a. Please confirm that the POSTCOM proposed increase for non-destination entry 3/5-digit automation flats is 15.8 percent. If you cannot confirm, please provide the percentage increase you are proposing for non-destination entry 3/5-digit automation flats.
b. Please confirm that your proposed increase for non-destination entry 3/5-digit automation flats exceeds the largest USPS proposed percentage increase in Standard Mail (A) Regular for pieces not subject to the Residual Shape Surcharge.
c. Please confirm that the POSTCOM proposed increase for non-destination entry Saturation letters is 15.4%. If you cannot confirm, please provide the percentage increase you are proposing for non-destination entry Saturation letters.
d. Please confirm that your proposed increase for non-destination entry Saturation letters exceeds the largest USPS proposed percentage increase in Standard Mail (A) ECR for pieces not subject to the Residual Shape Surcharge.

RESPONSE:

a. Confirmed. Note that this rate increase is only slightly higher than the increase that the Postal Service is proposing for DSCF entry 3/5-digit automation flats. To the extent that mitigating rate shock should be considered in rate design, I believe that a 15.8 percent rate increase for non-destination entry mail is an improvement over a 14.8 percent rate increase for DSCF entry mail because non-destination entry mailers have an opportunity to reduce their rate increase through increased worksharing.

b. Confirmed.

c. Confirmed. Note that non-destination entry saturation letters comprise only one percent of Standard (A) ECR volume.

d. Confirmed.

USPS/PostCom-T1-3. On page 10 of your testimony, you state that you developed MPA-LR-2 with Time Warner witness Stralberg. Please refer to the mail processing unit costs on the worksheet entitled 'CRA Cost Pools' within MPA-LR-2.

(a) Please confirm that these mail processing unit costs are identical to the mail processing costs on the worksheet entitled 'CRA Cost Pools' within USPS LR-I-90. If you do not confirm, please explain.
(b) Please confirm that these mail processing unit costs do not reflect any changes due to proposed volume variability, cost reduction program, cost allocation, or cost distribution differences from the Postal Service's proposal. If you do not confirm, please explain.
(c) Please confirm that, if these mail processing unit costs reflected any changes due to proposed volume variability, cost reduction program, cost allocation, or cost distribution differences from the Postal Service's proposal, then the proposed presort/automation cost differentials calculated from MPA-LR-2 would, in all likelihood, be different. If you do not confirm, please explain.

RESPONSE:

a. Confirmed.

b. Confirmed.

c. Confirmed. In particular, note that the CRA costs would increase if the Postal Rate Commission recommended using its traditional mail processing volume variability method.

USPS/PostCom-T1-4. Please refer to your testimony at page 7, at lines 20-22, where you state that "as described by witness Lubenow (PostCom, et al.-T-3), the Postal Service has not quantified all of the cost savings that result from the higher address quality that result directly from automation requirements."

(a) Please identify and describe each distinct component of cost savings that results from the higher address quality associated with automation requirements.
(b) Please quantify each distinct cost savings as a percentage of total mail processing costs and provide the supporting data, reports, or analyses. Show all calculations and provide citations for all figures used in your analysis.

RESPONSE:

(a)-(b) For examples of the activities necessitated by address deficiencies, please refer to PostCom/USPS-T-3 at 20-22. Also, refer to Section 3 of USPS-LR-I-82. While these activities will be performed for both automation and nonautomation flats, the higher address quality of automation flats will reduce the frequency with which these activities are performed for automation flats. I, like the Postal Service itself (PostCom/USPS-T10-9(h)), have not quantified the unit cost of all of the individual activities necessitated by address deficiencies.

USPS/PostCom-T1-5. Please refer to your testimony at page 17, at 14-16, where you state that "accounting for costs caused by address problems via the CRA cost adjustments essentially ignores them for the purpose of determining automation-related cost savings."

(a) Please quantify the percentage of total mail processing costs caused by address problems and provide the supporting data, reports, or analyses. Show all calculations and provide citations for all figures.
(b) Please identify each CRA mail processing cost pool that address problems affect.
(c) For each CRA mail processing cost pool identified in subpart (b), please quantify the percentage of the cost pool's total mail processing cost that is caused by address problems and provide the supporting data, reports, and analyses. Show all calculations and provide citations for all figures.

RESPONSE:

(a) In FY 1998, USPS accrued mail processing costs were approximately $14 billion. As I noted in my testimony, the Postal Service's UAA Study indicated that the FY 1998 cost of UAA mail is approximately $1.5 billion. USPS-LR-I-82 at 30. While not all of these costs are mail processing costs, this $1.5-billion cost figure represents more than ten percent of accrued mail processing costs. Because this study only addresses UAA mail, it is a conservative estimate of the total cost caused by poor address quality.

(b)-(c) I have not performed a detailed analysis of the costs caused by address deficiencies. The intent of the referenced statement was to rebut witness Yacobucci's contention (Tr. 5/1481) that differences in address quality are taken into account through the use of a CRA adjustment. As I noted in my testimony, this isn't the case. For 3/5-digit flats (which comprise the vast majority of Standard (A) Regular flats), the CRA adjustment increases the automation differential by less than 0.1 cent. To further illustrate this point, this amount represents less than one-tenth of a second of a clerk's time.

USPS/PostCom-T1-6. Please see your testimony at pages 10-13. You state that, for eligible Standard A Mail flats, 70 percent of incoming secondary processing should be on an FSM in the test year (IS factor), an increase of 20 percentage points over witness Yacobucci's LR-I-90 factor of 50 percent.

a. Please confirm that volume arrival and operation clearance times along with service standards (i.e. operating window) would have an impact on incoming secondary processing. If you do not confirm, please explain.
b. Please confirm that the distance of a delivery unit from a plant with an FSM may prohibit incoming secondary processing on a FSM in the plant in order to transport it to the delivery unit in time for delivery. If you do not confirm, please explain.

RESPONSE:

a-b. Confirmed for preferential mail. Please note that these factors are not as relevant for Standard A mail as for preferential mail because, as USPS witness Unger stated in his testimony, "time sensitivity is not as frequently a factor for Standard A mailings." USPS-T-43 at 6. For more detail on this point, please refer to Section C of witness Unger's testimony (USPS-ST-43).

Furthermore, as I calculated on pages 11-12 of my testimony, the Postal Service will have more capacity in the Test Year than they need to provide incoming secondary sorts on machines for all eligible flats in large zones. Because of this and the cost difference between FSM sorting and manual flat sorting, if the aforementioned factors are important for non-preferential mail (and therefore are even more important for preferential mail), I would expect that the Postal Service would appropriately use its FSM capacity to perform incoming secondary sorts on mailpieces destinating in small zones just as it did for the delivery point sequencing of letters. Kingsley, Tr. 5/1980.

CHAIRMAN GLEIMAN: Is there Additional Written Cross Examination for Witness Glick?

[No response.]

CHAIRMAN GLEIMAN: If not, counsel, I thank you again for your assistance.

MR. VOLNER: Thank you, Mr. Chairman.

CHAIRMAN GLEIMAN: Mr. Olson?

MR. OLSON: One moment.

CHAIRMAN GLEIMAN: One moment, okay, we'll give you a moment. We'll go off the record for just a moment.

[Discussion off the record.]

CHAIRMAN GLEIMAN: Mr. Olson, I believe you have the next witness.

MR. OLSON: Thank you, Mr. Chairman. On behalf of Val-Pak Direct Marketing Systems, Inc., Val-Pak Dealers Association, Inc., and Carol Wright Promotions, Inc., we would like to call to the stand Dr. John Haldi.

CHAIRMAN GLEIMAN: Dr. Haldi is already under oath in this proceeding several times over. I thought about swearing him in again today, and then transferring one of those to Witness Glick, but I am told by the General Counsel's Office that that doesn't work. So, we will just proceed when you are ready, Mr. Olson.

Whereupon,

JOHN HALDI,

a witness, having been recalled for examination and, having been previously duly sworn, was examined and testified further as follows:

DIRECT EXAMINATION

BY MR. OLSON:

Q Dr. Haldi, I would like to hand you two copies of what is identified as the direct testimony of Dr. John Haldi concerning Standard A Enhanced Carrier Route mail on behalf of Val-Pak, et al., designated as VP-CW-T-1, and ask you if this was prepared by you or under your direction and whether you adopt this as your testimony in this docket?

A Yes, it was and I do adopt it.

Q Okay. And could I also ask you if anything unusual happened in the last couple of days with respect to your preparation to go on the stand today causing you to develop an addendum to your testimony?

A Yes, it has. I think if I just were to read this into the record, hopefully, it will be self-explanatory. In final review of my direct testimony prior to appearance on the witness stand today, beginning late Tuesday and culminating late Wednesday, yesterday, I discovered that one portion of my testimony relies on information which I had understood and believed to be accurate at the time the testimony was submitted, but which I no longer believe to be a sufficiently reliable basis for a change in Postal Service

costing.

The subject is the letter-flat cost adjustment predicated on the existence of appreciable letter shaped pieces with a Detached Address Label, that is a DAL, in the mailstream.

While researching my testimony, I had received information that such mailings had occurred, at least in Houston, Texas, and was provided a copy a letter shaped mail piece which was said to have been accompanied by a DAL. I also received other anecdotal information concerning the existence of such pieces in the mailstream.

In my testimony, I propose that the Commission make an adjustment in letter-flat costs based on an estimate of the volume of such pieces which I developed. Before taking the witness stand, particularly in reviewing certain Postal Service interrogatories received, I endeavored to verify the information in my testimony regarding letter shaped pieces with DALs and to assemble other illustrations of such pieces.

Unfortunately, I have been unable to confirm to my satisfaction the information about letter shaped pieces with DALs on which I previously relied. In view of the short amount of time between the time remaining before taking the witness stand, I have been unable to revise -- strike the word "to" here -- to revise VP_CW-T-1 in a way that I would

have preferred.

Accordingly, I hereby withdraw the portions of my testimony which relate to letter shaped pieces with DALs and ask the Commission to give them no weight in determining costs in this docket. This would include entries at page 11 -- I will skip the line numbers here, pages 14, 15, page 17, page 18, page A1, page A7, page A9, page A11.

A number of my interrogatory responses must be viewed in the same light. In terms of the effect on my recommended rates in Table 7, page 56, this costing change requires that all recommended piece rates for nonletter, high density and saturation Standard ECR mail be decreased by one-tenth of one cent, i.e., the rates shown in rows 14, 15, 19, 20 should be decreased by one-tenth of one cent.

Nevertheless, I would recommend that the Postal Service develop an estimate of such volume of letter shaped pieces with DALs as may be in the mailstream. And if such mail pieces -- if such pieces constitute significant volume, to make necessary adjustments to IOCS tally procedures to ensure that pieces which would necessarily play the flat rate are not mischaracterized as letters.

Yesterday, I asked counsel for Val-Pak, Carol Wright to contact counsel for the Postal Service and for Advo, Inc., the two parties which have been interested in this issue, and advise them of this change in the testimony,

and I understand that those calls were made.

MR. OLSON: Mr. Chairman, I would confirm that I had notified Mr. Alverno and Mr. McLaughlin about the change, and the best news I can give you is that that results in much shorter cross-examination today than otherwise would have been necessary .

BY MR. OLSON:

Q Dr. Haldi, would you like to adopt that addendum as part of your testimony so that it would also be transcribed in the record?

A Yes, I would.

MR. OLSON: Mr. Chairman, with that, we would move the admission of the direct testimony of Dr. John Haldi, accompanied by the addendum.

CHAIRMAN GLEIMAN: Is there an objection? Mr. Alverno.

MR. ALVERNO: There is no objection, Mr. Chairman, but I simply have one request, and that is, given the time period in which we have had to deal with this particular change, we would simply request the right, or reserve the right to conduct limited cross-examination -- or written cross-examination I believe on lines 12 to 21 of page 2. I don't anticipate that there will be a need to do so, but in the event that there is, these deal with the page numbers that relate to the testimony that is being given no weight,

and also to the effect on the rates themselves.

CHAIRMAN GLEIMAN: Your rights are reserved in that regard, sir.

MR. ALVERNO: Thank you.

CHAIRMAN GLEIMAN: Having heard no objection, I will direct counsel to provide the reporter with two copies of the corrected direct testimony of Witness Haldi, and that testimony will be transcribed into the record and received into evidence.

[Direct Testimony of John Haldi, VP-CW-T-1, was received into evidence and transcribed into the record.]

VP/CW-T-1

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

POSTAL RATES AND FEE CHANGES, 2000) Docket No. R2000-1

Direct Testimony of

DR. JOHN HALDI

Concerning

STANDARD A ENHANCED CARRIER ROUTE MAIL

On Behalf of

VAL-PAK DIRECT MARKETING SYSTEMS, INC.,
VAL-PAK DEALERS' ASSOCIATION, INC., AND
CAROL WRIGHT PROMOTIONS, INC.

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Marketing Systems, Inc.,
Val-Pak Dealers Association, Inc.
and Carol Wright Promotions, Inc.

May 22, 2000

VP/CW-T-1

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

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May 22, 2000

CONTENTS

CONTENTS (cont.)

AUTOBIOGRAPHICAL SKETCH

My name is John Haldi. I am President of Haldi Associates, Inc., an economic and management consulting firm with offices at 1370 Avenue of the Americas, New York, New York 10019. My consulting experience has covered a wide variety of areas for government, business and private organizations, including testimony before Congress and state legislatures.

In 1952, I received a Bachelor of Arts degree from Emory University, with a major in mathematics and a minor in economics. In 1957 and 1959, respectively, I received an M.A. and a Ph.D. in economics from Stanford University.

From 1958 to 1965, I was an assistant professor at the Stanford University Graduate School of Business. In 1966 and 1967, I was Chief of the Program Evaluation Staff, U.S. Bureau of the Budget. While there, I was responsible for overseeing implementation of the Planning-Programming-Budgeting ("PPB") system in all non-defense agencies of the federal government. During 1966 I also served as Acting Director, Office of Planning, United States Post Office Department. I was responsible for establishing the Office of Planning under Postmaster General Lawrence O'Brien. I established an initial research program, and screened and hired the initial staff.

I have written numerous articles, published consulting studies, and co-authored one book. Items included among those publications that deal with postal and delivery economics are an article, "The Value of Output of the Post Office Department," which appeared in *The Analysis of Public Output* (1970); a book, *Postal Monopoly: An Assessment of the Private Express Statutes*, published by the American Enterprise Institute for Public Policy Research (1974); an article, "Measuring Performance in Mail Delivery," in *Regulation and the Nature of Postal Delivery Services* (1992); an article (with Leonard Merewitz), "Costs and Returns from Delivery to Sparsely Settled Rural Areas," in *Managing Change in the Postal and Delivery Industries* (1997); an article (with John Schmidt), "Transaction Costs of Alternative Postage Payment and Evidencing Systems," in *Emerging Competition in Postal and Delivery Services* (1999); and an article (with John Schmidt), "Controlling Postal Retail Transaction Costs and Improving Customer Access to Postal Products," in *Current Directions in Postal Reform* (2000).

I have testified as a witness before the Postal Rate Commission in Docket Nos. R97-1, MC96-3, MC95-1, R94-1, SS91-1, R90-1, R87-1, SS86-1, R84-1, R80-1, MC78-2 and R77-1. I also have submitted comments in Docket No. RM91-1.

I. PURPOSE OF TESTIMONY

This testimony has two purposes. The first is to propose several changes in the design of rates for the Standard A ECR Mail Subclass, based on analysis of the data and information presented by the Postal Service in this case. The effect of these changes is illustrated by developing a different set of ECR rates that yield the total revenue proposed by witness Mayes for the ECR Subclass. The second is to propose ECR rates that incorporate the above-cited rate design changes while setting a lower target revenue for the ECR Subclass than that proposed by witness Mayes.

II. INTRODUCTION

This testimony is presented on behalf of Val-Pak Direct Marketing Systems, Inc. ("VPDMS") and Val-Pak Dealers' Association, Inc., hereinafter collectively referred to as "Val-Pak," and Carol Wright Promotions, Inc., hereinafter referred to as "Carol Wright." As described more fully below, Val-Pak's mail primarily consists of letter mail sent at the Standard A Mail ECR Saturation rate, while Carol Wright's and Cox Sampling's mail consists of both letter and non-letter mail primarily sent at the Standard A Mail ECR High-Density rate.

VPDMS is the nation's largest firm in a subset of the hard-copy, direct mail cooperative advertising industry which is sometimes referred to as "coupons in an envelope." Carol Wright is one of the largest firms in this same market segment. Headquarter offices of all three companies are located in Largo, Florida. VPDMS and Carol Wright are wholly-owned subsidiaries of Cox Enterprises, Inc. of Atlanta, Georgia. Val-Pak and Carol Wright jointly mail over 700 million pieces annually.

VPDMS Mailing Practices

VPDMS entered 416 million pieces of its own mail in the United States in 1999, and is estimated to mail 450 million pieces during the year 2000. In

addition, it entered 27 million pieces under contract for various clients in 1999.

About 95 percent of VPDMS' mailings use letter-shaped number 10 envelopes, while about 5 percent use letter-shaped 6" x 9" envelopes. The average weight of a VPDMS piece is about 2.5 ounces. All are trayed by VPDMS for individual carrier routes and entered at the Standard A Mail ECR Saturation Rate.

In business for over 30 years, VPDMS operates throughout the United States through approximately 210 U.S. franchisees which are members of the Val-Pak Dealer's Association, Inc. The work of these franchisees is supplemented by efforts of approximately 1,200 sales representatives.

VPDMS' mailings reach 47.7 million households and over 1 million businesses in the United States each year. Its mailings can be highly targeted to meet the marketing needs of even the smallest retail businesses. This is accomplished by Val-Pak's geographic advertising plan, which divides the country into thousands of "Neighborhood Trading Areas" ("NTAs"), most consisting of approximately 10,000 residences. These NTAs are built around neighborhood purchasing patterns, taking into account factors such as traffic zones and natural barriers, such as rivers. Through this NTA construct, businesses can precisely target for advertising purposes those geographic market segments that are most economically attractive. Advertisers may

purchase coverage for the entire nation, or any number of NTAs, from several thousand down to only one.

Most franchisees mail at least eight times per year, with many offices mailing on a monthly schedule.

Each year, over 130,000 individual advertisers purchase saturation advertising with VPDMS. Some of these advertisers are national or regional businesses, but the vast majority are small, local businesses.

Once an advertiser places an order with a VPDMS franchisee for distribution of a particular coupon to a particular geographic area with a particular frequency, the order is directed to Val-Pak's corporate headquarters in Largo, Florida. There, the graphics for the coupon are created. VPDMS fashions as many as one quarter million advertising layouts each year.

After review and approval by the advertiser, the coupons are printed in either Largo, Florida or Las Vegas, Nevada (for 11 western states). Printing may be simple, involving only one color, or may involve sophisticated four-color printing.

VPDMS has been encouraged by the Postal Service to put delivery point barcodes on all of its mail. At present, 100 percent of VPDMS' mail is Delivery Point Barcoded. VPDMS incurs additional computer charges as a result of adding the delivery point barcode to mailing lists that have only ZIP

+ 4 information. VPDMS works closely with firms supplying mailing lists to ensure that it buys the cleanest and most up-to-date lists available anywhere. For example, when the Postal Service changes boundary lines, these lists are updated by list companies supplying VPDMS within the next bimonthly update from the Postal Service.

Also, for 10 years, VPDMS has participated voluntarily in Postal Service tests, such as those involving traying letter-shaped carrier route mail and palletizing trays, despite the fact that these procedures have caused VPDMS to incur additional costs. VPDMS has been a national test site for such tests. Since such traying became mandatory, VPDMS has been in full compliance.

Virtually all of VPDMS' mail is transported by truck at VPDMS' expense, of which 97 percent is entered at the destinating SCF. Of the remainder, 2 percent is entered at BMCs, with about 1 percent of the mail being entered locally, in either St. Petersburg, Florida or Las Vegas, Nevada.

VPDMS advertisers require that the Val-Pak mail be delivered in a timely fashion. For example, if a pizza carry-out firm issues $1-off coupons to be delivered during a particular week, it must anticipate the additional business generated by purchasing additional ingredients and hiring additional staff. If the mail is delivered too early, the client may not be

prepared, or if late, the extra ingredients can be wasted and the staff can stand idle.

Several other national and regional firms around the country are known to operate in a manner similar to that of Val-Pak. Money Mailer of Manhattan Beach, California, is believed to be the second largest such firm, followed by many others, such as Super-Coups in Boston, Massachusetts, United Coupon in Springfield, Virginia, and Tri-Mark in Wilmington, Delaware. Many other competitors operate only in limited geographic markets.

Carol Wright Mailing Practices

Carol Wright is located in Elm City, North Carolina. Its mail consists of approximately 20 million envelopes containing cooperative advertisements sent 11 times per year to households throughout the United States. Carol Wright mailed 200 million pieces in 1999, and is estimated to mail 200 million pieces again in 2000. These mailings consist of shared mail advertisements and coupons for national and regional account customers of Carol Wright.

The Carol Wright cooperative mailings generally use 6" x 9" envelopes. The weight of a piece typically ranges between 2 and 4.5 ounces, with an average weight of 2.8 ounces.

Carol Wright's primary customer base differs from Val-Pak's in that it serves the major packaged goods manufacturers and direct response companies, whereas Val-Pak's primary customer base is comprised of local retailers reached through a network of franchisees.

The Carol Wright Cooperative Mailing Program offers customers highly targeted geographic and demographic distribution of their marketing message by means of distribution segments based on a market structure which is also divided into retail trade zones.

Timeliness of delivery is also a major concern for Carol Wright and its customers. All Carol Wright cooperative mailings have a four-day delivery target window, usually Monday through Thursday. Carol Wright customers depend on and demand that this standard be met. In many cases, customers have other promotional efforts such as radio, television, and in-store promotions scheduled to occur in conjunction with the distribution of Carol Wright cooperative mailings. Retailers also depend on timely delivery, so that they will be prepared with sufficient shelf stock and store staffing.

Carol Wright, in conjunction with the Postal Service, participates in the voluntary "Advance Notification and Tracking System" program. That program enhances Carol Wright's worksharing efforts by alerting postmasters of the impact which Carol Wright cooperative mailings may have on that week's work load for the Postal Service.

III. DESIGN OF STANDARD A ECR RATES TO MEET THE POSTAL SERVICE'S PROPOSED ECR REVENUE TARGET

This part of my testimony develops alternative rates for Standard A ECR Mail which are designed to achieve several important objectives. For reasons explained below, they depart from the rate design of witness Moeller (USPS-T-35) in these important ways:

- Letter-flat differentials are increased to correct for a misstatement of costs that arises from inconsistencies between the way data are recorded by the Inter-Office Cost System ("IOCS") and the Revenue, Pieces and Weight ("RPW") system.

- The pound rate is not dramatically reduced due to the unreliability of the weight-cost studies used by the Postal Service to support its proposed reduction.

- The passthrough for destination entry discounts is maintained at the Commission's previously approved rate of 85 percent.

In order to illustrate clearly the effect of these changes, rates have been designed using (i) the same formula employed by witness Moeller and the Commission, and (ii) the Test Year After Rates revenue target of $5,162 million proposed by witness Mayes (USPS-T-32), which represents an

average rate increase for the ECR subclass of 4.9 percent.[1] The departures from witness Moeller's rate design, as well as the reasons for those differences, are explained herein.

A. The Postal Service's Calculated Cost of Letters is Overstated and the Cost of Flats is Correspondingly Understated

Within Standard A Mail, Postal Service data systems systematically overstate the cost of letters while the cost of flats is correspondingly understated. This situation is caused by a mismatch between (i) the way the RPW system records revenue, volume and weight on the one hand, and (ii) the way that the IOCS develops mail processing and city carrier in-office costs on the other. This mismatch biases the letter/nonletter cost differentials used for ratemaking within all four Standard A subclasses. As explained below, the mismatches between revenues and costs arise from two separate practices:

- **Overweight letters**: the IOCS misclassifies as letters pieces that have letter-shaped dimensions but weigh in excess of 3.3 ounces, pay the pound rate, and are therefore entered for revenue purposes as nonletters.

- **Detached address label ("DAL") letter-shaped mailings**: the IOCS misclassifies as letters mailings of letter-shaped pieces accompanied by a DAL.

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[1] USPS-T-32, Exhibit USPS-32B, p. 1.

1. Overweight letters. Letter-shaped pieces that weigh in excess of the weight breakpoint (approximately 3.3 ounces) are required to pay nonletter-shaped mail rates.[2] In other words, all such pieces are entered in Part D of Form 3602, which consists generally of flats. The RPW system may therefore record the revenues, pieces and weight as **nonletters,** even though all such pieces meet the Domestic Mail Manual's ("DMM's") height, length, and width dimensions for letters. From a rate category perspective, data in the RPW are recorded correctly, because these overweight pieces pay the nonletter rate. The IOCS, on the other hand, conforms with DMM definitions. Consequently, whenever such mail is tallied, it is recorded as **letter-shaped** (unless the thickness happens to exceed 0.25 inches), and the costs are subsequently assigned to letter-shaped mail. From a rate category perspective, the IOCS data are not correct.[3] The fact that definitions in the DMM are not in sync with definitions used for ratemaking purposes or the RPW represents a fundamental problem with the Postal Service's data systems, at least with respect to the ratemaking process.

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[2] *See* Response to VP-CW/USPS-T5-3 (Tr. 2/846).

[3] The way Standard A Mail is entered on Form 3602 and recorded in the RPW system needs to be conformed with the IOCS instructions in Handbook F-45, In-Office Cost System, Field Operating Instructions (USPS-LR-I-14). USPS witness Ramage recognizes the inconsistency between the two systems, but opines that it might be easier to change the RPW System than the IOCS (*see* Response of witness Ramage to Question Raised by OCA During Hearings, filed April 18, 2000).

Recording the revenues, pieces and weight of an identifiable subset of mail as nonletters while systematically charging the costs of that mail to letters obviously results in a mismatch of the data. The effect is to misstate the unit costs of both letters and nonletters. Computation of unit cost for letters and flats is straightforward; *i.e.*,

$$\text{Unit Cost} = \frac{\text{Total Cost}}{\text{Total Volume}}$$

Within the **letters** category, IOCS tallies of overweight pieces misclassified as letters increase the numerator (total cost) of the fraction used to compute unit costs while the RPW system fails to record any corresponding increase to the denominator (total volume), thereby incorrectly increasing and overstating the unit cost of letters.

The reverse is true for **nonletters**. Within the nonletters category, the RPW system includes such heavy-weight nonletters in the denominator (total volume), while the IOCS fails to record such pieces (when tallied) in the numerator (total cost) of the fraction, thus incorrectly reducing and understating the unit cost of nonletters. The following schema is designed to help visualize what happens when the IOCS fails to classify pieces in conformity with the RPW System. The costs for letters increases while the nonletter costs are concurrently understated.

Unit Cost for Letters *(▲ increases)*	Unit Cost for Nonletters *(▼ decreases)*
Total Cost (▲)	Total Cost (▼)
----------	----------
Total Volume	Total Volume

2. Detached address labels. When a detached address card is being cased, the IOCS tally clerk is instructed to "always use the accompanying mailpiece to determine shape."[4] Following these instructions, when the accompanying mailpiece is letter-shaped, the IOCS will record the piece as such, and costs will accrue to letter-shaped mail. At the same time, however, under Postal Service regulations, **letter rates cannot be paid for letters with detached address labels ("DALs"),** so all Standard A Mail entered with DALs must pay the nonletter rate.[5] Thus, on Form 3602, all DAL mailings are entered as nonletters, regardless of the DMM definition of shape; hence the RPW system appropriately records the revenues, pieces and weight as nonletters. This clearly results in another serious mismatch, since costs of DAL-accompanied letter-shaped mail are systematically charged to letters, while revenues, pieces and weights are systematically charged to

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[4] USPS-LR-I-14 (Handbook F-45), pp. 12-11; *see* response to VP-CW/USPS-T5-1(c) (Tr. 2/843-44).

[5] Response to VP-CW/USPS-T10-7 (Tr. 5/1932).

flats. Again, the RPW data reflect the correct rate category information, while the IOCS data do not.[6] The net result is exactly the same as with overweight letters; *i.e.*, it systematically increases the unit cost of letters, while reducing the unit cost of flats.

3. Adjustments to unit costs and letter/nonletter differentials. The two mismatch problems discussed here are fundamental to the different ways that the RPW System and IOCS record data. Consequently, the data for Standard A Mail in Docket No. R97-1 also reflect the same biases. The unit cost data in Docket No. MC95-1, however, were not similarly biased because their unit cost development was not based on IOCS, relying instead on modeled cost. These systematic biases in the underlying cost data identified above probably explain much or all of the apparent decline, heretofore unexplained, in the shape-based cost differentials since Docket No. MC95-1.

Because of the two mismatch problems, the unit cost of letters is clearly overstated and the unit cost of flats is correspondingly understated, and an appropriate adjustment therefore needs to be made to the unit cost differential for shape. As explained below, data exist for making an

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[6] The way Standard A Mail is entered on Form 3602 and recorded in the RPW system needs to be conformed with Handbook F-45 (USPS-LR-I-45) so that IOCS clerks, when tallying an employee handling a detached address card, will record the shape in a consistent manner.

adjustment on account of overweight letters, but data on the volume of DAL mail in Standard A do not exist.[7]

4. IOCS Tallies of Overweight letters. The number of IOCS tallies for all Standard A ECR letters, by pertinent weight range, is shown in Appendix A, Table A-1. The number of tallies for letters in the 3.0 to 3.5 ounce weight range is shown (183 tallies), but the number of tallies for letters above and below the 3.3 ounce breakpoint is not known precisely. Allocating 60 percent of these tallies to the 3.0 to 3.3 ounce range and 40 percent to the 3.3 to 3.5 ounce range, this mismatch cost is conservatively estimated at about 2.6 percent of the total cost attributed to letters.[8]

As no information is available concerning the presort condition of overweight letters, the adjustment to the letter-flat cost difference is distributed uniformly over Standard A ECR Basic, High-Density and Saturation presort categories. The computed adjustment to the letter flat unit cost differential is shown in Appendix A, Table A-2.

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[7] *See* response to VP-CW/USPS-T5-1(c) and 2 (Tr. 2/843-45).

[8] An alternative estimate, based on volume data used by witnesses Daniel (USPS-T-28) and Moeller (USPS-T-35), indicates that ECR pieces with letter-shaped dimensions (per the DMM) and weighing over the 3.3 ounce breakpoint may constitute as much as 17 percent of total ECR "letters." The total cost assigned to "letters" on account of these heavy-weight pieces would be even higher, assuming that their extra weight causes some costs to be incurred. *See* Appendix A for further discussion.

5. Letter-shaped pieces with DALs. Unlike the situation with overweight letters, no information is available on the volume or presort category of DAL mailings within Standard A ECR where the mailpiece itself has all letter-shape dimensions.[9] Yet such mailings clearly exist within ECR.[10] Moreover, the volume of individual DAL mailings could be substantial, inasmuch as some of the largest ECR mailers in the country are well known for use of DALs on a regular basis. Under the circumstances, and until the Postal Service can achieve consistency in its data systems which underlie the computation of unit cost for individual rate categories, some adjustment not only is appropriate, but required. Accordingly, I have conservatively assumed that only 1.0 percent of the total ECR flats volume in FY 1998 consisted of mismatched DAL mailings. The relatively minimal adjustment to the unit cost of letters and flats is shown in Appendix A, Table A-2. For the reason stated above, the resulting adjustment is also applied uniformly over all presort categories.[11]

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[9] *See* response to VP-CW/USPS-T5-2 (Tr. 2/843).

[10] *See* Moeller cross-examination exhibit VP-Moeller-XE-1 (Tr. 10/4137-38).

[11] The Postal Service calculates the letter/nonletter differential for High-Density at 0.280 cents, and for Saturation at 0.478. No explanation is offered as to why the calculated Saturation differential is 70 percent greater than the High-Density differential. If the Postal Service implements the necessary changes to the IOCS to eliminate the mismatch problem, the rather large difference in these shape differentials may be reduced or

(continued...)

The combined result of the two adjustments is to increase the letter/nonletter differentials by 0.466 cents, as follows (cents):

Presort Category	USPS Letter-Flat Differential	Adjusted Letter-Flat Differential
Basic	1.790	2.256
High-Density	0.280	0.746
Saturation	0.478	0.944

B. Studies of the Weight-Cost Relationship Are Not Adequate to Support a Reduction in the Pound Rate

For reasons explained more fully in Appendix B, studies of the weight-cost relationship offered by the Postal Service in this docket must again be rejected as inadequate to demonstrate that the effect of weight on costs is overstated.[12] They provide no basis for the Commission to recommend a drastic reduction in the pound rate as requested by the Postal Service. Accordingly, I propose that the ECR pound rate be set at $0.661, which is slightly less than the existing rate and is equal to the same rate proposed by

[11](...continued)
eliminated. Until better data become available, a uniform adjustment over the different presort categories would appear to be the most appropriate alternative.

[12] *See* USPS-T-28 (witness Daniel) and the library references cited therein.

witness Moeller for the Standard A Regular Subclass.[13] Retaining the pound rate at close to its present level, while increasing all piece rates by an amount sufficient to provide a 4.9 percent increase in revenues from the ECR Subclass, produces a decrease in the pound rate relative to the piece rate. Moreover, for reasons explained in the next subsection, I propose an increase in the passthrough for destination entry worksharing discounts, which further reduces the actual rates paid by ECR nonletter mailers who enter their mail at destination facilities.

C. The Passthrough for Destination Entry Discounts Should Be Increased

In Docket No. R97-1, the Commission established the passthrough for destination entry discounts at 85 percent of avoided costs. For reasons explained here, I propose that in this docket the passthrough either be maintained at a level of 85 percent or raised higher. My testimony is limited to design of rates for Standard A ECR Mail. Nevertheless, I would suggest that this 85 percent passthrough and the resulting destination entry discounts be applicable to all Standard A Mail, as has been the custom in

[13] Should the Commission adopt witness Moeller's proposed pound rate of $0.661 for the Regular Subclass, rather than the current $0.663, the rate proposed here will avoid having the anomalous situation of an ECR pound rate which exceeds that of the Regular Subclass.

prior dockets, and as the Postal Service proposes to continue in this docket.[14] Applying an 85 percent passthrough to the avoided costs developed by witness Crum[15] results in the destination entry discounts shown in Table 1.

Table 1

Standard A Mail
Proposed Destination Entry Discounts

Entry Point	(1) Costs Avoided ($ per lb.)	(2) Pound Rate	(3) Piece Rate[1]
DBMC	$0.114	$0.097	$0.020
DSCF	0.140	0.119	0.025
DDU	0.173	0.147	0.030

[1] Computed at 3.3 ounces.

Witness Moeller proposes a passthrough for destination entry at DBMCs that is 4 percentage points less than the passthrough for destination

[14] For reasons discussed here and in Appendix B, a passthrough of more than 85 percent would be warranted for Standard A ECR Mail. Since this testimony makes no attempt to design rates for any of the other three Standard A subclasses, the impact on those subclasses of a passthrough greater than 85 percent has not been investigated here.

[15] USPS-T-27, Attachments B and C.

entry at DSCFs and DDUs.[16] My proposal would maintain a uniform passthrough for all destination entry points because I can find no rationale that supports a reduced passthrough for those mailers who lack sufficient volume to ship deeper into the Postal Service network. In my view, fairness and equity dictate that the basis used to determine the incentives offered to mailers who enter mail at DBMCs should be on par with the basis that underlies the incentives offered to mailers who enter mail at DSCFs and DDUs, and who have the larger volumes typically required to justify entering mail deeper into the postal network.

Since the rates in the previous case (and the underlying rationale for those rates) are presumed to be fair and equitable, justification is needed for a departure from the established precedent. In Docket No. R97-1, the Commission used an 85 percent passthrough to establish destination entry discounts for Standard A Mail. Witness Moeller provides no justification for his systematic reduction in the 85 percent passthrough. In fact, his testimony focuses solely on the absolute amount of the discount (and changes in the absolute amount), and does not even discuss the 85 percent standard adopted by the Commission.

Several good reasons support maintaining the passthrough for destination entry discounts at 85 percent. One is that weight-related costs

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[16] USPS-T-35, pp. 14-16.

are almost surely avoided by presortation.[17] However, the per-piece presort discounts do not recognize or reward any such cost avoidance, and it is not possible even to contemplate adding a weight-related component to the presort discounts because the Postal Service's weight-cost studies are incapable of estimating cost avoidance due to presort. The deeper that mail is entered into the Postal Service network, the more highly presorted it is, almost by definition. Although it is not possible in this docket to recognize any weight-related cost avoidance from presortation, maintaining the destination entry passthrough at least equal to 85 percent of avoided cost gives recognition to cost avoidance that is documented to be weight-related.

Another reason is that Standard A mailers respond to such discounts. In FY 1998, the amount of all Standard A Mail that received destination entry discounts was 62 percent by volume, and 71 percent by weight.[18] This level of destination entry indicates that a private sector freight consolidation network now exists to complement the Postal Service's own transportation network. It also indicates that a substantial percentage of all Standard A mailers find competitive private sector transportation more advantageous, since only 38 percent of Standard A volume (and 29 percent by weight) uses the Postal Service for transportation from originating entry points.

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[17] *See* Appendix B for an explanation of the underlying rationale.

[18] USPS-LR-I-125, FY 98 Billing Determinants, Section G-6, p. 5 (data are for Commercial and Nonprofit combined).

Maintaining the passthrough at a level at least equal to 85 percent will retain the incentive for Standard A mailers to continue taking advantage of destination entry discounts, and also will retain the incentive for transportation companies, including those that specialize in consolidating shipments. Growth of this competitive private sector transportation network has benefitted mailers and the Postal Service by helping to hold down the total cost of mailing, and nurturing this network can be viewed as an important step to help keep mail competitive with other media.

A further reason which supports maintaining the passthrough at 85 percent or higher is that the Postal Service's projected Test Year increase in highway costs over FY 1998, 27.6 percent,[19] may be understated in light of recent increases in the cost of oil. The Postal Service is asserted to be facing a $300 million increase in transportation cost over Base Year because of increasing fuel costs.[20] Higher transportation costs increase the cost avoidance from destination entry. Worksharing discounts that reflect such increased cost avoidance have higher value.

Yet another reason for maintaining the passthrough at 85 percent is the Postal Service's continuing inability to increase its efficiency and total factor productivity ("TFP"), to keep cost increases well below the level of

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[19] USPS-T-27, Attachment B, Table 5.

[20] USPS, April 4, 2000, Release No. 25, citing then-Chief Financial Officer and Executive Vice President Richard Porras.

inflation, and to provide mailers with the efficient and economical management which they deserve. A higher passthrough is fully consistent with the principle of efficient component pricing. Increasing passthroughs and worksharing discounts will encourage more private sector participation. Admittedly, it may also add slightly to the rate increases for those mailers who do little or no worksharing. But artificially holding down the level of worksharing discounts sends the wrong signals to high-cost mailers, does nothing to promote social efficiency, and helps perpetuate the Postal Service in its inefficient ways.

Maintaining the passthrough at least equal to 85 percent and offering discounts for destination entry which are deeper than those proposed by witness Moeller will provide benefits to every category of Standard A ECR Mail, most especially to nonletter-shaped mail entered at the pound rate.[21] If the pound rate is set at $0.661 as I propose, my proposed discount of $0.147 per pound for DDU entry (up from the current discount of $0.126 per pound) reduces the net pound rate from $0.537 to $0.514, a decrease of 4.3 percent. In light of the fact that the entirety of the 4.9 percent increase in revenues must be derived from the piece rate in this case, and under witness Moeller's proposal some piece rates for Standard A Mail could increase by as much as 9

[21] Of pound-rated Standard A ECR Mail, 96.3 percent (by weight) receives a destination entry discount. USPS-LR-I-125, FY 98 Billing Determinants, Section G-3, pp. 1-2.

or 10 percent, such a reduction would appear to be adequate, if not more than adequate, at this time.[22]

D. Other Passthrough Adjustments

If an average rate increase of 4.9 percent is to be imposed on the ECR subclass, a fair and equitable starting point for rate design would be an across-the-board increase by the required amount. However, maintaining the pound rate essentially unchanged negates even the possibility of such an across-the-board increase. In order to help spread the effect of the rate increase proposed by witness Mayes more evenly, two further changes have been made to witness Moeller's rate design. First, the letter/nonletter passthrough for High-Density mail is increased from 65 to 95 percent (the same passthrough as witness Moeller recommends for Saturation ECR Mail). Second, the presort passthrough for High-Density mail is increased from 125 to 140 percent. This helps to offset the fact that the Basic letter rate is set equal to the rate for Basic nonletters.

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[22] The corresponding reductions for DSCF and DBMC entry are 3.4 and 3.7 percent, respectively.

E. Initial Standard A ECR Rates

The effect of the rate design changes described above is shown in the rate schedule in the top portion of Table 2. The rate for Basic letters remains unchanged from the rate proposed by witness Moeller, at 17.5 cents. The percentage changes of each rate cell from current rates are shown in the bottom portion of Table 2. The maximum increase is 8.0 percent (and not 10.0 percent, as with witness Moeller's proposed rates).

Table 2

Standard A ECR Rates Resulting from Proposed Changes in Rate Design
(dollars)

		Destination-entry		
		BMC	SCF	DDU
Letters:				
Basic	0.175	0.155	0.150	0.145
Automation	0.163	0.143	0.138	0.133
High Density	0.149	0.129	0.124	0.119
Saturation	0.140	0.120	0.115	0.110
Non-Letters (pc-rated):				
Basic	0.175	0.155	0.150	0.145
High Density	0.156	0.136	0.131	0.126
Saturation	0.149	0.129	0.124	0.119
Non-Letters (lb-rated):				
per piece:				
Basic	0.039	0.039	0.039	0.039
High Density	0.020	0.020	0.020	0.020
Saturation	0.013	0.013	0.013	0.013
per pound:				
Basic	0.661	0.564	0.542	0.514
High Density	0.661	0.564	0.542	0.514
Saturation	0.661	0.564	0.542	0.514

Table 3

Percentage Changes from Current Rates Resulting from ECR Rates with Proposed Changes in Rate Design

			Destination-entry		
			BMC	SCF	DDU
Letters:					
	Basic	8.0%	6.2%	6.4%	6.6%
	Automation	4.5%	2.1%	2.2%	2.3%
	High Density	7.2%	4.9%	5.1%	5.3%
	Saturation	7.7%	5.3%	5.5%	5.8%
Non-Letters (pc-rated):					
	Basic	8.0%	6.2%	6.4%	6.6%
	High Density	3.3%	0.7%	0.8%	0.8%
	Saturation	6.4%	4.0%	4.2%	4.4%
Non-Letters (lb-rated):					
	per piece:				
	Basic	56.0%	56.0%	56.0%	56.0%
	High Density	42.9%	42.9%	42.9%	42.9%
	Saturation	333.3%	333.3%	333.3%	333.3%
	per pound:				
	Basic	-0.3%	-3.4%	-3.7%	-4.3%
	High Density	-0.3%	-3.4%	-3.7%	-4.3%
	Saturation	-0.3%	-3.4%	-3.7%	-4.3%
Example: 8-oz piece					
	Basic	3.6%	1.3%	1.1%	0.9%
	High Density	1.4%	-1.3%	1.5%	-1.9%
	Saturation	2.7%	0.0%	-0.2%	-0.6%

IV. DESIGN OF STANDARD A ECR RATES TO MEET A REDUCED REVENUE TARGET

This Section explains the development of my proposed rates for Standard A ECR Mail. The Postal Service's revenue target for ECR, provisionally used to isolate and illustrate the modifications discussed in Section III of my testimony, is herein reduced by $177 million, or 3.4 percent, below the $5,283 million TYAR target proposed by witness Moeller following Mayes.[23] The key changes are:

	Revenue ($, million)	Coverage (Percent)
USPS (Mayes/Moeller)	5,283	209
Alternative proposed	5,106	202
Difference	177	7

The proposal here reduces minimally the existing, very high coverage of ECR recommended by the Commission in its *Opinion and Recommended Decision* in Docket No. R97-1, by 1.0 percent, whereas witness Mayes proposes to raise it even higher.

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[23] There is a slight discrepancy between the cost figures of witness Mayes and witness Moeller: 2471.864 vs. 2466.132. These costs are expanded by a contingency allowance of 2.5 percent. Mayes uses a coverage of 208.8, Moeller a coverage of 209.0. Mayes' final revenue requirement is 5290.283; that of Moeller, 5283.071. The figure adopted here is that of Moeller, which he has used in his detailed rate design for ECR.

The proposed rates generating the above revenue target retain the same basic rate design features discussed in the prior section; that is: (i) adjustment of the letter/nonletter differential for mismatches between the RPW system and the IOCS; (ii) passthroughs at 85 percent for destination entry discounts; and (iii) a pound rate of $ 0.661.

It is not necessary to consider raising any other rates to offset ECR revenue reductions, because I consider the Postal Service's revenue requirement to be excessive. In particular, the requested contingency allowance of 2.5 percent is too high. It represents an astonishing 46 percent of the proposed increase to the revenue requirement. Reducing the revenue requirement to a reasonable level provides a substantial margin of relief, especially for those products that do not deserve the proposed rate increases. The following discussion explains why, within Standard A, ECR is most deserving of such relief.

A. The Proposed Contingency is Too High

Historically, the contingency provision has served two purposes: (1) to provide insurance against a test year deficit resulting from possible forecasting errors whose cumulative effect would be to underestimate the Postal Service's operating profit, and (2) to help offset truly unforeseeable

events that, by definition, are not capable of being forecasted and which could not be prevented through honest, efficient, and economical management.[24]

The Postal Service, by its own admission, has added significantly to its forecasting capabilities. According to witness Tayman, in Fiscal Year 1999 the Postal Service created a new forecasting organization within its Finance function, which added new people and focused existing personnel on the forecasting process.[25] Moreover, the Postal Service's forecast for FY 1999 results is, on net balance, sufficiently close to the mark that a contingency fund of $1.7 billion would appear to be far more than adequate. Given the Postal Service's improved forecasting capability, it should not need such a large contingency to insure against forecast error.

If the Postal Service's forecasts turn out to be accurate, and if the cumulative effect of unforeseeable events turns out to have no effect on Postal Service finances (*i.e.*, if the pluses from unforeseeable events balance out the minuses), the Postal Service should have a Test Year surplus equal to the amount of the contingency plus the amount budgeted for recovery of prior years' losses. This amounts to quite a substantial sum.

1. The Postal Service has ample authority to borrow for capital improvements. Whatever surplus is generated by the amount of

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[24] *See Op. & Rec. Dec.*, Docket No. R84-1, at ¶ 1017.

[25] *See* response to ANM/USPS-T9-9 (Tr. 2/146).

the contingency approved by the Commission will be available to finance in part the Postal Service's capital improvements program. Moreover, according to the Postal Service's Annual Reports, during the last six years it has reduced outstanding debt by $3.8 billion, from $9.2 billion at the end of FY 1992 to $5.9 billion at the end of FY 1998, while continuing to record net capital investment on its books.

The Postal Service is not required to fund its capital improvements in advance, through retained earnings, or on a pay-as-you-go basis. It has ample borrowing authority, at highly favorable government rates, to fund its capital improvements program over the same period that the new equipment is deployed and put into service. Despite all of the publicity that has accompanied its automation program, according to witness Tayman the Postal Service has never exceeded its annual statutory borrowing limit. (Tr. 2/177). And its outstanding debt at the end of FY 1998 was less than 40 percent of the aggregate statutory limit of $15 billion.

If the Postal Service's capital improvement program were approaching the statutory cap with respect to its borrowing limit, and any shortfall in cash flow would operate to curtail that program, there could indeed be a reason for a significant contingency allowance. But this simply is not now, and actually has never been, the case. Until the Postal Service accelerates its capital improvement program, net capital investment (*i.e.*, investment in

excess of depreciation and amortization) should be funded over time through conventionally employed borrowing, not through surpluses intentionally created by a deliberately excessive allowance for contingency.

2. The RPYL mechanism operates as a retrospective contingency allowance. The Postal Reorganization Act expressly envisions a contingency allowance, but it does not provide any mechanism for recovery of prior years' losses ("RPYL"). Without the RPYL mechanism, it would be imperative that the Postal Service achieve financial break-even during the Test Year, otherwise it would be seriously disadvantaged by any shortfall. The RPYL mechanism acts, however, as a retrospective contingency mechanism, backstopping and taking over much of the function of the contingency fund. With the RPYL mechanism firmly established, it is not necessary to be overly conservative about protecting against any shortfall during the Test Year via a large prospective contingency. In essence, the retrospective contingency protection of the RPYL mechanism largely fulfils the requirements of the Act. Moreover, as discussed below, too large a contingency factor may, over the long run, be self-defeating.

3. The contingency itself should never be a major factor driving rates higher and volumes lower. Under the universal service obligation as it presently exists, the Postal Service provides delivery six days a week to most addresses in the country. The fixed costs of this delivery

network are large. To help spread these fixed costs and keep rates affordable to all, the Postal Service requires large volumes of mail. Recently, the Postal Service, the Commission, the GAO, and others have rightly expressed concern about the prospect of major future declines in volume. Particular concern exists about electronic information transfer applied to bill presentment and bill payment, which threatens to cut seriously into First-Class Mail volume. This development threatens serious erosion of the *monopoly protection* provided by the Private Express statutes. Also of concern, though involving smaller total volumes, are the very high coverages and rates assigned to mail products of relatively high elasticity, such as ECR and Priority Mail, which bear a disproportionate burden of institutional costs.

Every rate increase, however small, contributes to driving volume out of the system. It may be objected that mail products, even the relatively elastic ones, have elasticities below unity in absolute value; therefore, rate increases will raise, rather than depress, postal revenues.[26] This is true in the short run, but fails to account for technological change that occurs in the longer run. The higher the rates, the more likely they are to stimulate innovations in competing activities that the Postal Service has difficulty

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[26] Technical issues connected with the definition of elasticity and its magnitude are discussed further below.

following or offsetting. Past experience indicates that markets, once lost, are seldom, if ever, recaptured by the Postal Service.

In order to preserve necessary volume, the Postal Service needs to keep rate increases to an absolute minimum. It is a truism, of course, that a prospective contingency allowance contributes to current rate increases, leading to volume declines.

What needs to be recognized explicitly in this case is the extent to which the proposed prospective contingency is driving not only the proposed rate increases, but also the volume declines projected to occur because of the rate increases. Table 4 illustrates the point. As can be seen from the last three rows of Table 4, almost half the rate increase, an astonishing 46 percent, is driven by the prospective contingency factor. The 2.5 percent prospective contingency is also the factor that drives the proposed rate increase above the rate of inflation.

For these reasons, the proposed prospective contingency is not only high, but also counter-productive to sound management of the Postal Service. It superficially appears to provide the Governors with additional cash, as a cushion against inflation, enabling them to defer the next rate case. Yet, in reality, it does just the opposite. By driving up postal rates across the board faster than the rate of inflation, it stimulates the kind of competition that is based on innovations both in information technology and in more traditional

arts. With the current extremely rapid pace of technological and institutional changes in the private sector, the initial revenue increases provided by higher postal rates can easily turn into painful market losses even before the next rate case. Thus, a higher contingency allowance leads to a counter-intuitive result. Instead of providing a cushion that would delay the need for the next rate case, it can actually hasten the day when yet another rate increase, also above the rate of inflation, will be needed.

I suggest that the Commission limit the prospective contingency to no more than 20 to 25 percent of the projected shortfall without any contingency; *i.e.*, to between $400 and $500 million in this case, with the proviso, in conformity with established practice, that any shortfalls which actually materialize beyond that amount be made up through the retrospective contingency RPYL mechanism.

I also suggest that at least $177 million of any such reduction (*i.e.*, $1,200 million to $1,300 million) in the revenue requirement be directed to reducing the unit contribution demanded of ECR mail, for reasons discussed below.

Table 4

Role of the Contingency in Driving Rate Increases
and Volume Declines

	Amount ($, 000)	Dist.
Test Year Costs:		
Cost Segments	68,046,556	
RPYL	268.257	
	68,314,813	
Less: Test Year Revenue Before Rates	-66,328,401	
Shortfall Without Contingency	1,986,412	53.9%
Contingency Before Rates	1,701,164	46.1%
Increase in Revenue Requirement	3,687576	100.0%

Sources: Test Year Costs and Contingency, USPS-T-9, p. 22, Table 15.
Test Year Revenue Before Rates, USPS-T-32, Exh. USPS-32A, p. 1.

B. The Unit Contribution and Coverage of Standard A ECR Mail is Too High

Under witness Mayes' proposal, the coverage of Standard A ECR Mail is exceedingly high, 208.8 percent, and among the highest of all subclasses. A substantially greater burden of institutional contribution is placed upon ECR Mail than the other commercial subclass within Standard A.

Test Year 2001 After Rates[27]

	Unit Contribution (cents)	Coverage (percent)
ECR	8.194	208.8
Regular	5.478	132.9
Difference	2.716	75.9

Unit contributions and coverages describe the same underlying situation. Given one, the other can always be readily calculated. It is recognized that the Commission has traditionally explained its recommendations in terms of coverages. Nevertheless, the non-cost criteria of 3622(b) can and should be applied to the unit contributions, as well as percentage markups and coverages. A focus on unit contributions helps demonstrate why the burden on ECR is excessive.

[27] The derivation of the Postal Service's unit coverages and unit contributions for Test Year 2001 is shown in Appendix C, Table C-1.

1. Percentages vs. absolute magnitudes. Much discussion in postal rate cases revolves around coverages, markups, and percent increases. At times, however, attention needs to focus simply on dollars and cents – absolute, not relative, values. Working with absolute figures can bring much needed clarity to the ambiguities that arise when the relationships between rates and costs are viewed solely in percentage terms. For example, witness Mayes testifies:[28]

> The more highly prepared the mail, the lower the postal cost attributed to that mail. The lower the costs attributed to that category of mail, the lower the cost base to which the rate level is applied. If the same cost coverage is assigned to two categories of mail differing only in the degree to which the mailer has prepared the mail, the more highly-prepared mail would have a reduced unit contribution. Thus, as the degree of preparation increases over time, all else equal, the coverage required to obtain the **same contribution** also increases. [Emphasis added.]

Within certain limits, this statement is a mathematical truism, as witness Mayes herself acknowledges.[29] Beyond that, however, it requires analysis. First, according to witness Mayes, the **"same contribution"** represents the "difference between revenue and volume-variable cost." When only percentages are discussed, it is easy to lose sight of how such percentages operate when applied to mail products that have different unit

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[28] USPS-T-32, p. 10, ll. 1-8.

[29] Response to VP-CW/USPS-T32-1(a) (Tr. 11/4388).

costs. When the coverage assigned to any mail product is raised, that mail product will yield progressively a higher unit contribution. Therefore, when a sufficiently high coverage is assigned to a lower-cost product, its unit contribution, in absolute terms, will necessarily exceed that of a higher-cost product. Such is exactly the situation regarding Standard A ECR and Regular Mail. That is, the exceedingly high coverage of lower-cost ECR Mail imposes a unit contribution which substantially exceeds that of higher-cost Regular Mail.

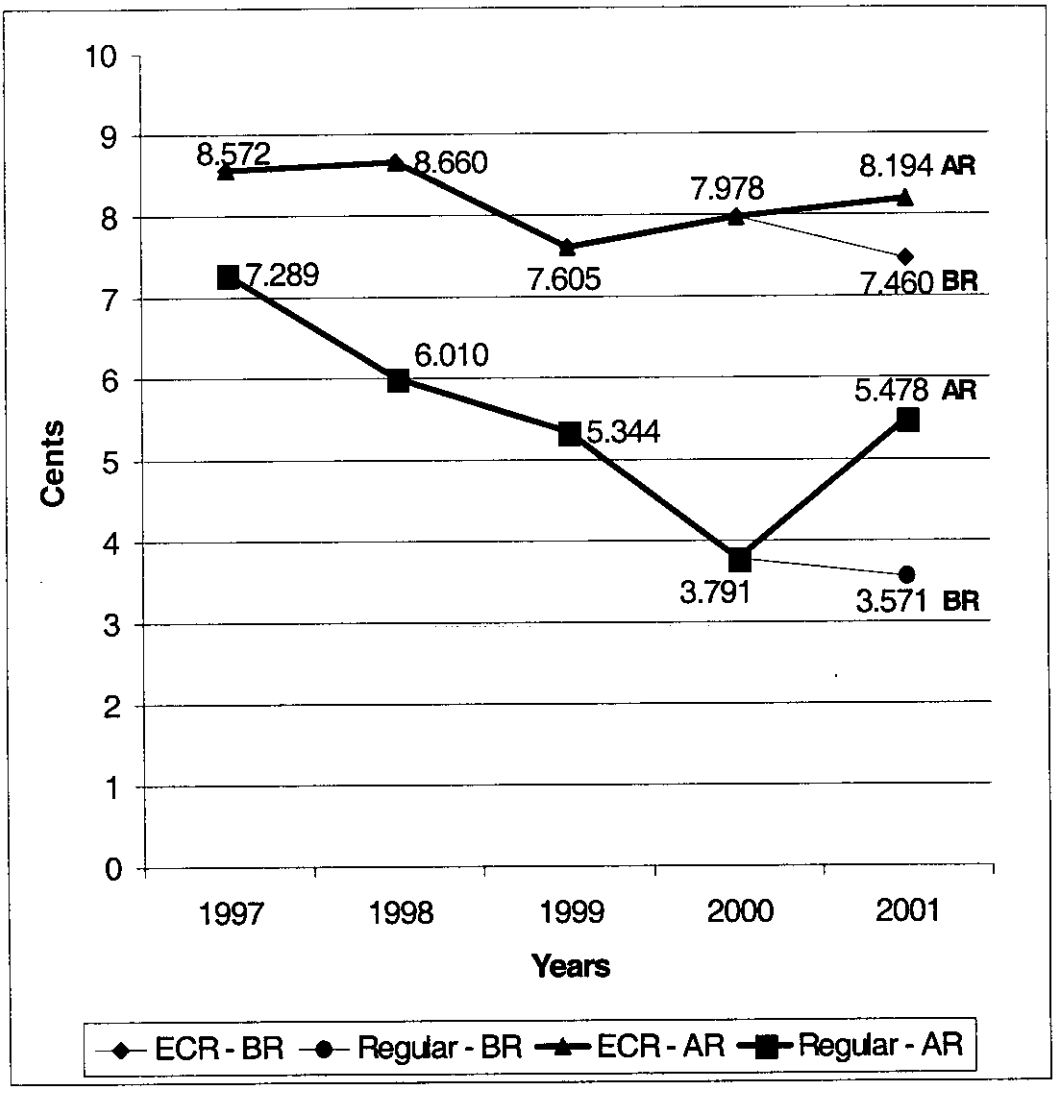
2. Past pattern of unit contributions. Figure 1 and Table 5 show the unit contributions of Standard A ECR and Regular Mail for seven data points, beginning with the Commission's *Opinion and Recommended Decision* in Docket No. R97-1, and ending with the Postal Service's proposals in the current docket.[30]

The origin of the unusually high burden of institutional contributions placed on Standard A ECR goes back to Docket No. MC95-1, when the ECR Subclass was created from Third-Class Bulk Rate Regular ("BRR"). In adopting its recommended contribution, the Commission relied on the **non-cost** criteria of Sec 3622(b), summarized as:

[30] Backup data, including the coverages that correspond to the unit contributions discussed, are presented in Appendix C, Table C-1.

1	1	Fairness and Equity	6	Degree of Preparation
2	2	Value of Service	7	Simplicity
3	4	Effect of Rate Increases	8	ECSI
4	5	Available Alternatives	9	Other Factors

Figure 1
Unit Contribution from Standard A ECR and Standard A Regular 1997 – 2001 (cents)



Source: Table 5

Table 5

Unit Contributions of Standard A
ECR and Regular Mail (cents per piece)

		ECR	Regular	ECR - Reg Difference
1997	PRC R97-1	7.552	5.444	2.108
1997	Actual (CRA)	8.572	7.289	1.183
1998	Actual (CRA)	8.660	6.010	2.650
1999	Actual (CRA)	7.605	5.344	2.261
2000	Projected	7.978	3.791	4.186
2001	R2000-1 BR	7.460	3.571	3.889
2001	R2000-1 AR	8.194	5.478	2.716

Source: Appendix C, Table C-1.

In Docket No. R97-1, witness O'Hara testified that no less than three of these criteria, Nos. 2, 5, and 6, would have strongly supported lower contributions for ECR. That counsel remains valid to the present day. Nevertheless, the Postal Service at that time justified its requested high cost coverage for ECR, 228 percent, by focusing solely on criterion 4 and its desire to avoid major, disruptive readjustments in rate relationships between existing groupings of mail.

The Commission offered support to efforts to reduce ECR's cost coverage by stating that "the largest volume subclasses in First-Class and Standard Mail should have roughly equivalent markup indices."[31] The Commission, nevertheless, expressed its concern that reductions in contributions to institutional costs from the former Third-Class Bulk Rate Regular (out of which the ECR subclass was created) should not directly increase the institutional cost burden placed on First-Class Mail. Tension between the opposing concerns of (i) reducing the excessive institutional contributions by ECR Mail by giving more weight to criteria 2, 5, and 6 of Section 3622(b), as against (ii) dampening the resulting impacts on other classes and subclasses (criterion 4), has carried over from Docket No. MC95-1, through Docket No. R97-1, to the current docket.

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[31] Docket No. MC95-1, *Op. & Rec. Dec.*, ¶ 1019.

In addition to the data taken from Docket Nos. R97-1 and R2000-1, Figure 1 and Table 5 show actual unit contributions for 1997-1999, as well as projected contributions for the year 2000 and Test Year 2001. As can be observed from Figure 1, the unit contributions of ECR and Regular Mail have tended to diverge rather than narrow. The unit contribution from Regular Mail, which was lower to begin with, has subsequently declined rather sharply, whereas the unit contribution from ECR has remained relatively constant. The rates recommended by the Commission in Docket No. R97-1 resulted in a unit contribution difference between ECR and Regular of 2.1 cents (Table 5). After the rate increase proposed by witness Mayes in this docket, the difference in unit contribution would increase to 2.7 cents.

The overall trend of widening differences in effective unit contributions, wholly ignored by the Postal Service in its case-in-chief, is reason for concern. It indicates that (i) rate increases for Regular Mail have failed to keep up with increases in unit costs, and (ii) the burden of institutional costs is being shifted from the subclasses most affected by cost problems to other subclasses whose costs have remained under control by virtue of the high degree of preparation by mailers (criterion 6). A higher unit contribution relative to other subclasses is no way to "reward" mailer worksharing. Nor is a long-term increase in unit contribution relative to other subclasses reconcilable with criterion 6 (degree of mailer preparation).

3. *Ex ante* vs. actual unit contributions. The last column of Table 5 shows the Commission's *ex ante* figure for the difference between the unit contributions of ECR and Regular Mail at the conclusion of Docket No. R97-1, 2.1 cents per piece. The Postal Service projects that in the year 2000 the difference in unit contributions will rise to 4.2 cents, double the *ex ante* figure. Given this discrepancy, it is relevant to consider what could likely happen in future years should witness Mayes' proposal in the current docket prevail. The actual difference in the years 2001-2003 could easily turn out to be substantially larger than she anticipates. Should the past be prelude, by the year 2003 the differential could as much as double, from the anticipated 2.7 cents to as high as 5.4 cents per piece.

4. Contribution differences from comparable mail products. ECR and Regular Mail have comparable content, insofar as the vast majority of volume in each subclass consists of advertising mail. Both subclasses have the same service standards and the same priorities. The principal demand feature that is different between the subclasses is that Regular Mail is more suited to demographic targeting, whereas ECR is more suited to geographic targeting. Regular Mail simply requires more Postal Service processing and transportation than ECR, because ECR is more highly prepared.

When the efficient component pricing principle for monopoly bottleneck pricing is applied, comparable products should have unit

contributions that are roughly equal. Thus, the widely divergent unit contributions of the Standard A ECR and Regular subclasses border on an anomaly in the rate structure. For that reason, it would seem essential to move toward a condition of at least rough equality between the unit contributions of these two subclasses, albeit moving in a deliberate manner. On the other hand, given the genuine need for that movement, deliberation can hardly be regarded as an excuse for standing still, let alone for regressing as the Postal Service proposes.

Rates based on witness Mayes' intentional widening of the ECR versus Regular difference, from 2.1 cents at the conclusion of the Docket No. R97-1 rate case to the 2.7 cents now proposed, cannot reasonably be regarded as giving proper weight to criterion 1, Fairness and Equity.

The unit contribution from ECR Mail is simply too high. Besides being unfair to ECR mailers, this failure to bring the difference under control by lowering the unit contribution of ECR runs counter to the Commission's principle of rough comparability among rates of comparable classes or subclasses.[32] Moreover, it is also contrary to what a rational, businesslike approach to the management of the Postal Service would suggest.

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[32] *See* Docket No. MC95-1, *Op. and Rec. Dec.*, ¶4212.

C. Widening the Gap in Unit Contributions and Coverages Makes Poor Management Sense

1. Cost incurrences vs. institutional contributions. I shall now return to an issue discussed earlier. Cost coverage of different subclasses may obscure the underlying unit cost differences and their significance. When a sufficiently high coverage is assigned to the lower-cost product, such as Standard A ECR mail, its unit contribution, in absolute terms, can and does exceed that of a higher-cost product, such as Standard A Regular Mail.

Figure 1 shows that unit contributions of ECR Mail have consistently exceeded those of Regular Mail, and the difference widens considerably from Docket No. R97-1 to the proposals in the current docket. Yet at the same time Table 6, below, clearly indicates that unit costs of Standard A ECR Mail over the same years are well below those of Regular Mail, consistently less than half.

Whenever the unit contribution of a mail product with a low unit cost exceeds that of a product with a higher unit cost, the Postal Service is in the position of incurring higher costs to obtain a lower contribution. Or, in business terms, it is spending more to earn less. This situation is only one step removed from that of the legendary firm (reportedly now defunct) that lost a little on each unit but tried to make up for it on volume.

In FY 1999, total revenues, costs, and contributions were as follows ($, millions):

	ECR	Regular
Total revenues	4,827	7,935
Total volume-variable costs	2,336	5,851
Total contribution	2,491	2,084

As the above data show[33], the Postal Service spent only $2.3 billion on Standard A ECR Mail to obtain a contribution of almost $2.5 billion. An outlay of almost $6.0 billion was required to obtain a contribution of slightly over $2.0 billion from Regular Mail.

[33] *See* Appendix C, Table C-1.

Table 6

Unit Costs of Standard A
ECR and Regular Mail (cents per piece)

			ECR	Regular	ECR - Reg Difference
1997	PRC R97-1		7.330	15.732	-8.403
1997	CRA		5.977	13.545	-7.568
1998	CRA		5.860	14.477	-8.616
1999	CRA		7.132	15.004	-7.873
2000	Projected		6.999	16.521	-9.522
2001	R2000-1 BR		7.517	16.653	-9.137
2001	R2000-1 AR		7.530	16.644	-9.114

Source: Appendix C, Table C-1.

2. Rates influence demand for mail products. Prices send signals to mailers; specifically, higher prices of a given product of mail will reduce the volume of that product, and *vice versa*. As between different mail products, the effect varies and can be quantified by the economists' elasticity measure, computed and presented by witness Tolley.

The elasticity of ECR Mail as reported by witness Tolley is -0.808; that is, the volume of ECR falls by 0.808 percent whenever the ECR rate is increased by 1 percent.[34] The elasticity of Regular Mail is -0.570.[35] Thus, a 1 percent rise in the rate of Regular Mail reduces the volume by only 0.570 percent, somewhat less than in the case of ECR. The demand for ECR is over 1.4 times more price-sensitive than that for Regular Mail. This means that the same percentage rate increase will reduce ECR volume over 1.4 times more than it would reduce Regular Mail volume. Conversely, the same percentage rate reduction would expand ECR volume by over 1.4 times more than it would expand Regular Mail volume.

The high elasticity of demand for Standard A ECR probably reflects a number of factors, but above all, the ready availability of alternatives (criterion 5). Such alternatives include advertising in local newspapers, shopping guides (which may be given out in stores or delivered by alternate

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[34] USPS-T-6, p. 129.

[35] *Id.*, p. 111.

delivery companies), radio, and local television spots. A high elasticity also indicates a relatively low value of service (criterion 2).

The above discussion shows why it makes poor management sense to keep the unit contribution and thus the coverage of ECR at the very high current level, let alone raise it further. This, in effect, disproportionately discourages the use of ECR – intentionally restricting growth in the subclass that has a particularly favorable ratio of contributions to cost – a very unbusinesslike decision.

To be sure, section 3622(b)(4) of the Act imposes a duty on the Commission to consider the impact of rate increases on mailers (criterion 4). That is, however, only one of eight non-cost criteria. The Commission and the Postal Service must also give proper weight to the other criteria and consider cost increases from the point of view of the efficiency of postal operations. In this docket, the increase for Regular Mail barely covers the cost increase. At the same time, ECR rates increased from levels that the Service and the Commission have acknowledged were already too high, discouraging the use of ECR.

The Postal Service is charged to provide mailers with "honest, efficient, and economical management." The Act also requires that the Postal Service be financially self-supporting, by achieving an operational outcome that breaks even financially. The eight criteria of the Act surely were not

intended to use the ratemaking process as a mechanism to turn the Postal Service into a sort of welfare agency, attempting to use a few subclasses to nurture and support every high-cost category of mail. To those few subclasses asked to carry so heavy a burden, such an outcome is not fair and equitable (criterion 1). The Commission should also consider rates from the point of view of postal efficiency. This should certainly include consideration of whether the application of rate criteria, and the rates that result, are helping to sustain long-term financial viability of postal operations.

In conformity with the above discussion, it should be decided that the ratemaking target for ECR, over time, is to reduce the unit contribution of ECR relative to Regular Mail. This reduction should progressively move to a lower level, even if such reductions are undertaken slowly to avoid highly disruptive effects on users of other mail products.

Many irrationalities of the rate structure ultimately derive from the Postal Service's loss of control over its costs, especially the costs of handling nonletters. The consequent cost imbalances lead the Service to manipulate the rate structure, in an effort to soften the impact of its more critical inefficiencies on certain segments of the mailing public. One hopes that the Postal Service would feel pressured to control its own costs so that the ECR-Regular gap could be moderated. Such a result would make the ECR-Regular adjustment process far less painful.

D. Proposed Rates

The rates which I propose for Standard A ECR Mail are shown in Table 7. They incorporate all the rate design changes discussed previously in Section III, as well as the reduced revenue requirement discussed in the present Section IV, designed to moderate the unit contribution demanded of Standard A ECR Mail.

The rates proposed here are fair and equitable (criterion 1), because they reflect cost incurrence better, by virtue of the rate design changes which they incorporate, and reduce the very high unit contribution, albeit by a small amount.

The slight reduction in coverage from 203 to 202 percent also accords with the relatively high elasticity, low processing priority, and relatively low value of ECR service (criterion 2).

The proposed coverage of 202 percent ECR Mail, of course, is amply sufficient to meet ECR's attributable costs (criterion 3), together with a generous, indeed still disproportionately high, contribution to the Service's institutional expenses.

No deeper reduction in coverage has been proposed at the present time, in order to avoid possibly adverse effects of rate increases on other classes and subclasses (criterion 4). Although past coverages, ever since the creation of the ECR subclass, are held to have been significantly, inequitably,

and inefficiently excessive, the Commission's concern for avoiding rate shock is recognized. Therefore, the reduction in coverage proposed here is minimal, indeed symbolic, subject to the urgency that the Commission adopt a long-term target of gradually reducing ECR coverage over the years to roughly the same range as now applies to Standard A Regular Mail.

Ample available commercial alternatives (criterion 5) and the high degree of preparation (criterion 6) of ECR Mail would have counseled a substantially deeper reduction in coverage, but had to be balanced for now against the considerations of criterion 4.

Table 7

Proposed Standard A ECR Rates
(dollars)

			Destination-entry		
			BMC	SCF	DDU
Letters					
Basic		0.170	0.150	0.145	0.140
Automation		0.158	0.138	0.133	0.128
High Density		0.144	0.124	0.119	0.114
Saturation		0.135	0.115	0.110	0.105
Non-Letters (pc-rated)					
Basic		0.170	0.150	0.145	0.140
High Density		0.151	0.131	0.126	0.121
Saturation		0.144	0.124	0.119	0.114
Non-Letters (lb-rated)					
per piece:					
Basic		0.034	0.034	0.034	0.034
High Density		0.015	0.015	0.015	0.015
Saturation		0.008	0.008	0.008	0.008
per pound:					
Basic		0.661	0.564	0.542	0.514
High Density		0.661	0.564	0.542	0.514
Saturation		0.661	0.564	0.542	0.514

Table 8

Percentage Changes from Current Rates Resulting from Proposed Standard A ECR Rates

			Destination-entry		
			BMC	SCF	DDU
Letters					
	Basic	4.9%	2.7%	2.8%	2.9%
	Automation	1.3%	-1.4%	-1.5%	-1.5%
	High Density	3.6%	0.8%	0.8%	0.9%
	Saturation	3.8%	0.9%	0.9%	1.0%
Non-Letters (pc-rated)					
	Basic	4.9%	2.7%	2.8%	2.9%
	High Density	0.0%	-3.0%	-3.1%	-3.2%
	Saturation	2.9%	0.0%	0.0%	0.0%
Non-Letters (lb-rated)					
	per piece:				
	Basic	36.0%	36.0%	36.0%	36.0%
	High Density	7.1%	7.1%	7.1%	7.1%
	Saturation	166.7%	166.7%	166.7%	166.7%
	per pound:				
	Basic	-0.3%	-3.4%	-3.7%	-4.3%
	High Density	-0.3%	-3.4%	-3.7%	-4.3%
	Saturation	-0.3%	-3.4%	-3.7%	-4.3%
Example: 8-oz piece					
	Basic	2.2%	-0.3%	-0.5%	-0.9%
	High Density	0.0%	-2.9%	-3.2%	-3.7%
	Saturation	1.2%	-1.7%	-1.9%	-2.4%

Appendix A

ADJUSTMENT TO THE UNIT COST DIFFERENTIAL BETWEEN LETTERS AND FLATS

This Appendix provides detailed information on adjustments for two separate mismatches between the IOCS and RPW data collection systems which have the effect of misstating the cost differentials. As explained in the text, the first mismatch arises from pieces whose height and length are letter-shaped, are under 1/4 inch in thickness but over 3.3 ounces in weight; *i.e.*, **"heavy-weight letters."** These pieces are recorded by RPW as nonletters (because they pay the nonletter rate), while under IOCS instructions they are recorded as letters, thereby attributing their cost to letters. To remedy this error, the costs of such heavy-weight letters are shifted from letters to flats.

The second mismatch arises from **letter-shaped** pieces entered with a detached address label. These pay the nonletter rate and are entered and recorded by the RPW system as nonletters, for the reason that letters are not eligible to be entered with DALs. At the same time, under IOCS instructions such pieces would be recorded as letters, thereby attributing their cost to letters. To remedy this error, again, the estimated costs of letter-shaped pieces with a DAL are shifted from letters to flats.

Adjustment for Heavy-Weight Letters

Cost estimate. The adjustment procedure here requires that the cost of heavy-weight letters be estimated. IOCS raw tallies for Standard A Mail **by weight increment** are provided by witness Ramage.[36] For the purpose at hand, the tally data are less than ideal in two respects: (1) they are for all Standard A Mail, not ECR mail alone; and (2) only the raw tallies are available, not dollar-weighted tallies. Nevertheless, the information that is available can be used to develop a reasonable yet conservative cost estimate, as described here.

The tally data available from witness Ramage are shown in Table A-1. The first step is to estimate the percentage of heavy-weight tallies; *i.e.*, tallies for letter-shaped mail over the 3.3 ounce breakpoint. As shown in column 1, the total tallies for letters numbered 14,839. Of these, 14,345 were for pieces that weighed no more than 3.0 ounces, and 311 tallies were for pieces that weighed more than 3.5 ounces.

Some 183 tallies reported pieces that weighed between 3.0 and 3.5 ounces, but no further breakdown within the 3.0 to 3.5 ounce increment is available. Row 5 of Table A-1 uses a linear interpolation, based on 40

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[36] Response of witness Ramage to question of the OCA during oral cross-examination (filed 4/18/2000).

percent of the tallies between 3.0 to 3.5 ounces in weight, to estimate 73 tallies in the 3.3 to 3.5 ounce range.

The total tallies of letter-shaped pieces that are overweight (3.3 to 16 ounce) are obtained by adding the tallies in Row 5 to the tallies in the 3.5-16 ounce range, shown in Row 6, yielding a sum of 384 tallies (row 6). This represents 2.589 percent of the total tallies of Standard A letter-shaped pieces. This percentage can be applied to the total cost of Standard A ECR letters by assuming that (i) the ECR subclass has the same proportion of heavy-weight letters as all Standard A Mail, and (ii) the dollar weighted costs of heavy-weight letters are in proportion to the raw tallies.

The above 2.589 percent adjustment appears rather conservative when judged by other available data which are drawn from the ECR Subclass alone. Witness Daniel (USPS-T-28) estimates that Standard A ECR Mail will contain 13,127.962 million letters of all weights in Test Year Before Rates, while witness Moeller estimates the volume of letters below the 3.3 ounce breakpoint to be 10,799.400 million.[37] The difference between witnesses Daniel and Moeller, 2,328.562 million letters, [redacted] represents 17.7 percent of all ECR letters, which is almost

[37] *See* response to VP-CW/USPS-1 (Response filed May 4, 2000) and witness Daniel response to ADVO/USPS-T28-1 (Tr. 4/1202).

7 times greater than the estimate developed here, based on IOCS tallies for all Standard A Mail. The difference reflects (i) a change in mail mix assumed by witness Moeller; and (ii) a difference in letters as defined by the DMM and RPW systems. If heavy-weight letters do indeed constitute a large share of all ECR mail that meets the DMM definition of letters, then (i) volume data developed by the RPW System and costs developed by the IOCS (which uses DMM definitions) are substantially out of sync, and (ii) the mismatch problem discussed in this testimony should be a matter of serious concern. The Commission has repeatedly stressed its desire to establish cost-based rates. Sound cost data are a fundamental prerequisite to implement cost-based rates successfully. Its concerns about the quality of Postal Service cost data are well founded.

Cost adjustment. The procedure used here to adjust costs is shown in Table A-2, rows 1-10. The volumes of Standard A ECR letters and flats, respectively, are shown in row 1, columns 1 and 3. The volume of letters and flats, 13,127,961,721 and 20,455,078,077, respectively, correspond to the total volumes used by witness Daniel.[38] Unit costs (total costs/volume) for letters and flats, before any mismatch adjustments, are shown in Table A-2, row 2. The unit cost of letters is 6.855 cents, and the unit cost of flats is 7.396 cents. The unadjusted letter-flat difference amounts to 0.542 cents, as shown in row 3.

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[38] USPS-T-28 and USPS-LR-I-92.

Table A-1

Overweight Standard A Pieces
With Letter-Shaped Dimensions

		Weight (oz.)	(1) Tallies Standard A ECR "Letters"	(2) Tallies as % of Standard A ECR "Letters"
1		0 to 3.0	14,345	96.671%
2		3.0 to 3.5	183	1.233%
3		3.5 to 16	311	2.096%
4		Total 0 to16	14,839	100.000%
5		Est. 3.3 to 3.5 40% of row 2	73	0.493%
6		Subtotal 3.3 to 16 = Overweight Pieces	384	2.589%

Notes:

Col. 1, rows 1-4	Response of USPS witness Ramage to question of the OCA during oral cross-examination (filed 4/18/00).
Col. 1, row 5	By linear interpolation.
Col. 1, row 6	Sum of rows 3 and 5.
Col. 2	Percentages based on column 1, row 4.

Since the percentage of letters in excess of the 3.3 ounce breakpoint is 2.589 percent of all ECR letters, I estimate that 2.589 percent of all attributable ECR letter costs should be shifted to nonletters. This percentage applied to the total cost of Standard A ECR letters, $899,867,000, amounts to $23,298,666, which is the estimated cost mistakenly attributed to letters. This is the amount that needs to be shifted from letters to flats. The adjustment is shown in Table A-2, row 5, columns 2 and 4.

Total volumes and costs after adjustment for the first mismatch are shown in Table A-2, row 6. Volumes recorded by RPW do not change. Adjusted costs result from adding the cost adjustment in row 5 to the total costs in row 1. Adjusted **unit costs** are shown in row 7, columns 2 and 4. The difference between the respective unadjusted unit costs in row 2 and the adjusted unit costs in row 7 are shown in row 8, columns 2 and 4. The adjusted unit letter-flat difference, calculated from the unit costs in row 7, amounts to 0.833 cents, and is shown in row 9. Finally, the change in the letter-flat difference produced by the first mismatch adjustment, obtained as the difference between row 3 and row 9, is shown in row 10 (this can also be computed as the difference between row 9 and row 3).

Table A-2

Adjustment in Unit Cost Differential Between Letters and Flats For Overstatement of Letter Costs, and Corresponding Understatement of Flats Costs On Account of Mismatch Involving Overweight and DAL-Entered Letter-Shaped Pieces

Row	Item	Volume Standard A ECR Letters (1)	Cost Standard A ECR Letters (2)	Volume Standard A ECR Flats (3)	Cost Standard A ECR Flats (4)
1	Total volume or cost	13,127,961,721	899,867,000	20,455,078,077	1,512,906,000
2	Unadjusted unit cost, cents		6.855		7.396
3	Letter-flat unit cost difference, cents				0.542
	1st Mismatch Adjustment: Overweight Pieces with Letter-shaped Dimensions				
4	Estimated percent of letters cost		2.589%		
5	Est. cost shifted from letter to flats		(23,298,666)		23,298,666
6	Totals after 1st adjustment only	13,127,961,721	876,568,334	20,455,078,077	1,536,204,666
7	Unit costs adj. for 1st mismatch, cents		6.677		7.510
8	Unit cost changes, cents		-0.177		0.114
9	Letter-flat unit cost difference, cents				0.833
10	change in letter-flat difference, cents				0.291
	2nd Mismatch Adjustment: DAL Items Misclassified as Letters				
11	Est. basis of flat volume mismatched			1.000%	
12	Est. volume of flats mismatched			204,550,781	
13	Est. number of mismatched flats as % of total letter volume	1.558%			
14	Shift the percent of letter costs in row to flats		(14,021,103)		14,021,103
15	Totals after 2nd adjustment only	13,127,961,721	885,845,897	20,455,078,077	1,526,927,103
16	Unit costs adj. for 2nd mismatch, cents		6.748		7.465
17	Unit cost changes, cents		-0.107		0.069
18	Letter-flat unit cost difference, cents				0.717
19	Change in letter-flat difference, cents				0.175
	Both Mismatch adjustments Combined				
20	Sum of both shifts of letter costs to flats		(37,319,768)		37,319,768
21	Totals after both adjustments	13,127,961,721	862,547,232	20, 455,078,077	1,550,225,768
22	Unit costs adj. for both mismatches, cents		6.570		7.579
23	Unit cost: combined change, cents		-0.284		0.182
24	Letter-flat unit cost difference, cents				1.009
25	Change in letter-flat difference, cents				0.466

Table A-2
(continued)

NOTES:

Row 1: Letters at USPS-LR-I-92, Section 2, p. 16; flats *ibid.*, page 19.
Row 2: Letters: 100 * (2) / (1) at row 1; flats 100 * (4) / (3) at row I.
Row 3: (4) – (1).

Row 4: Table A-1, row 6.
Row 5: Cost shift = total letter costs on row 1 multiplied by percentage on row 4.
Row 6: Volumes are unchanged; costs are row 1 costs plus row 5 cost shifts.
Row 7: Letters 100 * (2) / (1) at row 6; flats 100 * (4) / (3) at row 6.
Row 8: Row 7 - row 2.
Row 9: (4) - (2) at row 7.
Row 10: Row 9 - row 3.

Row 11:
Row 12: 1% of flats volume in row 1.
Row 13: Volume on row 12 expressed as percent of total volume of letters on row 1.
Row 14: Cost shift = total letter costs on row 1 multiplied by percentage on row 13.
Row 15: Volumes are unchanged; costs are row 1 costs plus row 14 cost shifts.
Row 16: Letters 100 * (2) / (1) at row 15; flats 100 (4) / (3) at row 15.
Row 17: Row 16 - row 2.
Row 18: (4) - (2) at row 16.
Row 19: Row 18 - row 3.

Row 20: Row 5 + row 14.
Row 21: Volumes are unchanged; costs are row 1 costs plus row 20 cost shifts.
Row 22: Letters 100 • (2) / (1) at row 21; flats 100 • (4) / (3) at row 21.
Row 23: Row 8 + row 17.
Row 24: (4) - (2) at row 22.
Row 25: Row 24 – row 3.

Adjustment for Letter-Shaped Pieces With a DAL

The adjustment for **letter-shaped** pieces entered with DALs is presented in Table A-2, rows 11-19. In the absence of any volume data on DAL mailings, I estimate that 1 percent of the total volume of Standard A ECR flats consists of letter-shaped pieces with DALs that are classified by the IOCS as letters. The number of these pieces, 204,440,781, is shown in row 12. The same number of pieces, when expressed as a percentage of total letter volume, is 1.588 percent, as shown in row 13.

Letter-shaped pieces with a DAL are not enveloped (**if they were enveloped, they could not be mailed with a DAL**). That is, they are necessarily "loose," and may consist of an outside multipage, untabbed folded piece with an envelope and/or other loose pieces inserted into the centerfold, as in Moeller cross-exam exhibit VP/CW-CXE-1. The Postal Service does not have any cost data or cost study to ascertain whether such pieces cost more than ordinary enveloped letters.[39] In the absence of any such study or data, to be conservative I treat these pieces as if they had the same cost as all other letter-shaped mail, and adjust the cost proportionately. Accordingly, I estimate the cost of these misclassified pieces as 1.588 percent of the total cost of letters, or $14,021,103, which is the cost that has to be shifted from letters to flats. This adjustment is shown in row 14, columns 2 and 4.

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[39] Response to AAPS/USPS-T28-1 (Tr. 4/1157).

The results of the second mismatch adjustment are presented in rows 15-19, which are obtained in a manner analogous to that applied to rows 6-10. Row 15 shows the total volumes and costs that result only from the second adjustment. Volumes, again, do not change. Adjusted costs result from adding the cost adjustment in row 14 to the unadjusted total costs in row 1. Adjusted **unit costs** are shown in row 16, columns 2 and 4. The difference between the unadjusted unit costs (row 2) and the adjusted unit costs (row 16) are shown in row 17. The unit letter-flat difference, calculated from the unit costs in row 16, amounts to 0.892 cents, and is shown in row 18. Finally, the change in the letter-flat difference produced by the second mismatch adjustment alone, that is, without previously undertaking the first mismatch adjustment, is shown in row 19 and amounts to 0.175 cents. The change in the letter-flat difference shown on row 19 is thus obtained as the difference between row 18 and row 3 (**not** between row 18 and row 9).

Heavy Letter and DAL Mismatch Adjustments Combined

The effect of both mismatch adjustments combined is shown in rows 20-25 of Table A-2. Row 20 shows the sum of cost shifts in row 5 and in row 14. Row 21, columns 2 and 4, shows total costs after both adjustments, which is the sum of row 1 and row 20. Row 22 shows adjusted **unit costs**; these are derived by dividing adjusted total costs on row 21 by the corresponding

volumes. Row 23 records the difference between the unit costs in row 22, reflecting both adjustments, and the unadjusted unit costs in the corresponding columns in row 2. Row 24 presents the calculated unit letter-flat difference, 1.009 cents, which is computed from the unit costs in row 22. Row 25 shows the change in the letter-flat difference produced by both adjustments as the difference between row 24 and row 3.

Appendix B

THE RELATIONSHIP BETWEEN COST AND WEIGHT WITHIN STANDARD A MAIL

In Docket No. R97-1, my testimony on Standard A ECR Mail contained the following statement concerning the Postal Service's attempt to study the weight-cost relationship.[40]

> The relationship between weight and cost of mail is an issue that has bedeviled the Postal Service and the Commission for many years. Despite a number of studies by the Postal Service, including one in this docket, the results remain inconclusive, unconvincing and inadequate for ratemaking purposes.

As Yogi Berra reportedly said, "It's déjà vu all over again." This appendix will again examine the weight-cost relationship, this time in more detail, in a further effort to establish a framework and rationale for more definitive studies on how weight affects costs, especially within Standard A ECR Mail. I will also endeavor to explain not only why the present studies are woefully deficient, but also why any study based largely on IOCS tallies is likely to be equally deficient.

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[40] Docket No. R97-1, VP/CW-T-1, Appendix D (footnotes omitted).

What Weight-Cost Relationship Does the Study Seek to Estimate?

Witness Daniel is admirably frank about the difficulties of trying to estimate the effect of weight on costs, especially when relying heavily on IOCS data, which were "not specifically designed for the purpose of measuring the impact of weight on costs."[41] As she points out, "The shape, origin/destination combination, cube, and level of presorting and dropshipping of mail can affect the cost of mail."[42]

The likely possibility that mail in different presort conditions, entered at different points in the postal network, can give rise to different weight-cost relationships raises a fundamental threshold question: Which particular weight-cost relationship does the study seek to estimate? In this instance, the answer would appear to be: estimate the weight-cost relationship that is most appropriate for the purpose of establishing pound rates for the two subclasses of Standard A Mail.

The rate structure for Standard A Mail already recognizes destination entry discounts, computed on a per-pound basis (and converted to per-piece discounts at the breakpoint). As a starting point, it seems reasonable to assume that the study seeks to determine the weight-cost relationship for mail that does not receive any destination entry discount; *i.e.*, mail that is

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[41] USPS-T-28, p. 4, ll. 24-25.

[42] *Id*, p. 3, ll. 26-27.

entered at an "originating" facility some place in the postal network that is prior to, or short of, a destinating BMC. The subsequent cost to move the mail to destination facilities, including all costs of loading, unloading and cross-docking, are reflected in the destination entry discount for mail entered at the DDU.[43]

The Destination Entry Discount Model Sheds Light On and Is an Additive Component of the Total Weight-Cost Relationship

The model for Standard A Mail destination entry discounts computes a weight-cost relationship for mail of all shapes, at all levels of presortation, and which varies with the extent of dropshipment. Curiously, witness Daniel's efforts to estimate the weight-cost relationship for Standard A Mail neither utilizes nor scarcely references this aspect of the weight-cost relationship estimated by witness Crum.[44] The assumption that all dock handling costs are accurately captured by the destination entry model leads to some immediate observations.

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[43] Technically, these destination entry discounts are applied in a "top-down" approach to ratemaking. This discussion assumes (i) that the model used to develop the discounts is appropriate, and (ii) that costs avoided when mail is entered at a destination entry point are, on average, equal to costs incurred by the Postal Service when mail is not so entered and instead must be transported by the Postal Service.

[44] USPS-T-27, pp. 1-6 and Attachments A-C. She does, however, use witness Crum's data to adjust for worksharing; *see* response to ADVO/USPS-T28-10 (Tr. 4/1209-20).

- First, weight-related costs developed by the destination entry model can be added to the weight-related costs for those mail processing and delivery functions not captured by the destination entry model.

- Second, if the destination entry model is considered reliable, the object of the study should be to estimate the weight-cost relationship for the "excluded" functions ; *i.e.*, the per-pound costs that are embedded (implicitly) within CRA costs for mail processing and delivery, without attempting to duplicate or replicate the results captured by the destination entry model.

- Third, if dock handling costs are reasonably captured in the model used to develop destination entry discounts, then it would seem inappropriate to include dock handling tallies in the study because such inclusion would result in double-counting.

- Fourth, the non-transportation (cross-docking) portion of the weight-cost relationship that is developed in the destination entry model, and that has withstood the test of scrutiny and time, is developed without any reliance on or study of IOCS tallies by weight increment.

- Fifth, for the destination entry component (*i.e.*, for transportation and dock handling costs) of the total weight-cost relationship, costs predictably increase smoothly and continuously with weight; other weight-related costs should build on and be in addition to the weight-related costs documented in the destination entry model.

The Weight-Cost Relationship for Mail Processing

In this section, I will again explain why (and how) weight of mail has a direct impact on mail processing costs. Further, for a given presort condition, the weight-cost relationship would, in general, appear to be continuous and monotonic.

I argue that the more extensive the amount of processing required by mail within postal facilities, the greater the effect of weight on cost. The "flip side" of this proposition is that the greater the depth to which mail is presorted, and the more processing steps that are avoided, the greater will be the costs avoided by heavier weight mailpieces. In effect, that presortation of a given number of pieces when they are heavier avoids more costs than presortation of the same number of pieces when they weigh less. As a result, the presort discounts, which are based solely on per-piece costs avoided, are likely missing a weight component. If the preceding argument is correct, it has a number of immediate implications.

First, each major level of presortation will have a different weight-cost relationship; *e.g.*, the weight-cost relationship for saturation ECR mail likely differs from that for Basic ECR mail, which in turn, may be quite different from Basic Presort or Basic Automation. Facing up to the possibility of multiple cost-weight relationships that reflect the differing levels of presortation again raises the fundamental threshold issue: Which weight-

cost relationship should the study seek to estimate if only one weight-cost relationship is to be estimated for each subclass of Standard A Mail? In order to be conservative (from a ratemaking perspective), I would suggest that the study should endeavor to focus on mail with the highest weight-related cost, which is the least presorted mail within the subclass; *i.e.*, the Basic category for ECR and Regular Presort. The pound rate for the subclass should reflect all weight-related costs, and the discount structure should reflect both weight-related and piece-related cost avoidance wherever appropriate (the destination entry discounts do this; the presort discounts do not).

A second implication is that any study which fails to isolate and analyze separately tallies from the least presorted mail to the most presorted mail randomly mixes weight-cost relationships and is likely to yield a result that, at best, is useless and, at worst, is hopelessly confused and even misleading. This is one reason why any attempt to use IOCS tallies to document how weight affects mail processing costs would appear to be fatally flawed from the outset, at least until IOCS tallies can distinguish presort condition.

Witness Moeller has previously observed that a properly-designed study must control for variations "in the amount of drop shipping, presortation, average haul of non-dropshipped mail, and other factors, all of

which could cause variations in the unit by weight increment."[45] Witness Daniel has similarly noted the problems that arise from inability to control for such factors. The data in USPS-LR-I-92 do not control for any of these factors.[46]

A Hypothetical Example to Illustrate the Effect of Weight on Mail Processing Cost

The following example seeks to explore and illustrate more concretely how weight can affect the cost of Standard A Mail. Like a formal simulation model, this hypothetical allows conditions to be controlled so as to focus solely on what happens when the weight of pieces in a mailing increases and, hopefully, to illustrate some worthwhile points.

As noted previously, it is generally recognized and understood that for any given class or type of mail (*e.g.*, letters or flats) with homogeneous density, weight is a good proxy for cube because the two vary in tandem. For a simple illustration, consider a nationwide bulk mailing of 1,600,000 identical letters or flats (this number is deliberately selected because it is readily divisible by 16, the number of ounces in a pound, which facilitates following the simple math that is involved). If each mailpiece has a uniform

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[45] Docket No. R97-1, response to NAA/USPS-T36-22 (Tr. 15/7714).

[46] An effort is made to adjust for destination entry which increases weight-related cost over the initial effort. *See* response to ADVO/USPS-T28-10 (Tr.4/1209-20) and responses cited therein.

weight of 0.5 ounces, total weight will be 50,000 pounds. One 40-foot to 44-foot trailer can carry approximately 40,000 pounds, hence 50,000 pounds is slightly more than the capacity of one trailer.[47] And if each mailpiece has a uniform weight of 1.0 ounce, total weight will equal 100,000 pounds (more than two trailer loads). Table B-1 illustrates how cube of this hypothetical mailing increases uniformly with an increase in average weight of the 1,600,000 pieces in the mailing.

Table B-1
Weight Cube Relationship of Mail
(1,600,000 pieces)

Weight Per Piece (ounces)	Total Weight (pounds)	Trailer Loads (approximately)
0.5	50,000	1.25
1.0	100,000	2.50
1.5	150,000	3.75
2.0	200,000	5.00
2.5	250,000	6.25
3.0	300,000	7.50
3.5	350,000	8.75
4.0	400,000	10.00

The density (pounds per cubic foot) of letters and flats may differ slightly, but for a given type of mail, this example illustrates how weight and cube of a mailing vary directly with the weight of individual pieces in a bulk

[47] Since weight limits vary by state, the weight capacity of a trailer is necessarily approximate.

mailing. The range of data in Table B-1 is sufficient for the points that will be illustrated here, but the range could be extended readily up to 16 ounces, the weight limit for Standard A Mail.

Dock handling costs. How do weight and cube affect mail handling costs? More trailer loads of mail will, of course, mean more containers of every type used to ship the particular type of mail; *e.g.*, letter trays, pallets, sacks, OTRs, etc. Using the lowest weight (0.5 ounces) and the heaviest weight (4.0 ounces) contained in Table B-1 for illustration, it probably costs about 10 times as much to load or unload 10 trailers as it costs to load or unload one trailer. Precisely this relationship is captured by the destination entry cost model.[48]

Mail opening and moving empty equipment costs. Assuming that the mail in this hypothetical example is in Basic presort condition, each "container" (including pallets) will have to enter a P&DC, and the mail will have to be opened and moved through the appropriate processing centers for piece sortation; *e.g.*, letter sorting machines, flat sorting machines, etc. At the point(s) where the containers are opened, empty containers and associated materials (*i.e.*, empty "equipment") will accumulate.

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[48] The cost to unload a trailer full of mail can and will vary depending on whether the mail in the trailer is bedloaded (*e.g.*, in sacks), palletized, or in rolling stock such as OTR containers. This consideration is of no consequence to a weight-cost study, where the concern is about the effect of weight on cost for any specified method of loading trailers.

For example, suppose the mail is shrink-wrapped on pallets. As average weight of each piece in the mailing increases, shrink-wrapping material from between 1 and 10 trailer loads of mail (depending upon the weight of the pieces) will accumulate and need to be removed from the premises and, ultimately, disposed of. Similarly, the empty pallets from between 1 and 10 trailer loads of mail will accumulate and need to be moved to wherever empty pallets are sent. And if the mailing consists of letters in cardboard trays, the empty non-reusable trays from between 1 and 10 trailer loads of mail will also accumulate and need to be moved and disposed of.

One does not need to be a rocket scientist to comprehend that more weight causes more empty equipment, more refuse, and more tallies of "not handling mail; moving empty equipment" (or other tallies for removing refuse, such as shrink wrapping material or empty cardboard letter trays). Obviously, not handling mail tallies that are taken during such operations contain no information that could be used to distribute them to mail on the basis of weight increment, even though the costs of these operations are clearly weight-related.

Direct tallies tend to reflect that when pieces are being handled individually, a heavy-weight piece can be handled at approximately the same

rate (and cost) as a lighter- weight piece.[49] Consequently, when functions whose cost is obviously driven by weight (*e.g.*, moving empty equipment, or removing refuse as it accumulates) are derived largely from use of direct tallies of individual piece-handling operations (which are used as a proxy to distribute the cost of not handling tallies), the end result is virtually guaranteed to miss completely the causal relationship between weight and cost. It seems completely inappropriate to use direct tallies from individual piece-handling operations to distribute to weight increment the costs associated with some, if not all, of the not handling tallies. The effect of weight will be systematically understated. This is another important reason why using the IOCS approach to study the weight-cost relationship is fundamentally flawed.

When direct tallies are used to distribute not handling tallies (such as those discussed above) to the classes and subclasses of mail, the procedure may reasonably trace cost causation to the subclasses. The same procedure, however, most likely does not trace cost causation to different weight increments, for reasons explained here. Witness Daniel states that she

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[49] The response to ABA&NAPM/USPS-T28-28 (Tr. 4/1188) indicates that heavier-weight pieces are more prone to cause machine jams, which increase cost. This observation is unassailable. However, the response to ABA&NAPM/USPS-T21-19 (Tr. 7/2938) states that "IOCS does not separately identify machine downtime due to jams," hence IOCS would be unable to pick up any such weight-related costs associated with single-piece handling.

allocates costs "to weight increment in a manner consistent with how the CRA allocates costs to subclass **and are not assumptions**."[50] It should be noted, however, that she **assumes** that the CRA methodology for allocating costs **to subclass** is equally appropriate for allocating costs to **weight increment**. This assumption is critical to the methodology which she employs, and for reasons stated herein I would respectfully disagree as to its appropriateness.

Moving mail within facilities. After containers are opened, the mail will undergo piece sortation (*e.g.*, letters on letter sorting machines, flats on FSMs or manual). As the pieces are sorted, they will need to be swept (either from machines or manual cases) and then moved to the next operation. As mail is swept, it is put into relatively small containers (*e.g.*, letters in trays, or flats in tubs), and as these containers fill up they in turn are put into larger, intermediate-sized wheeled containers suitable for movement within the facility, such as hampers.

For the sake of this discussion, it is convenient to establish a dichotomy between (i) individual piece-handling operations, and (ii) bulk-handling operations. A "bulk operation" is defined here as one where more than one piece of mail is being handled, whether it be a handful of mail, a bundle, a tray, a tub, a sack, a pallet, a hamper, an OTR, etc. Thus, when

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[50] Response to AAPS/USPS-T28-2 (Tr. 4/1158) (emphasis added).

pieces of mail are not being sorted, they are handled in bulk. Weight tends to have a systematic effect on all bulk-handling operations, and on occasion it can also affect piece-handling operations.[51]

As intermediate-size containers fill up, they must be moved manually to the next operation, because virtually all Postal Service facilities currently lack any mechanical handling method, such as tray management systems, to move mail within the facility. Again, it does not require a rocket scientist to comprehend that 10 trailer loads of mail will require the manual filling of more small containers (*e.g.*, trays and tubs) and intermediate-size containers (*e.g.*, hampers) than 1 trailer load, and more labor will be required to load and move those extra intermediate-size containers through the facility.

IOCS mixed mail tallies. After pieces of mail have received at least an initial sortation inside the facility, and the mail is being moved about in intermediate-size containers, such as hampers, a reasonable likelihood exists that various pieces of mail, probably of the same shape but of varying weight, have been commingled. If an employee is tallied when moving such a container, the tally will be recorded as handling mixed mail. Since the container likely holds pieces of differing weights, no real basis exists for distributing such mixed mail tallies on the basis of weight increment.

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[51] Response to ABA&NAPM/USPS-T28-28 (Tr. 4/1188).

Again, if direct piece handling tallies are used to distribute mixed mail tallies to weight increment, and if those direct piece-handling tallies show little relationship between weight and cost, their use will mask the underlying causal relationship between weight, the number of containers that must be moved manually through the facility, and the additional cost of such movement that is caused by more weight and cube. To repeat, the systematic bias is to understate the effect of weight on cost. For Standard A ECR Mail, 71.5 percent of all mail processing tallies were for non-single piece mail, and only 28.5 percent were single piece tallies.[52] Inappropriate distribution of mixed mail tallies to weight increment is yet another reason why the IOCS approach to a study of the weight-cost relationship is fundamentally flawed.[53]

The discussion of this hypothetical example is intended to demonstrate that weight affects costs in large measure via bulk operations, which include all operations that entail moving mail around and through the facility, and probably less so through individual piece handling operations.[54] The

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[52] Response to VP-CW/USPS-T28-24 (Tr. 4/1342-44). Mixed mail tallies represented 22.3 percent of city carrier in-office tallies.

[53] *See* USPS-T17, pp. 12-17, for more detail and discussion on how the Postal Service CRA methodology uses direct tallies to distribute mixed mail tallies and not handling tallies to the classes and subclasses of mail.

[54] If direct tallies of individual piece-handling are not an appropriate basis for distributing the costs of other functions to weight increment, then the number of direct tallies is of little immediate consequence to accuracy of the results. In others words, doubling or even

(continued...)

operations whose costs are most affected by weight would seem to be almost precisely those operations that the Postal Service has done the least to document and model.

Modeled cost for commercial and nonprofit mail. In the first reclassification case, Docket No. MC95-1, the newly proposed categories did not conform to the categories for CRA costs, hence average CRA costs for the new categories were not available. Consequently, the Postal Service used a "bottom up" approach and developed detailed cost models for the proposed categories of Standard A commercial mail. The documented modeled costs consisted largely of piece-handling costs, and the costs so modeled accounted for roughly two-thirds of all CRA costs of Standard A commercial mail.

Subsequently, in Docket No. MC96-2, the Postal Service used essentially the same models to estimate the cost of Standard A Nonprofit Mail. In this instance the modeled costs accounted for over 80 percent of all Standard A Nonprofit CRA costs. Since the handling of commercial and nonprofit mail is rather similar, the difference in the share of CRA costs captured by the models was striking. The average weight of Standard A Nonprofit Mail is somewhat less than its commercial counterpart, which

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[54](...continued)
tripling the number of individual piece-handling tallies would not throw any light on how weight affects the cost of other "bulk-related" operations. *See* ABA&NAPM/USPS-T28-9 (Tr. 4/1174).

could account for most or all of the difference. Had the Postal Service continued to pursue and refine the "bottom-up" modeling efforts which it undertook in the two reclassification dockets, it might have come up with a credible study on how weight affects costs.

Weight-related presort cost avoidance. Another important point that can be demonstrated by the hypothetical example discussed above is the cost avoidance potential of presortation. Consider two pairs of mailings of 1,600,000 pieces. Each mailing in the first pair is to an identical list of addresses, each is in Basic presort condition, and the only difference is that in one, each piece weighs 0.5 ounces, and in the other, each piece weighs 4.0 ounces. Both mailings must receive piece sortation prior to being sent to the DDU, hence each will incur weight-related mail processing costs as they are moved about and through postal facilities, but the heavier mailing will incur more such costs.

The second pair of mailings also contain identical pieces that weigh 0.5 and 4.0 ounces, respectively. In this case, however, each mailing is concentrated and presorted to Saturation level. Assuming that this latter pair of mailings is entered at the same originating upstream facility as the first pair, each of these two mailings needs only be cross-docked until it reaches the appropriate DDUs. Both will avoid whatever weight-related mail processing costs were incurred by the first pair of mailings. When the two

mailings from the first pair had to be taken into a P&DC for piece sortation, the heavier-weight mailing incurred more cost than the lighter-weight mailing. Therefore, the heavier-weight mailing in the second pair will avoid more costs when presortation enables it to avoid such intermediate processing.

As the preceding example illustrates, presortation, in addition to avoiding piece-related costs, also avoids weight-related costs. However, this cost avoidance is not recognized in the per- piece discounts given for presortation. Unfortunately, the Postal Service's weight-cost studies in this docket were not designed to study the weight-cost relationship for different levels of presortation, and they thus do not provide reliable information to enable any refinement or modification of existing presort discounts to give better recognition of weight-related cost savings.

The Effect of Weight on Destination Entry and Mail Makeup

Destination entry. By definition, destination entry requires dispatching a truck to the destinating facility. Economic efficiency in truck transportation is achieved by utilizing a truck to its maximum capacity. For any given size of bulk mailing, increasing the weight of each piece will expand the total weight and cube of the mailing (as shown in Table B-1),

thereby increasing the number of postal facilities to which direct shipment by a mailer is economical.

When an individual mailing is not of sufficient size to make destination entry economical, consolidation with other mailings is a possibility. Small, lightweight mailings may sometimes piggyback with large mailings and be entered deep into the postal network, but in general, as weight and cube of a mailing increase, deeper destination entry becomes increasingly feasible.

The conclusion from the preceding general discussion is that heavier weight pieces are more likely to be destination entered. This conclusion is supported by data from the billing determinants. Table B-2 shows the average weight and percent of mail that received destination entry for four presort categories of Standard A Mail. The percentage of mail that receives destination entry increases uniformly with average weight in 3 of the 4 presort categories.[55]

[55] The only slight aberration occurs in the 3/5-digit non-automation category. There the percentage of pound-rated pieces that receives destination entry is lower than the percentage of piece-rated flats.

Table B-2
Standard A Mail
Average Weight and Destination Entry
FY 1998

A. Standard A Regular

	3/5-digit Automation Category		3/5-digit Non-Automation Category	
	(1) Average Weight (ounces)	(2) Percent Destination Entry	(3) Average Weight (ounces)	(4) Percent Destination Entry
Letters	0.843	55.5%	0.701	43.6%
Non-Letters:				
Piece-rated	2.218	59.7	1.848	54.1
Pound-rated	5.320	71.9	7.634	47.4

B. Standard A ECR

	Basic Category		Saturation Category	
Letters	0.734	73.5%	0.955	89.3%
Non-Letters:				
Piece-rated	2.032	90.6	2.934	96.5
Pound-rated	5.094	95.3	4.869	98.0

Sources: Part A, USPS-LR-I-125, G-2, pp. 1-2.
Part B, USPS-LR-I-125, G-2, pp. 1-2.

Mail makeup. It is sometimes asserted that mail makeup varies with weight.[56] Exactly what this means, however, is not always specified. It is well known, of course, that within the 0 to 16 ounce range of Standard A the percentage of flats increases as the average weight increases. As between letters and flats, the makeup differs; Standard A letters are now entered in trays that are usually stacked on pallets, while Standard A flats are generally entered in bundles on pallets. Beyond the effect of weight on shape and packaging, another issue is whether weight of individual pieces can affect the level of presort.

Prior to mail reclassification in Docket No. MC95-1, it seems entirely possible that weight of the pieces (holding shape constant) in a Standard A (formerly third-class) mailing may also have affected the degree of presortation. Under the previous regulations, fewer but heavier pieces could qualify as bundles and skin sacks: thus, increasing the average weight of pieces could change the makeup. The role of bundles and sacks was greatly reduced following reclassification and the revised regulations for mail makeup. It is not known whether increasing the weight of pieces within a given mailing continues to affect the level of presortation under the revised regulations. If it is believed that increasing the weight of the pieces in a

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[56] *See* response of USPS witness McGrane to VP-CW/USPS-ST44-3, Docket No. R97-1 (Tr. 15/7225-28).

given mailing can still change the level of presortation, and hence the makeup, the possibility seemingly could be investigated readily via one of the simulation models used by commercial mailers to estimate the extent to which a mailing will qualify for presort discounts.

Data Quality Study

In response to a request from the House Subcommittee on the Postal Service to conduct an independent review of the quality of data used in ratemaking, in 1997 the GAO, the Commission and the Postal Service jointly prepared specifications for a Data Quality Study.[57] That study has singled out prior studies of the relationship between weight and to cost as a singular failure. In describing the issue, it states that

> The Postal Service has used essentially the same methodology for estimating the relationship between costs and weight since 1984... Intervenors and the Postal Rate Commission have criticized this methodology. These criticisms have focused on both the quality of the underlying data and anomalous results that indicate lightweight postal items across classes cost more to handle than heavier weight items.

Importantly, the Data Quality Study notes that "[w]eight information can only be obtained from mail that is identified individually, which is now less then half of all IOCS tallies." This is the crux of the problem. When

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[57] USPS Data Quality Study, Contract No. 102590-97-B-1972, Summary Report, pp. 92-94 (dated April 6, 1999).

IOCS tallies are the primary data source, piece-handling tallies are the chief source of weight increment data, while weight (and cube) is an important cost driver in all the non-piece-handling operations within a postal facility.

The Data Quality Study states that small sample size often appears to be a problem.[58] In my estimation, the issue of small sample size is something of a red herring. Tripling or quadrupling the sample size is not likely to improve matters one whit. The methodology – using the weight-cost relationship of piece-handling operations as a proxy to estimate the weight-cost relationship of bulk handling operations – is fundamentally wrong. Under these circumstances, any precision engendered by a larger sample will only make the result more precisely wrong, and it is wilful self-deception to pretend otherwise.

The Data Quality Study concludes its critique with the appropriate recommendation that the Postal Service "Develop engineering studies that track weight in conjunction with other mail cost-causing characteristics through the entire production process." (Recommendation No. 45.)[59] All parts of the production process are important, but should the Postal Service undertake any such study, it should pay particular attention to those parts of the process that the Postal Service has not modeled and where IOCS tallies

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[58] *See* response to NAA/USPS-T9.

[59] The Postal Service has not conducted any such study; *see* response to NAA/USPS-10.

do not record weight or provide any meaningful information concerning the effect of weight.

Problems With Weight-Cost Studies Proffered in this Docket

Data from the weight-cost studies of Standard A ECR letters by half-ounce increment up to four ounces are shown in Table B-3, Part A. Data by one-ounce increments up to 16 ounces are shown in Part B.[60] Each respective part contains volumes (column 1), total cost (column 2), and unit cost (column 3). These data are used to compute a statistic known as link relatives, shown in column 4.

Link relatives are statistical indicators particularly suited to illustrating variations in a data series. They are defined as differences between successive data within the series that are put on a percentage basis by division into the starting value of each difference. Algebraically, the link relative associated with any data point a(i) of a series a(1), a(2), ... , a(n) is defined as the difference a(i)-a(i-1) divided into a(i-1), that is, (a(i)-a(i-1))/a(i-1).

Part A shows link relatives by half-ounce increments up to four ounces. Part B shows link relatives by one-ounce increments up 16 ounces. Regardless of whether the data in Part A or Part B are used, it can be

[60] USPS-LR-I-92, Section 2, pp. 14-16.

observed readily that both link relative series are highly unstable. Whereas it would be reasonable to expect that with increasing weight the cost of a piece increases monotonically and, perhaps, in a smooth progression, the percentage changes represented by the link relatives show substantial jumps and drops; they even turn negative, not only at higher weights where sample sizes are smaller, but also at lower weights. Thus, in the series of half-ounce increments (Part A) the 2.5 to 3 ounce weight range dips below zero, signifying that costs actually decrease as weight of a piece increases, a wholly unacceptable anomaly. Likewise, the supposedly more stable series of one-ounce increments gives anomalous results for six of the sixteen data ranges. The unit cost data are so unstable that they should be rejected for ratemaking purposes even if my fundamental objections to the underlying methodology were to be entirely bypassed.

Anomalous results such as those displayed in Table B-3 are to be expected from raw data which do not control for entry point, presort condition, shape, or any other variable that may affect cost but is not systematically related in any meaningful way to weight. IOCS data are not specifically designed to measure the impact of weight on cost, and neither the data nor the methodology are appropriate for distributing costs to weight increments. Tallies from non-weight driven functions should not be used to distribute the costs of weight-driven functions.

Table B-3

Standard A ECR Letters Test Year Before Rates Mail Processing and Delivery Unit Costs and Link Relatives by Detailed Weight Increments

	Weight (oz.)	Volume Standard A ECR "Letters" (1)	Total Cost in weight range ($, 000) (2)	Unit Cost ($) (3)	Unit Cost Link Relatives (4)
A. Half-Ounce Increments					
1	0 to 0.5	6,002,737,918	321,077	0.053	
2	0.5 to 1.0	4,028,968,606	287,252	0.071	33.3%
3	1.0 to 1.5	1,208,061,022	96,270	0.080	11.8%
4	1.5 to 2.0	637,085,612	68,973	0.108	35.9%
5	2.0 to 2.5	592,087,281	66,806	0.113	4.2%
6	2.5 to 3.0	442,638,331	48,576	0.110	-2.7%
7	3.0 to3.5	149,904,296	22,493	0.150	36.7%
8	3.5 to 4.0	43,560,381	8,800	0.202	34.6%
B. One-Ounce Increments					
9	0 to 1	10,031,706,524	608,329	0.061	
10	1 to 2	1,845,146,634	165,243	0.090	47.7%
11	2 to 3	1,034,725,612	115,382	0.112	24.5%
12	3 to 4	193,464,677	31,293	0.162	45.1%
13	4 to 5	15,309,250	2,434	0.159	-1.7%
14	5 to 6	3,941,074	1,304	0.331	108.2%
15	6 to 7	2,231,720	674	0.302	-8.8%
16	7 to 8	695,295	188	0.271	-10.3%
17	8 to 9	178,765	83	0.463	70.8%
18	9 to 10	202,361	115	0.569	22.9%
19	10 to 11	119,745	103	0.858	50.8%
20	11 to 12	57,499	25	0.436	-49.2%
21	12 to 13	92,788	35	0.381	-12.6%
22	13 to 14	63,344	21	0.326	-14.4%
23	14 to 15	15,182	17	1.137	248.8%
24	15 to 16	11,253	116	10.295	805.5%

Col 1-3: USPS-LR-I-92, Section 2, pp. 14-16
Col 4: Defined as successive percent changes over starting base of each change, *i.e.*, 100*(a(i)-a(i-1))/a(i-1)

Research Recommendations

The focus of the discussion here has been on mail processing costs, because they constitute a major share of total costs. Accordingly, the specific research recommendations offered here relate to mail processing. As indicated below, however, both in-office city carrier costs and street costs could merit further investigation as well.

With respect to mail processing costs, it is strongly recommended that the Postal Service focus study on the cost of those non-piece handling functions that it has not yet modeled. This could be done through further modeling efforts. Alternatively, some other methodology, such as the engineering study recommended by the Data Quality Study, or simulation or time-and-motion type studies might be appropriate. As part of any study effort which the Postal Service undertakes, it should focus attention on those miscellaneous handling and allied labor operations that are avoided by presortation, with a view towards ascertaining whether the avoided costs are sufficient to warrant an extra weight-based component in presort discounts.

Witness Daniel admits that "no other studies have been undertaken since Docket No. R97-1 to study the effect of weight on carrier street time costs."[61] Consequently, witness Daniel has no data whatsoever to offer on the issue. She has simply reexamined previous assumptions, **assumed** in this

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[61] *See* response to AAPS/USPS-T28-3 (Tr. 4/1159).

docket that elemental level costs are weight-related, and hoped that by using this different assumption her results will be "blessed by the God of compensating errors."[62] Such an approach is hardly satisfactory for ratemaking purposes. The Postal Service should conduct an empirical study.

In response to the question "Is it more costly to handle an eight-ounce bound catalog or an eight-ounce shared mail set with numerous coupons and single sheets of glossy paper inside a supermarket brochure," witness Daniel states that to her knowledge the Postal Service has not conducted any study of the degree to which mail is loose or bound affects costs.[63] Since the average weight of a typical flat is less than the average weight of shared mail sets with coupons and single sheets inside a supermarket brochure, this is a related issue which also deserves empirical study.

Recommendations for the Commission

The Commission should not rely on any of the weight-cost studies of Standard A Mail that the Postal Service has submitted in this Docket. By the Postal Service's own admission, the studies do not control for any of the important variables, such as presort, that drive weight-related costs. The

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[62] The Postal Service apparently does not consider witness Daniel's assumption to have any validity, and does not use it for the CRA. *See* response to OCA/USPS-T12-11.

[63] Response to AAPS/USPS-T28-1 (Tr. 4/1157).

results are too fraught with inconsistencies and other problems to constitute a reliable basis for ratemaking purposes.

The evidence strongly suggests that there are weight-related mail processing costs. Further, in the Postal Service's current cost-identifying methodology, a bias exists to understate these weight-related costs because the cost of bulk-handling functions most likely to be driven by weight are distributed using direct piece-handling tallies that are far less affected by weight.

Finally, greater presortation helps avoid some or even all weight-related mail processing costs, yet none of this cost avoidance is recognized in presort discounts. Presortation is of course a prerequisite for destination entry. When presorted mail is entered at a destinating facility, the Commission can have confidence that upstream operations have been bypassed and any weight-related mail processing costs have been avoided. Although the data in this docket do not suffice to incorporate a weight-related element in any presort discount, the Commission can help rectify the situation by increasing the passthrough used to compute the destination entry discounts. I strongly recommend this course of action to the Commission.

Appendix C

UNIT CONTRIBUTIONS AND COVERAGES, 1997-2001

Table C-1 presents the detailed data underlying the discussion of unit contributions and coverages in Section IV of the text.

The data have been compiled from a number of sources, beginning with the Commission's *Opinion and Recommended Decision* in Docket No. R97-1. Actual data from the Services' *Cost and Revenue Analysis* are used for 1997, 1998, and 1999. Projections for the year 2000 have been taken from Docket No. R2000-1, as noted in the source listing appended to the table. Data for the year 2001 are the Postal Service's figures for Test Year Before Rates and at the Service's proposed rates, for Test Year After Rates, respectively.

Coverage is defined as total revenue over total volume-variable cost, both given in $ million. The ratio is expressed in percentage terms. The total contribution is the algebraic difference between total revenue and total volume variable cost, in $ million. Unit costs and unit contributions are derived by dividing the respective totals by the total volume, in millions of pieces. The resulting quotients, obtained in dollars per piece, are converted to cents per piece by multiplying them by 100.

All data are shown for both ECR and Regular Mail, in two separate 7-row blocks. The differences between the respective figures, defined in each case as ECR minus Regular, are presented in a third 7-line block. The negative numbers in rows 15-21 of columns (1), (2), and (5) have no special analytic significance. They simply show that total volumes and therefore, total revenues and total volume-variable costs, are larger for Regular Mail than for ECR, which indicates broader usage by the mailing public.

What is noteworthy and analyzed in the text is that the ECR - Regular differences in unit costs (rows 7-21 in column 6) are negative, while the differences in unit contributions (rows 7-21 in col 7) are positive. This shows that ECR has lower unit costs than Regular Mail, but its unit contributions are greater. In terms of orders of magnitude, the unit costs of ECR are roughly **less by half** than those of Regular Mail. The unit contributions of ECR are roughly **more by half** than those of Regular Mail.

The contrast points to a **near-anomaly** in the rate structure.

Table C-1

Effective Unit Contributions and Coverages of Standard A ECR and Regular Mail

	Year	Total Revenue ($, million) (1)	Total Vol.-Vbl. Cost ($, million) (2)	Total Coverage (percent) (3)	Volume Contribution ($, million) (4)	Unit Pieces (million) (5)	Cost (cents/pc) (6)	Unit Contribution (cents/pc) (7)
Standard A ECR								
1	1997 PRC	4,280	2,108	203.0	2172	28,759	7.330	7.552
2	1997 Actual	4,552	1,883	241.7	2,669	31,505	5.977	8.472
3	1998 Actual	4,943	1,999	247.8	2,952	34,111	5.860	8.660
4	1999 Actual	4,827	2,336	206.6	2,491	32,756	7.132	7.605
5	2000 Proj'd	4,896	2,288	214.0	2,608	32,691	6.999	7.978
6	2001 BR	5,037	2,528	199.2	2,509	33,631	7.517	7.460
7	2001 AR	5,162	2,472	208.8	2,690	32,828	7.530	8.194
Standard A Regular								
8	1997 PRC	8,017	5,956	134.6	2,061	37,858	15.732	5.444
9	1997 Actual	6,777	4,406	153.8	2,371	32,528	13.545	7.289
10	1998 Actual	7,223	5,104	141.5	2,119	35,257	14.477	6.010
11	1999 Actual	7,935	5,851	135.6	2,084	38,996	15,004	5.344
12	2000 Proj'd	8,465	6,885	122.9	1,580	41,674	16,521	3.791
13	2001 BR	8,653	7,125	121.4	1,528	42,784	16,653	3.571
14	2001 AR	9,070	6,824	132.9	2,246	40,999	16.644	5.478
Difference Between Standard A ECR and Regular								
15	1997 PRC	-3,737	-3,848	68.4	111	-9,099	-8.403	2.108
16	1997 Actual	-2,225	-2,523	87.9	298	-1,023	-7.568	1.183
17	1998 Actual	-2,270	-3,105	106.3	835	-1,146	-8.616	2.650
18	1999 Actual	-3,108	-3,515	71.0	407	-6,240	-7.873	2.261
19	2000 Proj'd	-3,569	-4,597	91.0	1,028	-8,983	-9.522	4.186
20	2001 BR	-3,616	-4,597	77.8	981	-9,153	-9.137	3.889
21	2001 AR	-3,908	-4,352	75.9	444	-8,171	-9.114	2.716

Sources:

1997 PRC	*Test Year Volume, Cost, Revenue, and Cost Recovery by Class, at Commission Recommended Rates*, Docket No. R97-1, *Op. & Rec. Dec.*, Appendix G, p.1.
1997 Actual	Cost and Revenue Analysis.
1998 Actual	Cost and Revenue Analysis.
1999 Actual	Cost and Revenue Analysis.
2000 Proj'd	Revenues and Volume, USPS-T-32, Exhibit USPS-32C, p.1; Volume Variable Cost, USPS-T-14, Exhibit USPS-14E, Cost Segment Summary, ECR, total.
2001 BR	Docket No. R2000-1, Revenues and Cost, USPS-T-32, Exhibit USPS-32A, p.1; Volumes USPS-T-6, p. 5.
2001 AR	Docket No. R2000-1, Revenues and Cost, USPS-T-32, Exhibit USPS-32B, p.1; Volumes USPS-T-6, p. 5.

Direct Testimony of Dr. John Haldi (VP/CW-T-1)

Concerning Standard Enhanced Carrier Route Mail

on Behalf of
Val-Pak Direct Marketing Systems, Inc.,
Val-Pak Dealers' Association, Inc., and
Carol Wright Promotions, Inc.

Addendum
July 20, 2000

In final review of my direct testimony prior to appearance on the witness stand, beginning late Tuesday, and culminating late Wednesday (yesterday), I discovered that one portion of my testimony relies on information which I had understood and believed to be accurate at the time the testimony was submitted, but which I no longer believe to be a sufficiently reliable basis for a change in Postal Service costing. The subject is the letter-flat cost adjustment predicated on the existence of appreciable letter-shaped pieces with a detached addressed label ("DAL") in the mailstream.

While researching my testimony, I had received information that such mailings had occurred in Houston, Texas, and was provided a copy of a letter-shaped mail piece which was said to have been accompanied by a DAL. I also received other anecdotal information concerning the existence of such pieces in the mailstream. In my testimony, I proposed that the Commission make an adjustment in letter-flat costs based on an estimate of the volume of such pieces which I developed.

Before taking the witness stand, particularly in reviewing certain Postal Service interrogatories received, I endeavored to verify the information in my testimony regarding letter-shaped pieces with DALs and to assemble other illustrations of such pieces. Unfortunately, I have been unable to confirm to my satisfaction the information about letter-shaped pieces with DALs on which I previously relied.

In view of the short amount of time between the time remaining before taking the witness stand, I have been unable to revise ~~to~~ VP/CW-T-1 in the way that I would have preferred. Accordingly, I hereby withdraw the portions of my testimony which relate to letter-shaped pieces with DALs, and ask the Commission to give them no weight in determining costs in this docket. This would include: page 11, lines 20-23; page 14, line 8 to page 15, line 4; page 17, line 1 to page 18, line 8; page A-1 line 14 through 20; page A-7, Table A-2, lines 11-25; page A-9, line 1 to page A-11, line A-11. A number of my interrogatory responses must be viewed in the same light.

In terms of the effect on my recommended rates in Table 7, page 56, this costing change requires that all recommended piece rates for non-letter High Density and Saturation Standard ECR Mail be decreased by 0.1 cent (*i.e.*, the rates shown in rows 14, 15, 19, and 20 should be decreased by 0.1 cent).

Nevertheless, I would recommend that the Postal Service develop an estimate of such volume of letter-shaped pieces with DALs as may be in the mailstream, and, if such pieces constitute significant volume, to make necessary adjustments to IOCS tally procedures to ensure that pieces which would necessarily pay the flat rate are not mischaracterized as letters.

Yesterday, I asked counsel for Val-Pak/Carol Wright to contact counsel for the Postal Service and for ADVO, Inc., the two parties which had been interested in this issue, and advise them of this change in the testimony, and I understand that those calls were made.

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

THE WITNESS: Yes, I have, Mr. Chairman.

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

THE WITNESS: Yes, they would, Mr. Chairman.

CHAIRMAN GLEIMAN: That being the case, counsel, if I could also ask your assistance in providing the court reporter --

THE WITNESS: There was one change to the interrogatory responses. That change has been incorporated here. That was Advo/VP-CW-T-1-4. I misstated a word where I said -- I said "understated" when I should have said "overstated" in my response to part (b).

CHAIRMAN GLEIMAN: And that has been incorporated into the packet?

THE WITNESS: That has been changed and incorporated.

MR. OLSON: It has, Mr. Chairman, and that had been submitted and circulated on July 17.

CHAIRMAN GLEIMAN: Thank you. If you would provide two copies of the corrected designated written cross-examination of the witness to the court reporter, I

will direct that that material also be entered into evidence and transcribed into the record.

[Designated Written Cross-Examination of John Haldi, VP-CW-T-1, was received into evidence and transcribed into the record.]

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, DC 20268-0001

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

DESIGNATION OF WRITTEN CROSS-EXAMINATION
OF VAL-PAK DIRECT MARKETING, VAL-PAK DEALERS,
& CAROL WRIGHT
WITNESS JOHN HALDI
(VP-CW-T-1)

Party	Interrogatories
Advo, Inc.	ADVO/VP-CW-T1-1, 3-7, 9 MOAA/VP-CW-T1-1-2, 5 NAA/VP-CW-T1-1, 3-6, 8, 13 USPS/VP-CW-T1-3-5, 7, 9-13, 15-16, 18-19, 21-23, 28-29
Mail Order Association of America	USPS/VP-CW-T1-12, 15, 19
Newspaper Association of America	ADVO/VP-CW-T1-1-2, 4-7 MOAA/VP-CW-T1-2-5 NAA/VP-CW-T1-1-9, 12-13 USPS/VP-CW-T1-1-6, 9-12, 14, 16, 18, 22-23, 27
United States Postal Service	ADVO/VP-CW-T1-1, 3-6, 9 MOAA/VP-CW-T1-1-3, 5 NAA/VP-CW-T1-3, 5-9, 11-13 USPS/VP-CW-T1-1-8, 11-12, 15-29

Respectfully submitted,

Margaret P. Crenshaw

Margaret P. Crenshaw
Secretary

INTERROGATORY RESPONSES OF
VAL-PAK DIRECT MARKETING, VAL-PAK DEALERS, & CAROL WRIGHT
WITNESS JOHN HALDI (T-1)
DESIGNATED AS WRITTEN CROSS-EXAMINATION

Interrogatory	Designating Parties
ADVO/VP-CW-T1-1	Advo, NAA, USPS
ADVO/VP-CW-T1-2	NAA
ADVO/VP-CW-T1-3	Advo, USPS
ADVO/VP-CW-T1-4	Advo, NAA, USPS
ADVO/VP-CW-T1-5	Advo, NAA, USPS
ADVO/VP-CW-T1-6	Advo, NAA, USPS
ADVO/VP-CW-T1-7	Advo, NAA
ADVO/VP-CW-T1-9	Advo, USPS
MOAA/VP-CW-T1-1	Advo, USPS
MOAA/VP-CW-T1-2	Advo, NAA, USPS
MOAA/VP-CW-T1-3	NAA, USPS
MOAA/VP-CW-T1-4	NAA
MOAA/VP-CW-T1-5	Advo, NAA, USPS
NAA/VP-CW-T1-1	Advo, NAA
NAA/VP-CW-T1-2	NAA
NAA/VP-CW-T1-3	Advo, NAA, USPS
NAA/VP-CW-T1-4	Advo, NAA
NAA/VP-CW-T1-5	Advo, NAA, USPS
NAA/VP-CW-T1-6	Advo, NAA, USPS
NAA/VP-CW-T1-7	NAA, USPS
NAA/VP-CW-T1-8	Advo, NAA, USPS
NAA/VP-CW-T1-9	NAA, USPS
NAA/VP-CW-T1-11	USPS
NAA/VP-CW-T1-12	NAA, USPS
NAA/VP-CW-T1-13	Advo, NAA, USPS
USPS/VP-CW-T1-1	NAA, USPS
USPS/VP-CW-T1-2	NAA, USPS
USPS/VP-CW-T1-3	Advo, NAA, USPS
USPS/VP-CW-T1-4	Advo, NAA, USPS
USPS/VP-CW-T1-5	Advo, NAA, USPS
USPS/VP-CW-T1-6	NAA, USPS
USPS/VP-CW-T1-7	Advo, USPS

USPS/VP-CW-T1-8	USPS
USPS/VP-CW-T1-9	Advo, NAA
USPS/VP-CW-T1-10	Advo, NAA
USPS/VP-CW-T1-11	Advo, NAA, USPS
USPS/VP-CW-T1-12	Advo, MOAA, NAA, USPS
USPS/VP-CW-T1-13	Advo
USPS/VP-CW-T1-14	NAA
USPS/VP-CW-T1-15	Advo, MOAA, USPS
USPS/VP-CW-T1-16	Advo, NAA, USPS
USPS/VP-CW-T1-17	USPS
USPS/VP-CW-T1-18	Advo, NAA, USPS
USPS/VP-CW-T1-19	Advo, MOAA, USPS
USPS/VP-CW-T1-20	USPS
USPS/VP-CW-T1-21	Advo, USPS
USPS/VP-CW-T1-22	Advo, NAA, USPS
USPS/VP-CW-T1-23	Advo, NAA, USPS
USPS/VP-CW-T1-24	USPS
USPS/VP-CW-T1-25	USPS
USPS/VP-CW-T1-26	USPS
USPS/VP-CW-T1-27	NAA, USPS
USPS/VP-CW-T1-28	Advo, USPS
USPS/VP-CW-T1-29	Advo, USPS

Response of VP-CW Witness John Haldi to Interrogatory of Advo, Inc.

ADVO/VP-CW-T1-1.

In Table A-2, you shift only your estimate of "heavy-weight letter" costs from ECR letters to ECR flats. In support of this shift, you indicate your belief (on page A-3) that the difference between witnesses Daniel's and Moeller's estimates of TYBR letter volume "ostensibly corresponds to the volume of heavy-weight ECR letters in the Test Year Before Rates..." Although USPS LRs I-92 and I-102 show that there are also ECR "heavy-weight letter" volumes, you do not shift any of those volumes from ECR letters to ECR flats.

(a) Please confirm that you believe the difference in witness Daniel's and Moeller's volume estimates is due to heavy-weight ECR letters. If this is incorrect, please explain your statement cited above.

(b) Please explain fully why it is appropriate to shift the "heavy-weight letter" costs to ECR flats but not the corresponding "heavy-weight" letter volumes.

(c) Please explain fully why it is appropriate to use the "heavy-weight letter" volumes with volumes and costs for letters below the 3.3 breakpoint in order to develop average cost or [of] letters below the 3.3 breakpoint.

Response:

(a) Confirmed. Witness Daniel's volumes include all the letter-shaped pieces, where witness Moeller's volumes are confined to letter-shaped pieces that weigh less than the breakpoint and qualify for letter rates.

(b) See my response to USPS/VP-CW-T1-29.

(c) I do not understand the question as stated. As I endeavored to explain in my testimony, the appropriate unit cost for "Letters" (meaning letter-shaped pieces that weigh less than the breakpoint and qualify for the letter rate) should be determined by the cost of those letters only (not all letter-shaped pieces, including heavy weight letters); *i.e.*, the cost and volume of such

Response of VP-CW Witness John Haldi to Interrogatory of Advo, Inc.

heavy weight letters should be excluded, not included, as the question implies.

Response of VP-CW Witness John Haldi to Interrogatory of Advo, Inc.

ADVO/VP-CW-T1-2.

Please refer to Table A-1 of Appendix A. There, you use Standard A IOCS mail processing tallies to estimate the proportion of total ECR letter costs which you claim belongs to ECR flats. In that Table, you use the LR I-92 letter and flat volumes and costs. Since you admit that the tally data are less than ideal, why did you use these data rather than the explicit ECR letter and flat costs and volumes in LR I-92 to determine the proportion of total ECR letter costs that the IOCS allocates to "heavy-weight letters?"

Response:

See my testimony, VP-CW-T1-1, Appendix B, and my response to USPS/VP-CW-T1-18 concerning my reservations about the unit cost data in USPS-LR-I-92. Among my reservations is the way "mixed mail," "not handling," and other tallies are allocated on the basis of inappropriate proxies. I felt more comfortable using tallies that directly identified the piece being handled.

Response of VP-CW Witness John Haldi to Interrogatory of Advo, Inc.

ADVO/VP-CW-T1-3.

On page A-3, you state:

> Witness Daniel (USPS-T-28) estimates that Standard A ECR Mail will contain 13,127.962 million letters of all weights in Test Year Before Rates, while witness Moeller estimates the volume of letters below the 3.3 ounce breakpoint to be 10,799.400 million. The difference between witnesses Daniel and Moeller, 2,328.562 million letters, ostensibly corresponds to the volume of heavy-weight ECR letters in the Test Year Before Rates, and represents 17.7 percent of all ECR letters, which is almost 7 times greater than the estimate developed here, based on IOCS tallies for all Standard A Mail. (Footnote deleted)

You then estimate an amount of ECR letter cost which you state belongs to ECR flats.

(a) Since witness Daniel's TYBR volumes and costs assume the BY98 mail mix while witness Moeller's volumes and costs have been adjusted for expected changes in mail mix, please explain why you believe that the full difference between witnesses Daniel's and Moeller's TYBR letter volumes is due strictly to ECR flats that have been mis-characterized as ECR "heavy-weight letters."

(b) Please explain why you believe none of the difference between witnesses Daniel's and Moeller's TYBR letter volumes may be assumed to be due to DMM-defined parcel shapes.

Response:

(a)-(b) My testimony was based on a misunderstanding of the differences between witnesses Daniel and Moeller. See Postal Service responses to VP-CW/USPS-1 (May 4, 2000) and VP-CW/USPS-2 (June 6, 2000).

Revised 7/17/00

Response of VP-CW Witness John Haldi to Interrogatory of Advo, Inc.

ADVO/VP-CW-T1-4.

A comparison of Witness Daniel's and Moeller's base year 1998 volumes (in thousands) is as follows:

	LR I-92 (Daniel)	LR I-66 (Moeller)
ECR Letters	13,295,273	12,943,927
ECR Non-Letters	20,763,854	21,115,200
ECR Parcels (from LR I-102)	48,083	48,083
Total ECR Volume	34,059,127	34,059,127
ECR Flats (Non-Letters less Parcels)	20,715,771	21,067,117

(a) Please confirm that, if witness Moeller's BY RPW volumes are correct, then witness Daniel's ECR flat volumes are understated. If you cannot, please explain why not.

(b) Please confirm that, if witness Moeller's BY RPW volumes are correct, then witness Daniel's ECR letter volumes are overstated. If you cannot, please explain why not.

Response:

I assume that your question intends to refer to Moeller's source as USPS-LR-I-166, not as incorrectly stated, LR-I-66. On that assumption:

(a) If witness Moeller's BY RPW ECR flat volumes are correct, then clearly witness Daniel's ECR flat volumes are understated, as the question posits. Note, however, that each witness uses different definitions; see responses to ADVO/USPS-T28-1 and VP-CW/USPS-1 and 2. Thus, on their own terms, each witness is correct.

(b) On the assumption that witness Moeller's BY RPW ECR letter volumes are correct, then clearly witness Daniel's ECR letter volumes are overstated, as

the question posits. Note, however, that each witness uses different definitions; see responses to ADVO/USPS-T28-1 and VP-CW/USPS-1 and 2. Thus, on their own terms, each witness is correct.

Response of VP-CW Witness John Haldi to Interrogatory of Advo, Inc.

ADVO/VP-CW-T1-5.

On page A-9, you estimate that 1.0 percent of the total volume of ECR flats consists of letter-shaped pieces with DALS that are classified by the IOCS as ECR letters. In addition to the shift in "heavy-weight letter" cost, you also estimate the cost of that DAL-related letter volume and also shift it to ECR flats.

(a) Please confirm that, because it is in addition to your "heavy-weight letter" cost adjustment, your DAL-related letter cost shift assumes that the DAL-related letter costs are for pieces weighting less than 3.3 ounces. If this is not correct, please explain fully.

(b) Please provide all support for your estimate that 1.0 percent of total ECR flat volume consists of DAL-related letters weighing less than 3.3 ounces.

(c) Given that the volumes in USPS LR I-92 reflect shape volume that corresponds to operational costs (processing category) rather than billing determinants, please explain fully why you believe that all the DAL-related letter volume is already included within the ECR flat volume used in LR I-92 and has been specifically excluded from the LR I-92 letter volumes.

Response:

(a) Confirmed.

(b) Please see my responses to USPS/VP-CW-T1-3, 4, and 5.

(c) Please see my responses to USPS/VP-CW-T1-3, 4, and 5. My DAL estimate is a minimal estimate, designed to acknowledge the existence of letter-shaped mailpieces accepted by the Postal Service with DAL's, and is not intended as a numerically firm quantity with more than one significant figure. While there exists a possibility of overlap between the two mismatch corrections, I still posit that such a minimum is to be taken as ranging from

Response of VP-CW Witness John Haldi to Interrogatory of Advo, Inc.

0.5 to 1.499 percent, rounding to 1 percent with one significant figure. This should take care of any possible overlap.

Response of VP-CW Witness John Haldi to Interrogatory of Advo, Inc.

ADVO/VP-CW-T1-6.

On page 16 of your testimony, you state:

> As no information is available concerning the presort condition of overweight letters, the adjustment to the letter-flat cost difference is distributed uniformly over Standard A ECR Basic, High-Density and Saturation presort categories.

If there were information available concerning the presort condition of overweight letters, how would you use it?

Response:

If the distribution of ECR overweight letters by presort condition were available, and if that distribution differed from the presort distribution of "non-overweight" ECR letters, it would be used to make adjustments to the letter-flat cost differences.

Response of VP-CW Witness John Haldi to Interrogatory of Advo, Inc.

ADVO/VP-CW-T1-7.

On page 27, Table 2, of your testimony, you propose a letter-flat differential of 0.9 cents at the ECR saturation level, which is a 95% passthrough of the letter-flat differential you show on page 18 and which you develop, in part, in Appendix A.

(a) Since your Appendix A addition of .466 cents to the letter-flat differential is not de-averaged by density level or dropship status, why do you believe it is appropriate to pass through so much of it?

(b) Do you believe that your proposed letter-flat cost differential is entirely or at least 95% shape-related (as opposed to weight-related)? If so, please explain fully your basis for this belief. If not, please explain fully why you propose a passthrough that is greater than the shape-related portion of the cost differential.

(c) Please confirm that, with your Appendix A adjustments, you believe the ECR costs by shape are sufficiently reliable to develop a proposed ECR rate schedule. If this is incorrect, please explain fully.

Response:

(a) I am not certain that I fully understand the question; *i.e.*, I do not see the linkage which you suggest should exist between the level of a passthrough and homogeneity of that mail to which the passthrough is applied. If my letter-flat differential were de-averaged by density level and/or dropship status, the very nature of de-averaging is such that some rate cells would receive a larger impact while others would receive a smaller impact. I would propose a 95 percent passthrough in either case.

(b) The presort tree does not allow for a weight-related component to the letter-flat cost differential (nor do the presort differentials allow for a weight-related component; see my response to NAA/VP-CW-T1-3). Until the

Response of VP-CW Witness John Haldi to Interrogatory of Advo, Inc.

Postal Service develops a more reliable methodology for tracing the effect of weight on costs, reflecting the entire difference in the shape-related discount on a per piece basis seems appropriate.

(c) Confirmed.

Response of VP-CW Witness John Haldi to Interrogatory of Advo, Inc.

ADVO/VP-CW-T1-9.

If you have performed analyses of the costs and contributions by products within ECR, either for the USPS proposed or for your own proposed ECR rate schedule, please provide them.

Response:

In this docket, I did not perform a bottom-up cost analysis for the costs in individual rate categories or rate cells, as I did for my testimony in Docket No. R97-1, VP/CW-T-1.

Response of VP-CW Witness John Haldi to Interrogatory of Mail Order Association of America

MOAA/VP-CW-T1-1.

Please confirm the following Standard A Enhanced Carrier Route Pound Rates:

a). The USPS proposed pound rate for no destination entry of $0.584 in R2000-1;

b). Your proposed pound rate for no destination entry of $0.661 in R2000-1;

c). The USPS proposed pound rate for no destination entry of $0.53 in R97-1;

d). Your proposed pound rate for no destination entry of $0.53 in R97-1.

Response:

(a) Confirmed.

(b) Confirmed. See my response to MOAA/VP-CW-T1-2.

(c) Confirmed.

(d) Confirmed. See my response to MOAA/VP-CW-T1-2.

Response of VP-CW Witness John Haldi to Interrogatory of Mail Order Association of America

MOAA/VP-CW-T1-2.

Please explain all reasons for not adopting the USPS' proposal in R2000-1 for the pound rate for Standard A ECR, a rate that is higher than the pound rate you proposed in R97-1.

Response:

My testimony in Docket No. R97-1, VP/CW-T-1, used a "bottom-up" approach to estimate costs for each rate cell (for mail entered at piece-rates). Rates were then developed from the bottom-up unit costs in my testimony. It was my conviction then, and it remains so, that the Postal Service and the Commission would be better served by developing and using bottom-up costs as the basis for setting rates, especially as the Postal Service faces increasing competition both from delivery of hard copy as well as electronic media. For its own reasons, however, the Commission opted not to rely on my approach; see Docket No. R97-1, *Opinion and Recommended Decision*, ¶5374.

A substantial amount of work was involved in developing bottom-up costs in Docket No. R97-1, and it was my desire there to focus on the methodology of developing those costs, and establishing rates based on those costs, without "muddying the waters" with respect to other issues such as the appropriate pound rate. It was for this reason that I elected to recommend the same pound rate as the Postal Service, and this is exactly what my testimony stated. Specifically, at page 52, lines 2-4, I said:

> Since the weight-cost relationship is not known with any degree of certainty, it was decided to adopt the Postal Service's proposed rate of $0.53 per pound for pieces that weigh in excess of the breakpoint.

Response of VP-CW Witness John Haldi to Interrogatory of Mail Order Association of America

In other words, I had absolutely no conviction whatsoever that $0.53 represented a cost-based pound rate, or in any other way was the "right" rate. In Appendix D to my Docket No. R97-1 testimony I made a considerable effort to explain why the weight-cost study in USPS-LR-H-182 lacked credibility and should not be relied on for ratemaking purposes. In this docket, I find the weight-cost studies of witness Daniel equally lacking in credibility, and I reject using such studies as the basis for making any fundamental change in the pound rate; see Appendix B to my testimony in this docket for further discussion.

Response of VP-CW Witness John Haldi to Interrogatory of Mail Order Association of America

MOAA/VP-CW-T1-3.

In your "Appendix B. The Relationship between Cost and Weight within Standard A Mail" at B-3 (lines 10-13) you critique USPS witness Daniel's weight-cost study for not using USPS witness Crum's results [for] destination entry cost savings.

a). Did you make any effort to use witness Crum' results to modify and/or restate witness Daniel's weight-cost relationship?

b). If the answer to a) is yes, please provide your analysis and results.

c). If the answer to a) is no, please explain how you believe witness Crum's results should be integrated into witness Daniel's costs study.

Response:

(a) No.

(b) n. a.

(c) In Appendix B to my testimony in this docket, I have endeavored to provide a detailed explanation why, in my opinion, the use of IOCS tallies to estimate the effect of weight on cost is **fundamentally flawed**. Before addressing your query about "integrating the results," let me clarify my position.

First, it seems highly likely, to the point of almost virtual certainty, that there exist a multiplicity of weight-cost relationships, depending upon how presorted the mail is, and where in the network it is entered. Witness Daniel's IOCS-based study makes no effort to define which weight-cost relationship she is attempting to measure. The failure to define at the outset

which weight-cost relationship she is endeavoring to estimate stems directly from the fact that the IOCS does not – and cannot – make any distinction between (i) mail which is entered deep into the network versus mail which is entered at originating facilities and must be moved through the entire network, or (ii) between mail which is lightly presorted versus that which is highly presorted. If, for example, one were to undertake a study by stating initially that the purpose is to estimate the weight-cost relationship for the most lightly presorted mail that receives no destination-entry discount (which would be a reasonable place to start for ratemaking purposes), then I cannot conceive of how IOCS tallies could be the exclusive, or even partial, basis for such a study.

Second, a substantial amount of work in Postal Service plant and distribution centers, and the tallies recorded when such work is being performed, are causally and directly related to weight, but all such tallies are recorded variously as "not handling mail," "moving empty equipment," or "moving mixed mail about the facility in large containers," or some other activity (*e.g.*, "removing waste material used to shrink-wrap pallets"). Distributing the costs associated with all of these weight-related tallies (where no mail was handled) by use of tallies from individual piece handling operations,

where there is probably little or no relationship between weight and cost, distorts and biases the result and understates the effect of weight on cost.

To address directly your query about "integrating" witness Crum's results into witness Daniel's weight-costs study, I think that would be like mixing good apples with bad apples. The purpose of witness Crum's study, which uses the model developed in a prior rate case by witness Atcheson (and used in all subsequent dockets), is to differentiate among distinct weight-cost relationships, depending upon where in the network the mail is entered. Any complementary study would need to make the same kind of distinctions, but the IOCS tallies cannot be separated in this way.

Response of VP-CW Witness John Haldi to Interrogatory of Mail Order Association of America

MOAA/VP-CW-T1-4.

In your "Appendix B. The Relationship between Cost and Weight within Standard A Mail" at B-4 (lines 14-19):

a). Does your "observation" imply that witness Daniel has double counted dock handling costs in her weight-cost study?

b). If your answer to part a) is yes, please confirm that this alleged double count will result in estimated unit costs that are biased higher than the actual unit costs? (If you cannot confirm, please explain the logic for your answer.)

c). If your answer to part a) is no, please explain what you mean and identify "the study" (at line 17) to which you refer.

Response:

(a) No.

(b) n.a.

(c) The term "the study" as it appears at the above-cited place in my testimony is intended to refer to any study of the weight-cost relationship that is designed to complement the destination entry model. See page B-26, lines 7-16, for further discussion concerning such possible study (you will note there an absence of any reference to an IOCS-based study).

Response of VP-CW Witness John Haldi to Interrogatory of Mail Order Association of America

MOAA/VP-CW-T1-5.

In your "Appendix B. The Relationship between Cost and Weight within Standard A Mail," you state that "For Standard A ECR Mail, 71.5 percent of all mail processing tallies were for mixed mail" at B-14. Please provide the calculation of this result from the data provided in response to VP-CW/USPS-T28-24, referenced in your footnote (52).

Response:

The attachment to the response to VP-CW/USPS-T28-24, part b, provides the following data concerning BY98 IOCS Direct Tally Counts — Clerks and Mailhandlers Standard Mail (A) ECR:

	Total Tallies	Distribution
Employee Handling Single Piece of Mail:		
All Mail Processing (3.1)	848	28.5%
Employee Handling Multiple Pieces of Mail, Item or Container:		
All Mail Processing (3.1)	2,131	71.5
TOTAL	2,979	100.0%

Perhaps it would have been more accurate to describe the 2,131 tallies shown in the second row above as "non-single piece" tallies, rather than "mixed" tallies.

Response of VP-CW Witness John Haldi to Interrogatory of Newspaper Association of America

NAA/VP-CW-T1-1.

Please refer to your testimony pages 18-19, where you propose setting the ECR pound rate at $0.661, which is "slightly less than the existing rate and is equal to the same rate proposed by witness Moeller for the Standard A Regular Subclass." You justify this rate in Footnote 13 by stating "Should the Commission adopt witness Moeller's proposed pound rate of $0.661 for the Regular Subclass, rather than the current $0.663, the rate proposed here will avoid having the anomalous situation of an ECR pound rate which exceeds that of the Regular Subclass."

a. Does this constitute the entirety of your reason for your proposed ECR pound rate? If not, what other reasons support your ECR pound rate proposal?

b. Why would it be anomalous if the ECR pound rate were to exceed the Regular pound rate?

c. Your statements seem to imply that the Regular pound rate is a constraint on the ECR pound rate rather than a reason for a particular value for the Regular pound rate. Do you agree with this interpretation? If so, what would be your rationale for choosing the pound rate aside from the constraint? If you disagree with this interpretation, do you propose that the ECR and Regular pound rate always be set equal?

d. If the Regular pound rate were instead raised as part of an across-the-board increase of 9.4% for the Regular subclass to $0.663*1.094 = $0.725, would you then find it reasonable to set the ECR pound rate also to $0.725. Why or why not?

Response:

(a) No. Reasons supporting my proposed pound rate are presented at pages 18-19 and Appendix B of my testimony, where I argue that cost estimates based on the IOCS systematically understate the effect of weight on costs. Indeed, given the way IOCS tallies are recorded, I doubt whether any amount of analysis of IOCS tallies could ever result in the development of a credible

relationship between weight and costs. There is now, as there has been for years, an unfilled need for the Postal Service to perform a credible weight-cost study. Such a study could proceed either by (i) devising a new and original statistical methodology, including an appropriate sampling strategy, or (ii) building a carefully calibrated model that takes into account all relevant causative factors (see my Appendix B, page B-26, lines 6-16, for further discussion). Pending such a study by the Service, no credible rationale exists for changing the pound rate of Standard A ECR Mail in any but a marginal way, such as I suggest by (i) the adjustment from 0.663 to 0.661 dollars per pound, and (ii) not adjusting the pound rate upward while all piece rates increase, which reduces the pound rate in relation to the piece rate. I would note that Appendix B grows out of prior critiques which I have done on the use of IOCS tallies to determine the cost function of weight. In Docket No. R97-1, I specified how such a study could be undertaken. The implications of the Postal Service's refusal to do a proper study are for someone else to draw, but the wrong response would be for the Commission to base rates on a study simply because the Postal Service refuses to undertake a proper one.

(b) The anomaly is implicit in the discussion in Appendix B of my testimony. There, I show that the more a mail product has to be processed by the

Response of VP-CW Witness John Haldi to Interrogatory of Newspaper Association of America

Service, the greater is the likely understatement of weight-related costs, as a result of ignoring the impact of weight on processing costs. ECR mail by definition requires far more worksharing than Standard A Regular Mail. Since the Service has to undertake substantially more processing per piece of Regular mail than per piece of ECR mail, I would expect ECR to have a relatively smaller amount of weight-related costs than Standard A Regular. Given this situation, I would regard it as anomalous if the ECR pound rate were to exceed the Regular pound rate.

(c) Yes, as explained in my response to preceding part (b), the pound rate for Standard A Regular Mail should serve as an upper bound on the pound rate for ECR mail. See my response to part (a) for my rationale for choosing the pound rate. (The third sub-question included in part (c) is not applicable.)

(d) No, not necessarily. See my response to preceding parts (a) and (b).

Response of VP-CW Witness John Haldi to Interrogatory of Newspaper Association of America

NAA/VP-CW-T1-2.

You state on pages 19-20, that "Nevertheless, I would suggest that this 85 percent passthrough and the resulting destination entry discounts be applicable to all Standard A Mail, as has been the custom in prior dockets, and as the Postal Service proposes to continue in this docket." Do you agree that your statement is intended to state that the passthrough (whatever number is used) should apply to all Standard A Mail, and is not intended to state that the Postal Service is proposing to continue a 85 percent passthrough?

Response:

Yes. In terms of witness Moeller's proposed destination entry passthroughs, which obviously are not 85 percent, his testimony speaks for itself.

Response of VP-CW Witness John Haldi to Interrogatory of Newspaper Association of America

NAA/VP-CW-T1-3.

On page 22, lines 1-2, you state "However, the per-piece presort discounts do not recognize or reward any such cost avoidance..." Is it possible that the per-piece presort discounts reflect an average of weight-related cost avoidance and piece-related cost avoidance? Why or why not?

Response:

The derivation of presort discounts for Standard A Mail is reported by witness Miller[1] who states: "My analysis relies upon shape-specific CRA mail processing unit costs, which are reported by cost pool in the In-Office Cost System (IOCS).... The CRA mail processing unit costs are subdivided into 52 cost pools.... The costs are 'mapped' to each cost pool using the Productivity Information Reporting System or MODS operation number associated with each IOCS tally.... I have classified each cost pool into one of three categories: worksharing-related proportional, worksharing-related fixed, or non-worksharing related.... When it is not possible to isolate CRA mail processing unit costs at the rate category level,... I have used cost models to de-average an appropriate CRA mail processing unit cost benchmark. A cost model has been developed for each rate category."[2]

To answer this question, one needs to assess whether and to what extent weight-related costs are captured by (i) witness Miller's analysis of MODS costs pools using IOCS tallies, and (ii) witness Miller's cost models that were used in the absence of an appropriate

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[1] USPS-T34, pp. 3-11, 15-18, and Appendix II.

[2] *Id.*, pp. 4-5.

Response of VP-CW Witness John Haldi to Interrogatory of Newspaper Association of America

CRA mail processing unit cost benchmark. To assist in answering this question, I have compiled the following information from the tables in witness Miller's Appendices I and II.

A. Distribution of Cost Pools
(number)

	Worksharing Related		Non-Work-Sharing Related
	Proportional	Fixed	
First-Class Letters			
Bulk Metered Mail Letters	11	6	35
Automation Carrier Route Presort	11	6	35
Standard A Letters			
Nonautomation Presort	16	2	34
Automation Noncarrier Roue Presort	11	7	34

B. Distribution of CRA Mail Processing Unit Costs
(percent)

	Worksharing Related		Non-Work-Sharing Related
	Proportional	Fixed	
First-Class Letters			
Bulk Metered Mail Letters	67	13	20
Automation Carrier Route Presort	65	15	20
Standard A Letters			
Nonautomation Presort	69	2	29
Automation Noncarrier Roue Presort	60	15	25

As can be seen in Part A above, many cost pools are classified as non-worksharing related. However, as shown in Part B, only about 20 to 29 percent of all mail processing unit costs are classified as non-worksharing related. It would seem reasonable to presume

that some weight-related costs are captured in witness Miller's worksharing related costs pools. I would note, however, that neither the analysis of MODS cost pools using IOCS tallies, nor the modeling approach, recognize weight as a distinct factor. The "work-sharing related proportional" category is based on piece volume; unit costs in the models are likewise derived by division into piece volume.

I have not attempted to analyze the non-worksharing related cost pools to determine what share of weight-related costs they might represent. To the extent that the per-piece presort costs and discounts do reflect an average cost that includes some weight-related costs, that illustrates an important part of the problem, because weight as a distinct factor in both mail processing costs and presort savings is thereby left unrecognized. That is one reason why my testimony proposed that destination entry discounts, which do incorporate the effect of weight, should be maintained at the current 85 percent level, rather than being reduced, as witness Moeller proposes.[3]

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[3] USPS-T-35, pp. 26-27.

Response of VP-CW Witness John Haldi to Interrogatory of Newspaper Association of America

NAA/VP-CW-T1-4.

On page 23, lines 1-3, you state "Maintaining the passthrough at a level at least equal to 85 percent will retain the incentive for Standard A mailers to continue taking advantage of destination entry discounts." Would retaining the absolute amount of the discount also retain the incentive? Why or why not?

Response:

No. If the absolute amount of the discount were retained, the incentive would be weakened in relation to increases in the costs that destination entry avoids. Mailers must balance costs which they incur against the discounts earned. When mailers' costs increase while the discounts stay frozen at previous absolute levels, for some fraction of mailers who had previously engaged in cost sharing, the balance turns unfavorable, and such mailers will respond by letting the Postal Service carry the increased load. With respect to destination entry, transportation costs are the primary consideration, and they tend to increase as fuel prices, vehicle costs, and drivers' wages rise. It should be kept in mind that rate cases are needed in the first place because of cost increases.

Response of VP-CW Witness John Haldi to Interrogatory of Newspaper Association of America

NAA/VP-CW-T1-5.

On page 23, lines 1-6, you discuss the "competitive private sector transportation network." What evidence do you have that costs for this network have increased at the same rate as transportation costs for the Postal Service?

Response:

I have not stated that the costs of the competitive private sector network have increased at the same rate as transportation costs for the Postal Service, nor do I have any data or other evidence that such an assertion is necessarily correct. It is not germane to the point which I made in my testimony.

By way of further discussion, however, for intercity transport the Service relies on contracted services, drawing generally on the same pool of private-sector long-distance contractors as worksharing mailers. As indicated in my response to NAA/VP-CW-T1-4, all operators of trucking fleets are faced with paying the prevailing market rate for fuel, vehicles and wages (subject, of course, to any existing contractual arrangements which might result in a short delay before costs are passed through). When these underlying costs increase, they will generally increase in tandem for all operators and users, including the Postal Service. The net transportation cost to users, however, depends on additional factors such as the percentage of capacity of trucks that is utilized, as well as the number of hours per day the vehicle is utilized. Finding ways to keep trucks filled and rolling can help hold down unit costs in the face of rising costs for factor inputs such as fuel.

Response of VP-CW Witness John Haldi to Interrogatory of Newspaper Association of America

NAA/VP-CW-T1-6.

Please refer to your testimony page 25, lines 4-8, where you state that a "fair and equitable starting point for rate design would be an across-the-board increase by the required amount. However, maintaining the pound rate essentially unchanged negates even the possibility of such an across-the-board increase." Do you agree that if you were not held to this restriction on the pound rate, that an across-the-board increase would be possible? Why or why not?

Response:

Yes. Of course, this possibility is grounded in elementary mathematics. Beyond that, such an across-the-board increase would be a reasonable starting point if all rates could be thought of as having settled into a configuration of approximate mutual equilibrium. What we often see, however, is an ongoing adjustment process reflecting the fact that rates have not settled into a configuration that could be described as mutual equilibrium. Valid reasons why an across-the-board increase may not be the most appropriate rate design can arise from considerations such as new forms of rate de-averaging, previous de-averaging that is still being phased in, changes in costs arising from automation and new data, new cost studies, or changes in cost methodology.

Response of VP-CW Witness John Haldi to Interrogatory of Newspaper Association of America

NAA/VP-CW-T1-7.

Please refer to your testimony, page 25, lines 8-10, where you discuss two further changes to Mr. Moeller's rate design. Did you consider any other changes? If so, please describe them.

Response:

One change that I both considered and incorporated into the model used to design my recommended rates was elimination of rounding in the intermediate calculations. Such rounding, when it is undertaken in determining passthrough percentages by means of the presort tree, can give rise to excessive discontinuities, that is, comparatively large jumps in the final rates provoked by and disproportionate to slight changes in rate-making parameters.

Response of VP-CW Witness John Haldi to Interrogatory of Newspaper Association of America

NAA/VP-CW-T1-8.

Please refer to your testimony page 25, lines 13-15, where you propose that the presort passthrough for High Density mail be increased from 125 to 140 percent, to help offset the fact that the Basic letter rate is set equal to the rate for Basic nonletters. Did you consider proposing that some of the cost difference between Basic letters and Basic nonletters be reflected in the rates. Why or why not?

Response:

No. I was aware that witness Moeller, for understandable reasons, assigns very high priority to keeping the Basic ECR letter and Basic ECR nonletter rates equal, in order to support the Service's automation program, by providing mailers with strong motivation to use the Automation category. I did not wish to frustrate this rate design objective, which serves to support postal efficiency through automation.

Response of VP-CW Witness John Haldi to Interrogatory of Newspaper Association of America

NAA/VP-CW-T1-9.

Please refer to page 26, lines 6-7, where you state that "The maximum increase is 8.0 percent (and not 10.0 percent, as with witness Moeller's proposed rates)." Does this indicate that you find moderating rate increases in individual rate cells a desirable goal? Would the way to moderate rate increases for the largest number of individual rate cells be to give each rate cell the same increase? Why or why not?

Response:

Section 3622(b)(4) of the Postal Reorganization Act lists as one of the ratemaking criteria "the effect of rate increases on the general public, business mail users, and enterprises in the private sector of the economy engaged in the delivery of mail matter other than letters." Although the Commission has stated that the criteria in § 3622(b) are not binding below the subclass level, and it will not apply all of the criteria systematically to the individual rate cells within a subclass, on numerous occasions it has nevertheless invoked this particular criterion at the rate cell level; *i.e.*, it has rejected rate recommendations on grounds that they did not sufficiently moderate rate increases for individual rate cells. The criterion in § 3622(b)(4) can, of course, be in tension with other criteria and objectives. For example, when de-averaging rates to accommodate and promote worksharing, or to promote automation and efficiency, higher rate differentials that work against moderation of rate increases may be desirable. In this instance, witness Moeller's higher piece rates were driven in no small part by his proposed reduction in the pound rate. Inasmuch as I rejected the studies which underlie his proposed pound rate, and recommended only a moderate increase in his proposed passthroughs for destination entry (to the level recommended by the Commission in Docket No. R97-1), moderation of rate

increases over individual rate cells assumes higher relative priority. Given the preceding considerations, in my own proposed rate design, I wanted to be sure that I did not exceed Moeller's largest increase, 10 percent, and I was pleased to be able to do slightly better.

As to the second question in this interrogatory, I assume the reference to having the same rate inceases means the same percentage increase, as opposed to the same absolute increase. It is a mathematical truism that the way to minimize the largest percentage rate increase is to make the percentage rate increases for all rate cells equal to each other, but see my response to NAA/VP-CW-T1-6 for a discussion of valid reasons for deviating from an equal percentage increase in each rate cell. Similarly, it is also a mathematical truism that the way to minimize the absolute amount of rate increase is to set the absolute amount of rate increase equal in all rate cells.

Response of VP-CW Witness John Haldi to Interrogatory of Newspaper Association of America

NAA/VP-CW-T1-11.

Please confirm that the effect of your proposed rate changes on page 56 is to increase revenues per piece by 1.28%, versus Mr. Moeller's 4.94%. If you cannot confirm, please provide the percent increase in revenues per piece corresponding to those rates

Response:

I can not confirm because I did not find such a computation necessary for my own rate design, nor have I undertaken it. Since, however, revenue per piece is calculated as the ratio of the revenue target over the volume of mail, it appears reasonable that the increase in revenue per piece would be less with my proposed rate design than with witness Moeller's. Under my proposed rate design, (i) the numerator of the ratio decreases, because my proposed revenue target is 3.35 percent lower than that of witness Moeller; and (ii) the denominator of the ratio volume increases, because my proposed rates are on average lower than those of witness Moeller, which will cause the volumes corresponding to my rates to be somewhat higher than volumes corresponding to witness Moeller's rates.

Response of VP-CW Witness John Haldi to Interrogatory of Newspaper Association of America

NAA/VP-CW-T1-12.

Please confirm that your proposed rate changes on page 56 include a ECR Basic Letters rate of $0.172, which is lower than the Regular 5-digit Automation rate of $0.170 proposed by Mr. Moeller. If you cannot confirm, please explain. Do you find anything anomalous about this particular rate relationship? Please explain.

Response:

I cannot confirm because the question appears to be mistakenly phrased, with the two numbers reversed. Assuming that to be the case, and provided that the reversal is corrected, I confirm that my proposed ECR Basic letter rate is $0.170 and witness Moeller's proposed Regular 5-digit Automation rate is $0.172.

I do not find comparisons between witness Moeller's proposed rates and my proposed rates useful, since we have different revenue targets, but I have these thoughts. First, my rate design preserves witness Moeller's proposed 1.2 cent difference between ECR Basic letters and ECR Automation letters (up from 0.6 cents currently). This differential preserves the increased incentive for ECR Basic letters to convert to ECR Automation letters. Second, my rate design maintains the Basic ECR letter rate equal to the Basic ECR flat rate. In view of my proposed rates assuming a revenue target that is 3.35 percent lower than that of witness Moeller, I saw no reason to deny the benefits of such a reduction to ECR Basic letters and flats. In fact, it struck me that the Fairness and Equity criterion in § 3622(b)(1) required that these rate cells be treated ratably with respect to any such reduction. Third, the unit cost for ECR Basic letters is not all that high. It makes no sense to offer ECR Basic letters as a bona fide rate classification and then use

rate design to eliminate it totally as a realistic alternative (*i.e.*, by having a rate-cost relationship that is dramatically out of line with other rate-cost relationships within the subclass).

Response of VP-CW Witness John Haldi to Interrogatory of Newspaper Association of America

NAA/VP-CW-T1-13.

Please refer to your testimony at page 29, lines 14-17. Please confirm that the Postal Service in this case does not propose to use the same costing methodologies as the Commission used in Docket No. R97-1. Please further confirm that, as a result, the cost coverages recommended by the Commission in Docket No. R97-1 to those in the testimony of witness Mayes are not based on a consistent approach.

Response:

I confirm that when underlying cost methodologies differ, some inconsistencies are bound to occur when comparisons are made between dockets. In my testimony, I have emphasized the problems that arise in working solely with coverage or markup percentages, and have suggested that comparisons of unit contributions should also be used as an important check. For example, unit contributions of Standard A ECR and Regular Mail (based on Postal Service methodology and CRA costs) project an unambiguous picture of the relationship between the two subclasses in terms of their institutional contributions (cents):

	1998	1999
Standard A ECR Mail	8.7	7.6
Standard A Regular Mail	6.0	5.3
Difference	2.7	2.3

In this particular regard, I would appear to be in agreement with the testimony of NAA witness Tye in the current docket, in which he states: "It is important to consider unit contributions. First, they highlight the actual contribution being made by the average piece."[4]

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[4] NAA-T-1, p. 42, ll. 2-3.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-1.

Please refer to page 16 of your testimony where you allocate tallies in the 3.0 to 3.5 ounce range.

a) Identify all documents in this docket that led you to quantify 60 percent of tallies in the 3.0 to 3.5 ounce to letters and 40 percent to the 3.3 to 3.5 ounce range. Provide citations for any documents identified in your response.

b) Confirm that the rate for letter-rated ECR pieces is currently below that for ECR pound-rated pieces at a given density tier.

c) Confirm that the current rate for an ECR saturation nondropshipped letter is 13.0 cents. If not confirmed, please provide the correct figure.

d) Confirm that the current rate for a 3.5 ounce ECR saturation nondropshipped piece is 14.8 cents. If not confirmed, please provide the correct figure.

e) Confirm that there is a 1.8 cent incentive for 3.5 ounce ECR saturation nondropshipped piece to become eligible for the letter-size rate. If not confirmed, please explain.

f) Since there is a lower rate for ECR pieces in the letter category, is it reasonable to conclude that mailers might choose to manage the weight of their pieces so that they pay the lower letter rate? Please explain your response.

g) Please confirm that, given the rate incentive in subpart (f), it would be reasonable to expect that a greater proportion of tallies would be categorized within the 3.0 to 3.3 ounce range than the 60 percent figure presented in your testimony. Please fully describe any nonconfirmation.

Response:

(a) I understand that this question, directed to page 16 of my testimony, intends to refer to my assumption that 60 percent of the tallies in the 3.0 to 3.5 ounce range identify mail items with weights that fall into the 3.0 to 3.3 ounce subrange, *i.e.*, letters, and 40 percent with weights that fall into the 3.3 to 3.5 ounce subrange, *i.e.*, flats. My assumption was not based on any

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

Postal Service documents because I was unable to find any documents that provided detail on the number of tallies within the above subranges.

(b) Cannot confirm. The statement is false for Basic.

(c) Confirmed.

(d) Confirmed.

(e) Confirmed.

(f) Yes, if they decided to substitute mailing something different from what they are currently mailing. They would have to find a way to reduce the weight, which might be accomplished by using lighter weight paper, or reducing the size and/or contents of the mailpiece. The cross elasticity of substitution between the volume of this "something different" and current mailings may vary quite substantially. Since there is no clear definition of what this "something different" might be under varying conditions, much less statistical estimates of the magnitude of the cross-elasticity under such varying conditions, the simplest assumption seemed reasonable under the circumstances; namely, that within the 3.0 to 3.5 ounce weight range, the number of tallies varies linearly, the assumption I used in my testimony. Any other "non-linear" assumption would have been at least as arbitrary, if not more so, given the lack of information on the distribution within the 3.0 to 3.5 ounce weight range.

(g) See my response to part (f).

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VPCW-T1-2.

You state on page 17 of your testimony that letter shaped-pieces with DALs "clearly exist within ECR." In support of this proposition, you cite a cross-examination exhibit VP-Moeller-XE-1 at Tr. 10/4137-38.

a) Confirm that this is the exhibit that was introduced at the April 24, 2000 hearing. If not confirmed, please explain.
b) State whether you were the recipient of the mailpiece that is marked as Exhibit VP-Moeller-XE-1.
c) If your answer to subpart (b) is affirmative, state whether the copies cited in your response at 10/4137-38 represent the entirety of the contents of the mailpiece, and state the basis for your response.
d) At the time you prepared your testimony, did you have first-hand knowledge that the contents of the mailpiece that is marked as Exhibit VP-Moeller-XE-1 were in fact those that were represented to be in the exhibit at the April 24, 2000 hearing when the exhibit was transcribed? If affirmative, state the basis of your response.
e) Is it your understanding that the cross-examination exhibit included a DAL?
f) Does page 2 of the cross-examination exhibit contain an address that meets the specifications for DALs? Please explain your response.

Response:

(a) Confirmed.

(b) I was not the addressee.

(c) n.a.

(d) I had personally seen the mailpiece, and it is my understanding that the mailpiece in Exhibit VP-Moeller-XE-1 was delivered, in conjunction with a DAL, to the addressee on the DAL. I do not know what the rest of the question means.

(e) When delivered, it is my understanding that it included a DAL.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

(f) No. Page 2 of the cross-examination exhibit is not the DAL; it is the envelope that was inside of the newspaper-type wrap shown in the first page of the exhibit.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-3.

You state on page 17 of your testimony that you have "conservatively assumed that only 1.0 percent of the total ECR flats volume in FY 1998 consisted of mismatched DAL mailings."

a) Confirm that you are assuming that one percent of all ECR flats are actually letter shaped pieces mailed with DALs. If you cannot confirm, please explain.
b) Confirm that you are applying this assumption to Basic and High-Density nonletters. If you cannot confirm, please explain.
c) Is it your understanding that DALs are frequently used for pieces in the Basic tier? Under what conditions would DALs be used for Basic rated letters?
d) In preparing for your written testimony, did you have discussions regarding volumes of letter-shaped DAL mailings with persons having knowledge about this subject?
   (i) If so, identify separately each of the person(s) you interviewed or had discussions with by name, title and organization.
   (ii) Provide copies of any notes of conversations that you had with such persons (exclude any privileged attorney-client communications).
e) In preparing your written testimony, did you review any studies, analyses, or other data concerning the 1.0 percent assumption?
   (i) Identify each piece of information that you considered by title, date, and author; and
   (ii) Provide a copy of each piece of information that you considered.
f) Was the 1.0 percent figure based on a calculation? If so, please show the derivation of the 1.0 percent figure.
g) Explain why the 1.0 percent figure has two significant digits.
h) State whether you conducted any review or analysis of IOCS tallies to arrive at the 1.0 percent assumption.

Response:

(a) Confirmed.

(b) Confirmed; I am applying this assumption to all ECR nonletters.

(c) No. My understanding is neither that DAL's are frequently used nor that they are infrequently used. With respect to the second question posed, I am

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

unaware of any standards in the DMM. Also see my response to USPS/VP-CW-T1-5.

(d) No. I was unable to find anyone knowledgeable about the volumes of letter-shaped DAL mailings. I am unaware of any data or statistics available from the Postal Service concerning the volume of DAL mailings of any shape.

(e) No. I have not been able to locate such studies, analyses, or other data. To the best of my knowledge the Postal Service has not produced any such studies, analyses, or other data concerning the volume or cost of handling DAL mailings.

(f) No. It was based on the confirmed existence of letter-shaped pieces mailed with DAL's. Given the fact that such mail pieces do exist, together with the absence of any effort by the Postal Service to quantify the frequency of occurrence of such mail pieces, I regard one percent as a conservative minimal estimate of the relevant volume. The Commission's use of this minimal estimate when formulating its recommendations might serve to motivate the Service either to eliminate this irregularity in its operations, or else, to undertake credible statistical estimation of the volumes involved. In my judgment, ignoring the existence of such mailpieces is unfair and inequitable.

(g) I attach no statistical significance to the presentation format of two significant figures in the text, and wish to state that when utilizing the

numerical designation for "one percent," I find a single significant figure entirely acceptable.

(h) No. My understanding of the instructions in USPS-LR-I-14, Handbook F-45, is that when IOCS tally clerks sample someone handling DALs, they are to record the dimensions of the mailpiece that accompanies the DAL, but they do not indicate that the piece sampled was part of a DAL mailing. Based on this understanding, I do not know how anyone could review IOCS tallies to analyzed any aspect of DAL mailings.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-4.

Please see your testimony at Appendix A, page 1, where you refer to IOCS instructions regarding the tallying of pieces with a detached address label (DAL). In preparing your testimony, did you attempt to determine, for any time period, the number of tallies that involve a piece that is both letter-shaped and associated with a DAL?

Response:

No. As explained in my response to USPS/VP-CW-T1-3(h), I do not understand how anyone even could begin to analyze either the cost or other characteristics of DAL mailings from the information recorded in IOCS tallies.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-5.

Please see your testimony at page A-9, lines 9-10 where you state that letter-shaped mail can be sent with a DAL if it is loose, but not if it is enveloped. Please provide citations to the Domestic Mail Manual that support this statement.

Response:

For the above-referenced statement in my testimony, I relied upon (i) the fact that the Postal Service accepts pieces such at the one in Moeller-XE-1, and (ii) witness Kingsley's response to VP-CW/USPS-T10-7, which states that "Letters cannot be mailed with DALs, so pieces must qualify as and pay the flat rate to be eligible."

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-6.

Please refer to your testimony at page 17, lines 12-13 where you describe your adjustment to the unit costs of letters and flats as "relatively minimal". Please confirm that your "relatively minimal" adjustment leads to a 97% increase in the letter/flat differential at the saturation tier. If not confirmed, please explain.

Response:

Confirmed. The point of my testimony is precisely that a small error in classification can lead to a substantial error in the letter/flat differential. This sensitivity is to be mathematically expected regarding any variable of relatively modest size that is the difference of two substantially larger numbers, and which is doubled when the error involves mistakenly shifting a fraction of one of the larger numbers to the other larger number.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-7.

You state on page 19 note 13 that your proposed $0.661 pound rate for ECR "will avoid having the anomalous situation of an ECR pound rate which exceeds that of the Regular subclass."

a) Please explain how it would be anomalous for the ECR pound rate to exceed the Regular pound rate.
b) Do you agree that it is desirable to keep the pound rate for ECR at or below that for Regular? Please explain your response.

Response:

(a) See my response to NAA/VP-CW-T1-1(b).

(b) In this docket, I agree with the desirability of keeping the pound rate for ECR at that for Regular because, having rejected witness Daniel's weight-cost studies, no evidentiary basis exists to support a reduction in the pound rate. Concerning the latter point, see my response to MOAA/VP-CW-T1-2.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-8.

Please see your testimony at page 21, lines 10-12. You state: "[i]n Docket No. R97-1, the Commission used an 85 percent passthrough to establish destination entry discounts for Standard A Mail. Witness Moeller provides no justification for his systematic reduction in the 85 percent passthrough."

a) Please confirm that the Commission deviated from 100% to 85% passthrough for destination entry discounts in Docket No. R97-1. If not confirmed, please explain.

b) Please provide what you believe to be the Commission's justification in Docket No. R97-1 for departing from the Docket No. MC95-1 100% passthroughs for destination entry discounts that formed the basis of the then-current discounts. Provide citations for your response.

Response:

(a) Confirmed.

(b) See Docket No. R97-1, *Opinion and Recommended Decision*, ¶5501, where the Commission states that "a higher passthrough would increase basic rates."

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-9.

Please refer to your testimony at page 24 line 14, where you propose a ECR pound rate of 66.1 cents.

a) Please confirm that the current ECR pound rate is 66.3 cents.
b) Please provide your understanding of the underlying quantitative support for the current level of the ECR pound rate.
c) Using your analysis from subpart (b), please show why your proposed rate of 66.1 cents is superior to either the current 66.3 cents or the Postal Service proposed pound rate of 58.4 cents.

Response:

(a) Confirmed.

(b) My understanding of the quantitative support underlying the current pound rate, or any other pound rate that might be proposed by the Postal Service, is that it lacks credibility because the Postal Service has failed repeatedly to produce a credible study of the weight-cost relationship. Given the Service's failure to produce a credible weight-cost study, going back over several rate cases, no substantial deviation from the current rate can be justified, especially not a major reduction in the pound rate while there is an average increase of 4.9 percent for the ECR subclass. Also see my response to MOAA/VP-CW-T1-2.

(c) See my response to NAA/VP-CW-T1-1. As explained there, I consider the pound rate for Standard A Regular to be an upper bound on the ECR pound rate. I do not maintain that my proposed rate of 66.1 cents is superior to the current rate of 66.3 cents. Should the Commission reject witness Moeller's

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

proposed reduction in the pound rate for Standard A Regular, 66.3 cents would be an appropriate pound rate for ECR in this docket.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-10.

Please refer to page 22 of your testimony where you present the proportion of Standard Mail (A) that received destination entry discounts. You state: "[i]n 1998, the amount of all Standard A Mail that received destination entry discounts was 62 percent by volume, and 71 percent by weight."

a) Please confirm that one possible explanation for the large participation in these discounts is that the discounts are overstated. Please fully describe any negative answer.

b) Please describe how the proportion of mail claiming destination entry rates gives you guidance into the appropriateness of the level of the discounts.

Response:

(a) I am uncertain how to interpret the term "overstated," but I will endeavor to answer the question as best I can. The discounts are based on the Postal Service's avoided transportation and dock handling costs. Based on the large participation in these discounts, it would appear that the Postal Service's avoided costs for transportation and dock handling are high in relation to costs for comparable services available from competitive private sector firms. Those lower costs, in turn, could reflect the fact that private carriers achieve greater utilization of their vehicles than does the Postal Service. Such utilization would likely make private sector transportation more economical than Postal Service transportation (I am informed that vehicle utilization is the key to achieving lower unit costs in ground transportation). Basing the destination entry discounts on Postal Service costs avoided thus promotes lowest combined cost and social efficiency, and

under these circumstances I would not describe the discounts as "overstated."

(b) Widespread usage indicates that (i) demand for the discount is elastic, and (ii) the discount is doing what it is intended to do; *i.e.*, promote worksharing, lowest combined cost, and social efficiency. Although elasticity of demand for the discount alone does not determine the appropriate amount of the discount, it is a consideration when establishing the appropriate level of the passthrough. For example, if utilization of the discount were highly inelastic with respect to the level of the passthrough, one might use that fact to argue for a lower passthrough. At the time of Docket No. R97-1, the presorted Priority Mail discount had low utilization. One solution might have been to increase the level of the presort discount in an effort to promote greater utilization, but the other solution, which was used instead, was to eliminate the discount and discontinue presorted Priority Mail.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-11.

Please refer to your testimony at page 18, lines 14-15, where you refer to "drastic reduction" in the pound rate proposed by the Postal Service.

a) Please confirm that the reduction to which you refer is the proposed 7.9 cent reduction in the ECR pound rate. If you cannot confirm, please describe the reduction you are referring to, and the level of that reduction in terms of cents per pound.

b) Please confirm that in Docket No. R97-1, the Postal Service proposed a reduction the in ECR pound rate of 13.3 cents in the ECR pound rate. If you cannot confirm, please provide what you believe to have been the proposed reduction.

c) Please confirm that in Docket No. R97-1, your testimony on behalf of Val-Pak Direct Marketing Systems, Inc., Val-Pak Dealers' Association, Inc., and Carol Wright Promotions, Inc. recommended that the Commission adopt a conservative approach and accept the Postal Service's proposed pound rates for Standard Mail A. If you cannot confirm, please explain.

d) Specifically, confirm that at page D-11 of your testimony (Tr. 27/15162) in Docket No. R97-1, you stated:

> it is recommended that the Commission adopt a conservative approach and accept witness Moeller's proposed pound rates for Standard Mail A.

If not confirmed, please explain.

Response:

(a) Confirmed that the absolute amount of the reduction is 7.9 cents, which amounts to a reduction of 11.5 percent. Since piece rates are proposed to go up by an average of over 4.9 percent, in comparison with piece rates, the pound rate is proposed to decline by over 16 percent.

(b) Confirmed.

(c)-(d) Confirmed; see my response to MOAA/VP-CW-T1-2 to understand this issue better.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-12.

Please see your testimony at page 22, lines 7-10. You state, "[a]lthough it is not possible in this docket to recognize any weight-related cost avoidance from presortation, maintaining the destination entry passthrough at least equal to 85 percent of avoided cost gives recognition to cost avoidance that is documented to be weight-related."

a) Please confirm that it is your belief that there are weight-related cost savings due to presort. If you cannot confirm, please explain.
b) Please confirm that presort discounts are on a per-piece basis.
c) Is it your contention that, all else equal, the presort discounts therefore under-reward presortation of heavier pieces relative to lighter pieces? If this is not your contention, please explain.
d) Is it your contention that, all else equal, the presort discounts "over-reward' presortation of lighter pieces, relative to heavier pieces? If this is not your contention, please explain.
e) Is it your belief that the destination entry discounts, which are based on weight, compensate for situations described in subparts (c) and (d)?
f) Please confirm that the destination entry discount for a one-ounce piece is based on a weight of 3.3 ounces. If you cannot confirm, please explain how the destination entry discount for a one-ounce piece is established.
g) Do destination entry discounts also "over-reward" lighter weight pieces relative to heavier weight pieces? Please explain your response.

Response:

(a) Confirmed.

(b) Confirmed.

(c)-(d) As explained in my Appendix B, this appear to be the case. Also see my response to NAA/VP-CW-T1-3. To the extent that weight-related costs are included in the existing per piece discounts, this would be the case. To the extent that weight-related costs are not reflected in the existing per piece discounts, the failure to estimate weight-related costs that are avoided by

presortation and destination entry would disadvantage heavier weight pieces more than lighter weight pieces.

(e) No. It is my belief that the destination entry discounts are appropriately based on weight, hence I do not view those discounts as "compensating" for the situations described in subparts (c) and (d).

(f) Confirmed.

(g) With respect to piece-rated mail pieces that weigh between less than 3.3 ounces, the Postal Service and the Commission have long followed this practice to prevent anomalies. However, basing the destination entry discounts on a weight of 3.3 ounces can be seen giving a higher passthrough to lighter weight pieces relative to heavier weight pieces. Above the 3.3 ounce breakpoint, the destination entry discounts increase proportionately with weight.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-13.

Please see your testimony at page 22, line 11, where you state that a reason to maintain the destination entry passthroughs at 85 percent is because "mailers respond to such discounts."

a) How does whether mailers "respond" to discounts provide guidance on the passthrough level?
b) Is the only basis for moving away from 85 percent passthrough a situation where mailers do not respond to such discounts?

Response:

(a) Please refer to my response to USPS/VP-CW-T1-10 and NAA/VP-CW-T1-4.

(b) No. My testimony, page 23, lines 9-16, gives current fuel price increases as a possible "reason which supports maintaining the passthrough at 85 percent **or higher**." On page 24, lines 10-13, I state: "Maintaining the passthrough **at least** equal to 85 percent ... will provide benefits to every category of Standard A ECR Mail...." (Emphasis added.) A passthrough of 100 percent comports with the efficient component pricing paradigm, and is generally considered desirable from the viewpoint of social efficiency. Also see my response to USPS/VP-CW-T1-14.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-14.

Please see your testimony at page 23, lines 1-5. You state that:

> [m]aintaining the passthrough at a level at least equal to 85 percent will retain the incentive for Standard A mailers to continue taking advantage of destination entry discounts, and also will retain the incentive for transportation companies, including those that specialize in consolidating shipments.

Is it your testimony that anything less than 85 percent passthrough will not retain the incentive for mailers to continue to take advantage of destination entry discounts? Please explain your response.

Response:

No. A passthrough less than 85 percent will reduce the incentive, and a passthrough of more than 85 percent will increase the incentive. The incentive to dropship varies with the unit cost of sending mail to those destinations to which each mailer wishes to direct mail (for truckload lots, the unit cost of transportation from the private sector will vary with distance and density of the mail; for less-than-truckload lots, the size of the mailing can also be an important consideration). Mailers will be motivated to undertake some destination entry even at low discount levels; *e.g.*, mailers located in the vicinity of an SCF or DDU will dropship such portions of their mail as may be destined for areas served by the respective SCF or DDU. Mailers will arrange to transport their mail to more distant SCF or DDU locations to the extent that the discount exceeds their marginal transport costs. Each mailer can readily compute the distance within which it pays to dropship, and beyond which it pays to enter the mail locally and let the Postal Service transport it.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

Bypassing of BMCs is said to result in more reliable service for Standard A Mail. Also, many postal facilities are rumored to be overcrowded (especially during busy mailing seasons) and undersized (many facilities have had to open separate annexes). Dropshipped mail that bypasses such facilities relieves the overcrowding and helps the Postal Service improve the service which it provides to all of its customers, including those who cannot take advantage of destination entry. I would further note that the Postal Service is not known to be engaged in any massive construction program designed to increase capacity and relieve congestion. Continued growth in volume could even be more of a bane than a boon for the Postal Service. In my judgment, reduction of the passthrough below 85 percent will adversely impinge on the incentives for a sufficiently broad class of current mailings to make such a reduction ill-advised.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-15.

Please see Table A-2 of your Appendix A. Confirm that your estimates of flat costs used in your letter/flat differentials are for pieces weighing from 0-16 ounces. If you cannot confirm, please define the weight range of the flats, or nonletters, represented by the cost estimates.

Response:

Confirmed.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-16.

Please see your testimony at page B-5, lines 17-19, where you state:

> the weight-cost relationship for saturation ECR mail likely differs from that for Basic ECR mail, which in turn, may be quite different from Basic Presort or Basic Automation.

In your opinion, would the weight-cost relationship be stronger (that is, costs increase more rapidly with weight) for ECR Saturation, or Regular Basic Presort? Please explain your response.

Response:

First, a matter of terminology. If two (or more) weight-cost relationships are thought of as being established by means of a statistical study with a number of observations underpinning each such relationship, I would characterize the relationship with the best statistical fit as the "stronger" relationship, regardless of whether it showed costs increasing more rapidly with weight than the other relationship(s).

As discussed in my Appendix B, the farther that mail has to be transported, and the more that it has to be loaded, unloaded and cross-docked, the more will such mail incur weight-related costs. Thus, for just one of the categories mentioned in your question, several weight-cost relationships will exist. For ECR Saturation Mail, this is illustrated in Figure A, which shows cost on the vertical axis and weight on the horizontal axis. The lowest line, designated "DDU," reflects the (unknown) cost of handling weight within and beyond the DDU. At a weight of 16 ounces (1 lb.), the vertical difference between the lines indicated by "Origin" and "DDU" is the full unit cost difference computed by witness Crum (USPS-T-27) in Attachment B, Table 9 and Attachment C, Table 1 (*i.e.*, $0.1329 +

$0.0399 = $0.1728). At 16 ounces, the differences between the lines indicated by "DSCF" and "DMBC" are the differences in destination entry costs computed by witness Crum.

A similar chart for Regular Basic Presort would also have multiple weight-cost relationships, depending upon where the mail is entered. Comparisons between any two rate categories, such as those mentioned, without stipulating where the mail is entered within the postal network, is therefore at best, highly complex.

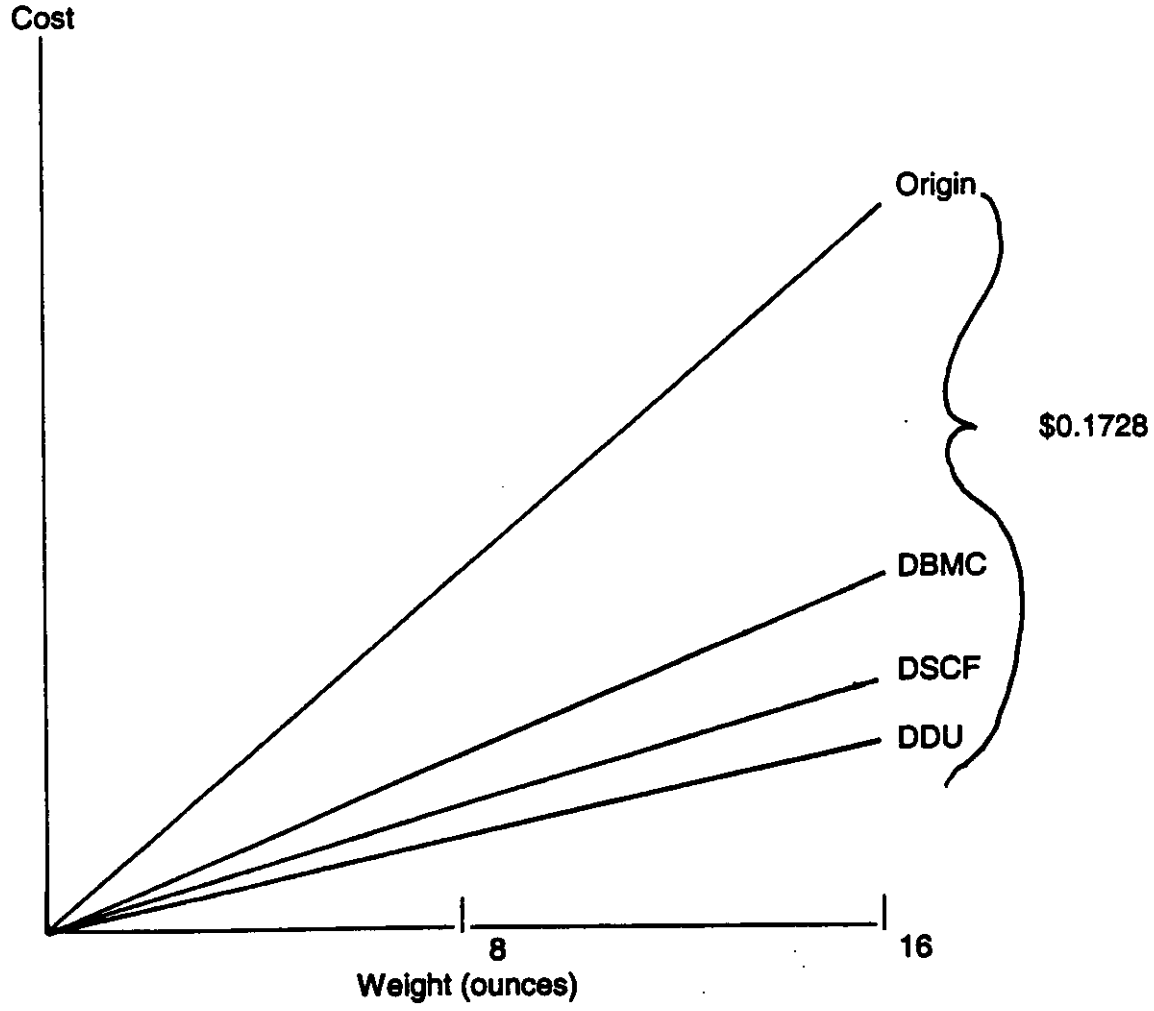
On the assumption that the question posed was intended to ask me to compare two mailings, ECR Saturation with Regular Basic Presort, where both are entered at the same point (*e.g.*, "Origin," the top line in Figure A), then my response is as follows. On a unit cost basis, both mailings would be expected to incur the same transportation and cross-docking costs from Origin to DDU. Further, as explained in my Appendix B, as the Regular Basic Presort mail is processed and moved through facilities intermediate to the DDU, I would expect it to incur some unknown amount of additional weight-related mail processing costs, which is avoided by the ECR Saturation mail by virtue of bypassing all handling within those intermediate facilities. That is, the Regular Basic Presort mail would incur weight-related mail processing costs that are in addition to those incurred by the ECR Saturation mail. Graphically, the line for Regular Basic Presort "Origin" would be above that for ECR Saturation "Origin," and for Regular Basic Presort, I suppose one could say that costs increase "more rapidly" with weight.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

Attachment to Response to USPS/VP-CW-T10-16

Figure A

Weight-Cost Relationships for ECR Saturation Mail



Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-17.

On page B-24, lines 20-21, of Appendix B to your testimony you state, "Tallies from non-weight driven functions should not be used to distribute the costs of weight-driven functions."

a) Please specify which of the mail processing cost pools listed in Table 1 of witness Van-Ty-Smith's testimony, USPS-T-17, represent "weight-driven functions" according to your definition and which do not. Please also provide a brief discussion of the rationale for each classification.

b) For each cost pool you classify as representing "weight-driven functions," please indicate your understanding as to how tallies from cost pools representing "non-weight driven functions" are used to develop the distribution keys for its volume-variable costs.

Response:

(a)-(b) I did not need to perform such an analysis when preparing my testimony, and I am not sufficiently familiar with all the activities performed within each MODS cost pool to conduct such an analysis. I do not know whether personnel from one MODS pool or another are responsible for transporting the mail from one operation to the next. The answer to this question would help form the foundation for a study of the type which I propose in my Appendix B, page B-26.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-18.

On page B-6, lines 11-14, of Appendix B to your testimony you state, "[a] second implication is that any study which randomly mixes tallies from the least presorted mail to the most presorted mail is likely to yield a result that, at best, is useless and, at worst, is hopelessly confused and even misleading.

a) What, precisely, is the "study" to which the statement refers?

b) Does your statement that the study "randomly mixed tallies" from various presort categories imply that you believe that IOCS tally data do not distinguish presort level for non-ECR Standard Mail (A)? If not, please explain in detail the mechanism by which you believe the "study" to which you refer "randomly mixes tallies from the least presorted mail to the most presorted mail."

c) Please explain whether or not you disagree with the testimony of witness Ramage at page 3, lines 16-19, of USPS-T-2, where witness Ramage states that, "[t]he In-Office Cost System uses a probability sample of employee activity to develop estimates of employee work time spent on various office functions, and for certain functions, *the proportion of time spent handling and/or processing specific mail categories.*" (emphasis added). If you disagree, please specify in detail the basis for your disagreement.

d) Please explain in detail how the CRA mail processing cost methodology, as you state at page B-11, line 15, "may reasonably trace cost causation to the subclasses," but not, at the same time, be able to "trace cost causation" to other observable categories of mail recorded in IOCS.

Response:

(a) The phrase "any study," as it appears at page B-6, line 11, of my testimony is intended to refer to studies of the weight-cost relationship that are based on IOCS tallies and are of the type submitted by the Postal Service in prior dockets, as well as the studies submitted by witness Daniel in this docket.

(b) My phrase, "randomly mixed tallies," which you cite, is perhaps too brief. A better (and longer) way to express what I intended would have been the following: "Any study which **fails to isolate and analyze separately** tallies

from the least presorted mail to the most presorted mail **randomly mixes different weight-cost relationships** and is likely to yield a result that, at best, is useless and, at worst, is hopelessly confused and even misleading."

(c) Agree.

(d) When workers are observed removing the shrink wrap material from pallets of Standard A Mail, for example, it is only necessary that the subclass (and rate category) of mail be identified in order to trace cost causation reasonably to the subclass (and rate category). An accurate identification can be made from the label(s) on the palletized mail.

I am not entirely certain what you intend by the phrase "other observable categories of mail recorded in IOCS." On the assumption that you mean other observable characteristics, such as weight, I will endeavor to provide a responsive answer. To use the above example of removing shrink wrap material from pallets of Standard A Mail, it would be necessary for the tally to record the weight of the mailpiece(s). That information, however, is often not readily available. When that occurs, the cost of these tallies is distributed on the basis of other tallies where weight was recorded; *i.e.*, use of a "proxy" is required. Whenever a proxy is used to distribute costs in this manner, an implicit assumption being made is that the weight-cost relationship in the activity where weight was recorded is the same as, or at

least very similar to, the weight-cost relationship in the function where weight was not recorded. To the best of my knowledge, there has been no study to establish the foundation for such an assumption, and under the circumstances I consider it to be "heroic." It is my opinion that (i) some activities, such as transportation and cross-docking, can properly be considered as almost entirely weight-related, whereas (ii) other activities are properly classified as almost entirely piece-related. Using the latter as proxies to distribute the cost for the former (over the relevant range of different weights for the subclass being studied; *e.g.*, 11 to 13 ounces for First-Class Mail, 16 ounces for Standard A Mail) does not, in my opinion, reasonably trace cost causation to effect of weight.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-19.

On page B-10, line 18, to page B-11, line 1, you state that, "[d]irect tallies tend to reflect that when pieces are being handled individually, a heavy-weight piece can be handled at approximately the same rate (and cost) as a lighter- weight piece."

a) Please describe in detail and provide all analysis of "direct tallies" you have performed, or provide detailed citations to any other analysis that provides quantitative support for your statement.

b) In footnote 49, you cite witness Daniel's response to ABA&NAPM/USPS-T28-28, Tr. 4/1188, where she indicates that heavy pieces are more likely to "result in jams." Please confirm that witness Daniel's response at Tr. 4/1188 enumerates several other ways in which "throughput of OCRs and BCSs is affected by weight." If you do not confirm, please explain.

Response:

(a) I have not performed any analysis of direct tallies.

(b) Partially confirmed. Where witness Daniel's response indicates that heavy pieces are more likely to "result in jams," her reference to "heavy pieces" is in the context of throughput of OCRs and BCSs, which are generally identified with the processing of letters. Elsewhere in that same response, her references are exclusively to letters. Thus, although she mentions "heavy pieces," she does not appear to be talking about flats. I have also seen it said by Postal Service witnesses that (i) lightweight non-standard shaped letters (*e.g.*, square letters) tend to tumble and cause jams, and (ii) light weight (under 1 ounce) flats, or "flimsies," cause jams of flat sorting equipment, both of which would tend to equalize the average cost of sorting lightweight pieces in relation to the cost of sorting heavier pieces.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-20.

On page B-5, lines 3-5, you state, "for a given presort condition, the weight-cost relationship would, in general, appear to be continuous and monotonic."

a) If letter-shape pieces above a given weight are incompatible with automated sorting equipment and must instead be sorted manually, would you expect the weight-cost relationship for letters (and for a given "presort condition") to necessarily be continuous? If your response is affirmative, please explain.

b) If flat-shape pieces below a given weight are incompatible with automated sorting equipment and must instead be sorted manually, would you expect the weight-cost relationship for flats (and for a given "presort condition") to necessarily be monotonic? If your response is affirmative, please explain.

Response:

(a) No, not necessarily. I would note that the question in USPS/VP-CW-T1-19 refers to witness Daniel's response to ABA&NAPM/USPS-T28-28, Tr. 4/1188, citing her many reasons why unit processing may increase, perhaps sharply, as the weight of letters increases and approaches the maximum weight for the Postal Service's automated letter sorting equipment. If witness Daniel is correct, any discontinuity between machine processing and manual sortation may be small, especially for highly presorted letters, and relatively inconsequential.

I would further note that the question asks about "letter-shape" pieces, presumably referring to pieces with letter dimensions that weigh up to 16 ounces, as opposed to "letters," which have had a maximum weight of about

3.3 ounces (proposed to go to 3.5 ounces for some letters). When studying the weight-cost relationship, it strikes me that relevant data for any pieces that pay the non-letter rate should be included in cost of non-letters; *i.e.*, I am not sure what purpose is achieved by costing separately letter-shaped pieces above the breakpoint.

(b) No, not necessarily. I assume that the question is referring to light-weight flats that weigh less than one ounce ("flimsies") and pay the nonstandard surcharge. In the hypothetical posed in the question, the cost of processing flats in the 1 to 16 ounce range likely would appear to be monotonic, but not over the 0 to 16 ounce range.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-21.

On page B-13, lines 16-17, you indicate that an employee sampled in IOCS while handling a hamper of non-identical mail would "be recorded as handling mixed mail." You state that "no real basis exists for distributing such mixed mail tallies on the basis of weight increment."

a) Please confirm that the tally for the container handling you describe would, normally, indicate the portion of the container occupied by loose letters, loose flats, bundles, trays, etc. If you do not confirm, please explain.

b) If the mixed-mail hamper to which you refer were recorded as containing letter-shape mail, would it be reasonable to assume that the pieces therein have a different weight distribution than would obtain if the hamper were recorded as containing flat-shape mail? If not, why not?

Response:

(a) Confirmed.

(b) Yes, it would be reasonable to assume that the distribution of letter-shaped mail by 1-ounce increments differs from the distribution of flat-shaped mail by 1-ounce increments.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-22.

Please see your testimony at page B-28, lines 9-19, where you discuss the relationship between presort and destination entry discounts.

a) Please confirm that it is your position that the presort discounts are deficient in that they do not recognize weight-related presort savings. If you cannot confirm, please state any criticisms you have of a piece-based presortation discount.

b) Please confirm that it is your position that since certain rate elements (in this instance, the presort discount) are somewhat deficient in that they do not specifically reflect perfectly the pattern of cost savings, you advocate using another rate element (in this instance, the destination entry discounts) as a means to offset the alleged deficiency.

Response:

(a) Confirmed. See my response to NAA/VP-CW-T1-3. To the extent that weight-related presort cost avoidances are captured through the MODS cost pool analysis, they are distributed on a per piece basis. And to the extent that weight-related cost avoidances exist but are not captured, they are not recognized in the per piece discounts.

(b) Cannot confirm or disconfirm, because I have not considered the problem in general terms. Moreover, I do not have a clear understanding of what you mean by "offset." In the context of presort discounts versus destination entry discounts, I did not recommend a passthrough in excess of 100 percent, which might be interpreted as some kind of "offset." I did recommend a higher passthrough than witness Moeller as a way of giving

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

fuller recognition to weight-related cost avoidance that has been well-documented and accepted over several rate cases.

Response of VP-CW witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-23.

Please refer to Section IV.B of your testimony where you discuss unit contribution. Is it your belief that unit contribution within a subclass should be uniform across rate categories or rate cells, if possible? Please explain any negative response.

Response:

The issue raised in your question was discussed at some length in my testimony in Docket No. R97-1, VP/CW-T-1, where I developed bottom-up unit costs for each rate cell. In designing rates based on such unit costs, I proposed that a uniform unit contribution sufficient to achieve the revenue target be added to my bottom-up unit costs. This puts all mailers within a subclass on an equal footing as regards unit contribution. At that time I could not think of any rate design principle that would justify deliberately charging mailers who predominantly use one rate cell within ECR a higher (or lower) unit contribution than those mailers who predominantly use some other rate cell.

Let me hasten to add the following qualification. Unless and until the Postal Service faces more competition for delivery, I see no good reason for departing from an equal unit contribution within a subclass. Assuming active competition, however, I could readily imagine circumstances where an equal unit contribution would no longer be appropriate; *i.e.*, the Postal Service would need to adjust rates to protect and preserve those volumes that are most contested. This qualification was also discussed in my prior testimony, but more in the context of comparisons between subclasses.

Response of VP-CW Witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-24.

a. Please refer to page 2 of the A/P 8 Financial and Operating Statements (FOS) and confirm that the Postal Service is currently $333.1 million below its planned net income through A/P 8 PFY 2000. Please also confirm that the A/P 9 FOS, which will be available by the deadline for answering this question, shows that the Postal Service incurred a loss of $154 million in A/P 9 and the year-to-date plan shortfall grew to $420.4. If you do not confirm, please explain.

b. Please confirm that even if the Postal Service can reverse this trend of below plan results and achieve its plan for the remainder of the year, it will suffer a plan shortfall and incur a loss for FY 00, instead of the planned net income of $100 million reflected in the response to ANM/USPS-T9-41. If you do not confirm, please explain.

Response:

(a) Confirmed as to the FOS for A/P 8 and 9.

(b) Confirmed if the Postal Service just achieves its plan, and no better, for the remainder of the year. I would note, however, that the Postal Service's Operating Plan for FY 2000, submitted in response to OCA/USPS-T9-27, is to incur substantial deficits during A/Ps 10-13, as shown below.

A/P	Net Income (loss)
10	($217,474)
11	($237,506)
12	($280,979)
13	($348,015)
Total	($1,083,974)

Response of VP-CW Witness John Haldi to Interrogatory of United States Postal Service

The Postal Service's Operating Plan for FY 1999 was somewhat similar, and the FOS for A/P 13, page 4, indicates that in each of the A/Ps 10-13 the Postal Service did better than plan, with a cumulative improvement over plan of some $344 million for those four A/Ps.

Response of VP-CW Witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-25.

Please refer page 33, lines 2 and 3, of your testimony, where you state that the Postal Service's capital investments in excess of depreciation should be funded through borrowing and "not through surpluses intentionally created by a deliberately excessive allowance for contingency."

a. Is there some basis in fact for your allegation that surpluses were *intentionally* created to fund capital investments by deliberately inflating the contingency? If so please provide any factual support that the contingency has been deliberately inflated to fund capital investments.

b. Please confirm that borrowing results in interest expense and adds to the cost of capital investments. If you do not confirm please explain.

c. Please confirm that the cost of interest is borne by rate payers in the form of higher rates. If you do not confirm please explain.

Response:

(a) At the end of FY 1993 the Postal Service's total debt subject to statutory limitation was $9,923 million, and at the end of FY 1997 it was reduced to $5,919 million (*see* ANM-T-1, Table 5, p. 32). During this 4-year period, the Postal Service thus reduced its debt subject to statutory limitation by $4,004 million. During this same 4-year period, the Postal Service recorded gross capital investment of $9,108 million, and net capital investment of $3,969 million (net of amortization and depreciation of $5,139 million); see ANM-T-1, Table 2, page 15. The Postal Service thus had net capital investment of $3,969 million while concurrently reducing outstanding debt by $4,004 million, for a combined total of $7,973 million. The extent to which some of the $7,973 million was funded by the allowance for

contingency cannot be ascertained because the contingency becomes free cash flow which can be put to many different uses; see my response to USPS/VP-CW-T1-26(b).

(b) Confirmed.

(c) Not confirmed. Only if the Service were to waste the money it has borrowed would the cost of interest become a "burden" to be "borne" by the ratepayers, in the sense of an additional outlay that would not have occurred except for the borrowing. If the borrowing makes possible investments that exceed the cost of capital (which includes the interest), and most especially if the return on the investments exceeds the internal hurdle rate of 20 percent, the postal efficiency will increase and mail handling and delivery costs will decrease. Investments are amortized over the life of the investment. The revenue requirement in a Test Year includes both the amortization and the interest cost. If the annual savings exceeds this amount, then the likely effect will be to decrease the total revenue requirement facing ratepayers, including interest cost — **not** increase it.

On the contrary, if borrowing is avoided solely for the myopic purpose of reducing or eliminating interest costs, the result will be a progressive accumulation of inefficiencies that, over time, will impose enormous unnecessary costs on ratepayers, as can be observed today with the woeful

lack of flat sorting capacity, and shortages of space in P&DCs (overcome in part by annexes, with the inefficiencies and higher costs which they entail). For much of the past decade, the Postal Service has delayed needed investments in automation and other efficiency improvements, not just in order to avoid borrowing but beyond that, to reduce debt and annual interest costs. This may have made the balance sheet appear less leveraged, but ratepayers today have to bear the high operating costs imposed by this policy that has put the Postal Service years behind the private sector.

Response of VP-CW Witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-26.

Please refer to page 32, lines 16-19, where you state that "if the Postal Service's capital investment program were approaching the statutory cap with respect to its borrowing limit, and any shortfall in cash flow would operate to curtail that program, there could indeed be a reason for a significant contingency allowance."

a. Is it your testimony that an appropriate use of the contingency is to fund capital investments when borrowing for capital investments is not an option? If your answer is other than yes, please reconcile your answer to your statement above.

b. Please assume hypothetically that the Postal Service is projecting a test year before rates net income before including a RPYL and a contingency, has no available borrowing authority, and will generate insufficient cash to fully fund its capital investments. Under this scenario should the Postal Service add a contingency to create a test year net loss and then file for higher rates in order to fund its capital investments? Please explain your answer.

Is it your testimony that the Postal Reorganization Act permits the use of the contingency to fund capital investments? If your answer is other than no please provide the PRA cite supporting your position.

Response:

(a) The point of my testimony is precisely that it is not appropriate to use an unreasonably high contingency allowance to create excess cash flow for the purpose of funding capital investments. It is, however, an entirely different matter to adjust the size of the contingency allowance to the risks, and the consequences of those risks, inherent in prevailing circumstances. Such risks have to be analyzed to distinguish two components. First is the statistical probability of a cash flow shortfall of any given size. Second is the impact of such a shortfall on the Service's operations. This impact can

and will vary with, for example, depending on whether sufficient available borrowing authority is available to backstop a shortfall in operating cash flow and also undertake desirable and necessary investment programs. When a statistical shortfall in cash flow has the potential of endangering the Service's investment program, which is an extraordinary risk that does not occur in years of ample borrowing authority, it is entirely appropriate to provide a somewhat larger contingency allowance than in years of lesser risk. The Postal Service has, however, not supported the extraordinarily large contingency allowance, included in the present docket, by any explicit analysis or justification.

(b) Such a scenario has never happened, and it appears extremely unlikely, in view of the Service's extreme reluctance to invest in needed capital improvements. Under the unlikely hypothetical posited by the question, the Service is assumed (i) to be operating profitably and (ii) to have a backlog of profitable investments that would be made except for a projected shortfall in cash flow caused by the statutory borrowing limitation. Under these assumed circumstances, the Service first should ask Congress for increased borrowing authority. If that is denied, then it would have to weigh curtailment of the investment program against the desirability of a rate increase.

Response of VP-CW Witness John Haldi to Interrogatory of United States Postal Service

The Postal Reorganization Act does not specify for what the contingency is to be used, or how it is to be used. It is generally regarded as additional revenue which is available to offset errors in forecasting, or for unforeseen unfavorable events. Suppose, however, that the forecast turns out to be accurate, and no unfavorable unforeseen events occur, or favorable events offset and outweigh whatever unfavorable events occurred. Then the additional revenue allowed for contingency will be recorded as "profit" in the Statement of Operations, and in the Statement of Cash Flows the additional revenue will represent free cash flow. I am not a lawyer, but it is my understanding that the Postal Reorganization Act does not require that the Service earmark any funds for contingency, or set up any kind of special reserve for contingency, nor to my knowledge has the Service ever done so. Moreover, I am not aware of any financial statement of the Postal Service that has ever shown any amount as being reserved for contingency. Any free cash flow that arises from the extra revenues allowed for contingency can be used (i) to pay down debt incurred for prior capital investment, (ii) fund operating deficits and extend the time between rate cases, (iii) fund current capital investment, (iv) add to working capital, or (v) be used for other purposes.

Response of VP-CW Witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-27.

Refer to your testimony on page 14 lines 18-20 where you state that "this clearly results in another serious mismatch, since costs of DAL-accompanied letter-shaped mail are systematically charged to letters, while revenues, pieces and weights are systematically charged to flats."

a) In drawing this conclusion, did you consider analyzing the IOCS data files provided by witness Ramage?

b) Would you adhere to your statement even if the data file provided by witness Ramage showed that in FY98 there are zero tallies where the shape in Field F9635 is a letter (IOCS Q22A) and the Field F135 is "Y" (indicating the employee is handling a DAL)? Please explain your response.

Response:

(a) No.

(b) See USPS/VP-CW-T1-2, which discusses cross-examination Exhibit VP-Moeller-XE-1 at Tr. 10/4137-38. As that cross-examination exhibit clearly demonstrates, DAL-accompanied letter-shaped mail exists, hence I have presumed that such pieces are "mailable" matter. At the same time, USPS-LR-I-14, Handbook F-45, makes no provision for recording DALs with such mail. At pages 12-10 and 12-11, under "Detached Address Card," it states that "Detached address cards are the cards that accompany merchandise samples or flats to be delivered by the carrier." (Emphasis added.) This statement makes no provision for a letter-shaped piece with an accompanying DAL.

Response of VP-CW Witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-28.

Refer to your testimony on page 11 lines 6-11, where you state that:

> [w]ithin Standard A Mail, Postal Service data systems systematically overstate the cost of letters while the cost of flats is correspondingly understated. This situation is caused by a mismatch between (i) the way the RPW system records revenue, volume and weight on the one hand and (ii) the way that the IOCS develops mail processing and city carrier in-office costs on the other.

a) Confirm that your conclusion that letter costs are overstated assumes that the unit cost of Standard Mail A are based on RPW volumes.

b) Confirm that the volumes used to calculate the unit cost of letters and flats are from PERMIT and not RPW (see response to interrogatory VPCW/USPS-2).

Response:

(a) Confirmed that my testimony references RPW volumes in a number of places. Not confirmed with respect to the conclusion that the unit cost of "Letters" is overstated; see my response to USPS/VP-CW-T1-29.

(b) Confirmed. Using PERMIT data to compute the unit cost for letters provides the unit cost of all letter-shaped pieces (which includes heavy weight letters), not the cost of letter-shaped pieces that weigh less than the breakpoint and pay the letter rate, *i.e.*, "Letters." In other words, when the unit cost is computed in this manner, it is not the appropriate unit cost for the rate category known as "Letters."

Response of VP-CW Witness John Haldi to Interrogatory of United States Postal Service

USPS/VP-CW-T1-29.

Refer to your testimony at page 12 lines 12-13 where you state that "[f]rom a rate category perspective, the IOCS data are not correct." (Footnote omitted).

a) Please confirm that the another [sic] way to account for the fact that some letter-shaped pieces actually pay the nonletter rate is by moving both the cost of letters greater than 3.0 or 3.5 ounces and the corresponding number of letter shaped pieces as recorded by PERMIT to the cost of nonletters.

b) Assume for the purpose of this question that 3.5 ounces is a reasonable proxy for the breakpoint.

(i) Please confirm that the total cost of letter-shaped ECR pieces weighing more that 3.5 ounces is $13,922 (in thousands) and the corresponding volumes for these pieces are 66,478,655 according to USPS LR-I-92, Section 2 pages 14-5 [sic]. If not confirmed please provide the correct numbers and the sources for these figures.

(ii) Please confirm that the total cost of flat-shaped ECR pieces is $1,512,906 (in thousands) and the corresponding volumes for these pieces are 20,455,078,077 according to USPS LR-I-92, Section 2 pages 17-8 [sic]. If not confirmed, please provide the correct numbers and the sources for these figures.

(iii) If subparts (i) and (ii) are confirmed, please confirm that adding the cost of letters weighing more that 3.5 ounces ($13,922) to the total cost of ECR flat-shaped mail ($1,512,906) results in a cost of $1,526,828 (in thousands). If subparts (i) and (ii) are not confirmed, please provide the above calculations with the numbers provided in subparts (i) and (ii).

(iv) Please confirm that adding the volume of letters weighing more that 3.5 ounces (66,478,655) to the total volume of ECR flat-shaped mail (20,455,078,077) results in a volume of 20,521,566,662. If subparts (i)and (ii) are not confirmed, please provide the above calculations with the numbers provided in subparts (i) and (ii).

(v) If subparts (iii) and (iv) are confirmed, please confirm that $1,526,828 divided by 20,521,566,662 multiplied by 1000 is $0.0744. If subparts (iii) and (iv) are not confirmed please calculate the quotient of the figures provided in subparts (iii) and (iv).

(vi) Please confirm that, according to Table 3 in USPS-T-29, [sic] the average ECR flat-shaped piece cost $0.0740 and the average letter-shaped piece cost $0.0685, for a difference of $0.0054. If not confirmed, please explain.

Response of VP-CW Witness John Haldi to Interrogatory of United States Postal Service

(vii) Please confirm that, according to Table 3 in USPS-T-29, [sic] the average ECR letter-shaped piece weighing less than 3.5 ounces cost $0.0678.

(viii) If subparts (v) and (vii) are confirmed, please confirm that the difference between the unit cost of letters weighing less than 3.5 ounces of $0.0678 and the unit cost of flats which include the cost and volume of letters weighing more than 3.5 ounces as calculated in subpart d of $0.0744 is $0.0066. If subparts (v) and (vii) are not confirmed, please calculate the difference between the figures provided in subparts (vii) and (v).

(ix) If subparts (vi) and (viii) are confirmed, please confirm that the unit cost difference between $0.0066 and $0.0054 is $0.0012. If subparts (vi) and (viii) are not confirmed please calculate the difference between the figures provided in subparts (viii) and (vi).

c) Assume for the purpose of this question that 3.0 ounces is a reasonable proxy for the breakpoint.

(i) Please confirm that the total cost of letter-shaped ECR pieces weighing more that [sic] 3.0 ounces is $36,415 (in thousands) and the corresponding volumes for these pieces are 216,382,951 according to USPS LR-I-92, Section 2 pages 14-5 [sic]. If not confirmed please provide the correct numbers and the source for those figures.

(ii) Please also confirm that the total cost of flat-shaped ECR pieces is $1,512,906 (in thousands) and the corresponding volumes for these pieces are 20,455,078,077 according to USPS LR-I-92, Section 2 pages 17-8 [sic]. If not confirmed please provide the correct numbers and the source for those figures.

(iii) If subparts (i) and (ii) are confirmed, please confirm that adding the cost of letters weighing more that 3.0 ounces ($36,415) to the total cost of ECR flat-shaped mail ($1,512,906) results in a cost of $1,549,322 (in thousands).

(iv) Please confirm that adding the volume of letters weighing more that 3.0 ounces (216,382,951) to the total volume of ECR flat-shaped mail (20,455,078,077) results in a volume of 20,671,460,958. If subparts (i) and (ii) are not confirmed please provide the above calculations with the numbers provided in subparts a and b.

(v) If subparts (iii) and (iv) are confirmed, please confirm that $1,549,322 divided by 20,671,460,958 and multiplied by 1000 is $0.0750. If subparts (iii) and (iv) are not confirmed please calculate the quotient of the figures provided in subparts (iii) and (iv).

Response of VP-CW Witness John Haldi to Interrogatory of United States Postal Service

(vi) Please confirm that, according to Table 3 in USPS-T-29, the average ECR flat-shaped piece cost $0.0740 and the average letter-shaped piece cost $0.0685, for a difference of $0.0054.

(vii) Please confirm that, according to Table 3 in USPS-T-29, the average ECR letter-shaped piece weighing less than 3.0 ounces costs $0.0669.

(viii) If subparts (v) and (viii) are confirmed, please confirm that the difference between the unit cost of letters weighing less than 3.0 ounces of $0.0669 and the unit cost of flats which include the cost and volume of letters weighing more than 3.0 ounces as calculated in subpart (v) of $0.0750 is $0.0081. If subparts (v) and (vii) are not confirmed, please calculate the difference between the figures provided in subparts (vii) and (v).

(ix) If subparts (vi) and (viii) are confirmed, please confirm that the unit cost difference between $0.0081 and $0.0054 is $0.0027. If subparts (vi) and (viii) are not confirmed, please calculate the difference between the figures provided in subparts (vi) and (viii).

d) Please confirm the calculations in subparts b) and c) show that the letter/flat differential is overstated by at most $0.0027. Please explain if not confirmed.

Response:

(a) Confirmed.

(b) (i) Confirmed for the data in USPS-LR-I-92, Section 2, pages 14-15, which show costs by one-ounce weight increment. See VP/CW-T-1, Appendix B, and my response to USPS/VP-CW-T1-18 for my reservations concerning the methodology used to determine weight-related costs by ounce increment, including the possible understatement of weight-related costs.

Response of VP-CW Witness John Haldi to Interrogatory of United States Postal Service

(ii) Confirmed for the data in USPS LR-I-92, Section 2, pages 17-18, which show costs by one-ounce weight increment. See VP/CW-T-1, Appendix B, and my response to USPS/VP-CW-T1-18 for my reservations concerning the methodology used to determine weight-related costs by ounce increment, including the possible understatement of weight-related costs.

(iii) Confirmed.

(iv) Not confirmed.

66,478,655
+20,455,078,077
= 20,521,556,732

(v) I obtain the same unit cost.

(vi) Not confirmed for USPS-T-29, Table 3, which is "Test Year Periodicals Application Costs." If the question intended to refer to USPS-T-28, Table 3, then I confirm that $0.0740 and $0.685 are the average unit costs for ECR "Flats" and "Letters," respectively. The difference between these two units costs is $0.0055, not $0.0054.

(vii) Not confirmed for USPS-T-29, Table 3, which is "Test Year Periodicals Application Costs." If the question intended to refer to USPS-T-28, Table 3, then I confirm that $0.0678 is the average unit cost shown there for ECR "Letters" that weigh less than 3.5 ounces.

(viii) I do not know what is intended by the reference to "subpart d." I do confirm that the difference between $0.0744 and $0.0678 is $0.0066.

Response of VP-CW Witness John Haldi to Interrogatory of United States Postal Service

(ix) Your arithmetic would appear to be correct.

c) (i) Confirmed for the data in USPS-LR-I-92, Section 2, pages 14-15, which show costs by one-ounce weight increment. See VP/CW-T-1, Appendix B, and my response to USPS/VP-CW-T1-18 for my reservations concerning the methodology used to determine weight-related costs by ounce increment, including the possible understatement of weight-related costs.

(ii) Confirmed for the data in USPS-LR-I-92, Section 2, pages 17-18, which show costs by one-ounce weight increment. See VP/CW-T-1, Appendix B, and my response to USPS/VP-CW-T1-18 for my reservations concerning the methodology used to determine weight-related costs by ounce increment, including the possible understatement of weight-related costs.

(iii) When I add the significant digits in the two numbers, I obtain $1,549,321.

(iv) When I add the significant digits in the two numbers, I obtain a combined volume of 20,671,461,028.

(v) When I divided $1,549,321 by 20,671,461,028 I obtain $0.0749(4975).

Response of VP-CW Witness John Haldi to Interrogatory of United States Postal Service

(vi) Not confirmed for USPS-T-29, Table 3, which is "Test Year Periodicals Application Costs." If the question intended to refer to USPS-T-28, Table 3, then I confirm that $0.0740 and $0.685 are the average unit costs for ECR "Flats" and "Letters," respectively. The difference between these two units costs is $0.0055, not $0.0054.

(vii) Not confirmed for USPS-T-29, Table 3, which is "Test Year Periodicals Application Costs." If the question intended to refer to USPS-T-28, Table 3, then I confirm that $0.0669 is the average unit cost shown there for ECR "Letters" that weigh less than 3.0 ounces.

(viii) Using the data in the question, the result is $0.0081. Using my result in (v) above, the result is $0.0080.

(ix) Your arithmetic appears to be correct.

d) Using the data cited in the references above, the arithmetic leads to this adjustment for heavy weight letters. I note that the estimated overstatement in my testimony at page A-7, Table A-2, line 10, is $0.00291, which is not much different from the $0.0027 adjustment obtained by your method.

CHAIRMAN GLEIMAN: Is there any additional designation of written cross-examination?

[No response.]

CHAIRMAN GLEIMAN: If not, that brings us to cross-examination. Four parties have requested oral cross-examination of this witness, Advo, the Mail Order Association of America, the Newspaper Association of America and the United States Postal Service.

Does any other party wish to cross-examine?

[No response.]

CHAIRMAN GLEIMAN: If not, does Advo wish to cross-examine the witness, Mr. Burzio?

MR. BURZIO: Mr. Chairman, my partner, Mr. McLaughlin, has some cross-examination, and I believe that he is on the way. I would beg the Chair's indulgence and let him be taken out of order.

CHAIRMAN GLEIMAN: I don't think that is a problem. We will pick up on him at an appropriate time when another party has completed cross-examination. Thank you.

MR. BURZIO: Thank you, Mr. Chairman.

CHAIRMAN GLEIMAN: Mail Order Association of America.

[No response.]

CHAIRMAN GLEIMAN: I don't see anyone here representing them. I am going to assume that they have no

cross-examination and, as was the case with Advo and Mr. McLaughlin, if counsel for Mail Order Association of America shows up at some point later in the morning while this witness is still on the stand, we will assume that that party's rights to cross have also been reserved.

That brings us to the Newspaper Association of America. Mr. Baker.

CROSS EXAMINATION

BY MR. BAKER:

Q Good morning, Dr. Haldi.

A Good morning, Mr. Baker.

Q I am Bill Baker, appearing on behalf of the Newspaper Association of America and I can't say I had expected to be talking with you quite this early in the morning.

Could you turn to your response to NAA Interrogatory 4 to you, please.

A Yes, I have it here.

Q And in here we had asked you about a passage in your testimony where you had recommended maintaining pass-throughs for destination entry, I believe, at least 85 percent of avoided costs, is that correct?

A Correct.

Q And we had asked if retaining the absolute amount of the discount would retain the incentive and you said no,

and I understand -- I want to ask you about that a little bit.

In your first sentence in that response after the word "no" you state, "If the absolute amount of the discount were retained, the incentive would be weakened in relation to increases in the cost that destination entry avoids."

Whose costs are you referring to there?

A Well, I am referring to the Postal Service costs, to start with, if we are talking about cost avoidance.

Q And in the next sentence you appear to be referring to the mailers' costs, is that correct?

A Yes.

Q Should the discount be based on the Postal Service's avoided costs or to some measure the mailers' costs?

A The discount should be based on the Postal Service's avoided costs.

COMMISSIONER LeBLANC: Dr. Haldi, could you talk up a bit?

THE WITNESS: Certainly.

COMMISSIONER LeBLANC: Thank you.

THE WITNESS: Is this better?

COMMISSIONER LeBLANC: Yes, that is better. Thank you.

BY MR. BAKER:

Q And then whether a particular mailer chooses to use the discount would depend on how the size of that discount compares to the mailers' own costs, is that correct?

A That is correct.

Q Could you turn now to your response to NAA-6?

I was intrigued by this response because you used a term that I don't remember seeing in rate cases before, and the interrogatory had asked about your statement where a fair and equitable starting point for rate design would be an across-the-board increase by an appropriate amount, and you state midway through the answer there that, and I will read the language, "What we often see, however, is an ongoing adjustment process reflecting the fact that rates have not settled into a configuration that could be described as mutual equilibrium" -- and that is the end of the quote.

What do you mean by "mutual equilibrium" here?

A Well, once you have a revenue target established for a subclass such as ECR, and you have the various rate categories within ECR and you have the volumes within each of those rate categories, if you multiply any set of rates or proposed rates times the volumes and taking account of -- let's say the net rate is taking account of the discounts, you get a revenue.

Now if those rates give you the target revenue, if you have a set of rates which just give you the target revenue, then you -- if you start making changes you're in what has sometimes been described as a zero sum situation. If you increase any one rate in any one rate cell that will give you more revenue and if you don't make any offsetting changes you have more than target revenue, so then you have to think about some offsetting change somewhere.

Conversely, if you decrease one rate, you diminish the revenue from that rate cell, and if you are trying to achieve that target revenue, you have to think of an offsetting change somewhere to make up for that decrease that you put in, so they are in mutual equilibrium when you have got them balanced against the target revenue figure you are trying to achieve. At least that's what I intended by the phrase.

Q Is equilibrium something that occurs from case to case?

Are you comparing, say, the last case with this case or are you looking at it within the context of one specific case?

A Well, I go on to state down there, in the balance of this thing, that there may be reasons for changing the relationship as between the rates that give you that target revenue figure from one rate case to the next.

Q And you identify -- I believe it's four reasons in that last sentence, in your response to NAA-6?

A Well, they are preceded by the phrase "such as" -- they are meant to be illustrative. I could have used the longer phrase that lawyers use such as "including but not necessarily limited to" or something like that, but that's meant for example.

Q Do you have an opinion on whether Standard ECR rates today are in mutual equilibrium?

A I think when the Commission reaches a decision in this case they'll be in mutual equilibrium for purposes of this case until we have new factors to possibly change them, which again some of which -- this is not meant to be an exhaustive list -- are discussed here in the bottom.

Q Is any new rate de-averaging being proposed in this case in ECR mail?

A Not that I am aware of.

Q Is there any previous de-averaging still being phased in?

A Well, they haven't fully reached 100 percent discounts for destination entry for example. Some people think they should.

Q Are there changes in costs arising from automation and new data that are being phased in here or that differ from the past case?

A To my knowledge there are no particular changes -- particularly for the ECR class -- some classes have been hit by increases in flat sorting costs but ECR doesn't have much flat sorting.

Q New cost studies there -- Witness Daniel has submitted some testimony which you address in yours -- aside from that, are there any new costs studies in this case for ECR?

A Well, you have some new cost methodologies in this case proposed, which affect all classes and subclasses.

Q Would one way of telling whether a mutual equilibrium exists between different rate cases is whether the proportionate shares of different rate categories comprise of the subclass remain relatively consistent from case to case as measured by billing determinants, something like that?

A Repeat that again?

Q Well, if in each case the relative amount of saturation letters or five digit flats remain approximately the same proportion of the total of the subclass from case to case and seems a fairly constant or steady share of the subclass mail stream, would that suggest to you there's a mutual equilibrium present in the subclass?

A Not by itself, no.

Q Why not?

A Well, there's -- I was talking about mutual equilibrium in terms of the rates.

Now you are talking about mutual equilibrium in terms of the volumes, and there's all kinds of factors that could influence the volumes outside the purview of the Postal Service.

If people find, you know, for marketing reasons they make choose to send either more heavier weight pieces or more lighter weight pieces or more envelope pieces or fewer envelope pieces, and you could see some shift in volumes occurring outside the context of the rate case that has nothing to do with the rates per se.

Q And if that is going on, would you say we could be in a situation where rates are in mutual equilibrium but the volumes in the subclass are not?

A I think of the mutual equilibrium of the rates as being to the extent that you have a cost based rate structure it's depending more on the underlying cost factors rather than the volumes as such.

Q Okay. Let me ask you to turn to your response to NAA Number 8.

A Yes.

Q Do you have it?

A Yes, I have it.

Q And the basic question here was whether you had

considered recognizing in the rate design some of the cost difference between basic letters and basic non-letters in ECR; is that correct?

A That's correct.

Q And you stated no, you did not, citing Will Moeller's desire to support the automation category; that's correct?

A That's correct.

Q What is the rate relationship that's most important to preserve -- to support the Service's automation program that would concern you here?

A Well, there's an interesting question as to whether the basic category at this lower end which only requires, I believe, ten pieces per carrier route, is an anachronism in the automation, the world of automation. If you only have ten pieces per carrier route, then they have to be unbundled and hand sorted by the carrier unless you run them through the automation, but the whole idea of ECR is that it's a subclass of mail that bypasses all processing until it gets to the DDU, and the DDUs, most of them are not equipped with any kind of automation, so you have a kind of a problem here. You've got the category. You tell people you can presort and make up mail this way, but in essence, you really don't want them to.

Q So are you concerned, then, with the relationship

of the basic ECR letter with the ECR automation rate and with the standard regular --

A Well, there's an ECR automation rate. There's an automation rate within ECR.

Q Right. Are you focusing on both places in automation letters --

A I was focusing here on getting them to switch to automation letter rate within ECR.

Q Within ECR.

So the important rate concern there is the basic ECR letter rate; is that correct?

A Yes.

Q So could you still support the Service's automation program by keeping the basic ECR letter rate where it is, but recognizing some of the cost difference in the basic non-letter rate as long as you make some other adjustment elsewhere in the rate design?

A Can you repeat the question.

Q Yes. I'm just saying if you recognize some of the cost difference between the letters and non-letters at the basic tier thereby raising to some degree the non-letter rate, would that not still support the automation program in the way you that mean it here in your answer?

A Well, putting it equal to the basic flat rate, which has a higher cost, does exactly that, achieves that

purpose.

Q Okay. Turning now to what I guess I call part 2 of your testimony -- well, it's not headlined 2 -- the part of your testimony where you addressed the revenue requirement.

A Do you have a page reference?

Q Well, not yet. Part of -- in your testimony, you suggest the Commission should consider reducing the revenue requirement; is that correct?

A That's correct.

Q And principally you do that by recommending a reduction in the contingency?

A That's correct. It starts on page 30, I believe.

Q Right. That's where I was turning to.

To what do you propose to reduce the contingency?

A I believe I propose to reduce it to -- I have a figure here. Let me just cite the figure I gave.

Q You're looking maybe at page 36 of your testimony?

A Yes.

Q Do you know what that works out to in percentage terms if the contingency factor is currently 2.5 percent and in other cases, it's 1 or 2? Do you happen to have a translation of that proposal to that kind of number? If you don't, that's fine. I just wondered if you had thought --

A Well, 2.5 percent I believe represents about 1.7

million, and 500 million is a shade under a third of 1.7, so taking that as a proportion of the 2.5, about a third would be about .7, I say.

Q Okay.

A .6 to .7 of one percent.

Q And in lines 14-15 on page 36, you state your proposed reduction would reduce the revenue required by 1.2, 1.3 billion dollars; is that correct?

A Correct.

Q And you then go on to -- or recommend at least 177 million of that be directed to reducing the unit contributions for ECR mail, correct?

A That's correct.

Q Do you have any proposal about the balance of that revenue requirement reduction?

A No.

Q So --

A I believe, if I -- I have not had as much time as I would have liked to read all the testimony in this case, but I believe there's enough proposals on the table by various participants to consume all of the remainder.

Q Or more so, I suspect.

A Perhaps more so.

Q But you have no particular recommendation on your own as to where it should go?

A No. I stop right there.

Q Okay.

A At least in this testimony, I'll say.

Q Do you have other testimony that you've filed so far that suggested it in any other subclass?

A Yes. I filed testimony for priority mail users suggesting a --

Q I'll give you a chance to testify again on their behalf. What was the figure you recommended in that case, in that testimony?

A I don't have it in front of me, but I believe it's about 300 million.

Q 300 million. So you by yourself are accounting for 477 million?

A That would be about right, yes.

Q Could any of the savings go to reduce the unit contributions of first class mail?

A That would be up to the Commission.

Q You would not oppose that?

A No. A matter of fact, I have testimony in first class mail, come to think of it, which also proposes a reduction.

Q In institutional costs, or is that --

A No, in the revenues, which would -- you would need -- this could be applied to. That's for Pitney-Bowes if you

haven't had a chance to read it.

Q I do recall that, too. What I do not recall sitting here is whether that reduction is due to an attributable cost avoidance or --

A No. That's due to a new discount.

Q That's a new discount. Do you happen to recall how much money is counted for there?

A About 160 million.

Q 160. Okay. So we've got you up to 630-some million. Okay.

A That's about right.

Q So that accounts for half of the loot.

A But, you know, between first class, priority mail, and ECR, we're well over half the mail stream, too, so I've left a lot on the table for the others.

Q Okay. At page 38 of your testimony, you begin a discussion of unit contribution; is that correct?

A Yes, that's correct.

Q And I take it from the fact that you have this discussion in your testimony that you do believe that comparing unit cost contributions can be useful in postal ratemaking?

A I think it should be a prerequisite as part, not the sole part, but as part of the comparisons, yes.

Q And at least at that level, you are in agreement

with my Witness Tye on the use of unit contributions?

A Yes.

Q Now, I noticed that you compare here the unit contributions of Standard A ECR and Standard A regular. Why did you compare those two?

A Well, the two combined make up the class of Standard A. I believe that's called the class. Those are the two subclasses now that they've eliminated single-piece Standard A. And in fact, some witnesses sometimes lump them together. Well, there's four subclasses, of course -- nonprofit ECR and nonprofit as well -- and some people just link -- even lump those two together and refer to them as Standard A commercial, and they both consist largely of advertising material since they tend to be somewhat similar in terms of the purpose and content.

Q So do you believe that the subclasses are similar, at least in purpose and content?

A Broadly similar, yes.

Q Are they different in any way?

A Well, they're certainly different in terms of the make up. I think Witness Moeller indicated that Standard A regular is used for targeted consumers, whereas ERC is used more for geographics targeting as opposed to individual targeting. And there are some parcels, individual parcels within Standard A regular, whereas the only parcels in

Standard A ECR to my understanding are samples.

I know the through-the-mail film people use Standard A regular to send their pictures back to recipients, and I think the checkbook mailers sometimes use Standard A to mail checkbooks to individuals who've ordered them.

Q Do you have an opinion as to whether Standard A ECR or Standard A regular faces more competition from alternate delivery?

A Well, from alternate delivery, such literature as there is out there would say that saturation mail is the most susceptible to competition.

Q And that would be a part of ECR mail?

A That would be a part of ECR, correct. It's sometimes referred to in the literature as contestable mail.

Q In your understanding as an economist, do you have any understanding of whether the private express statutes have the same effect on ECR as on Standard Regular, or the effect is different?

A Well, I'm not a lawyer, but I don't think that --I think the statutes apply almost equally from a practical point of view; however, it's difficult to get enough density in Standard A regular type material to mount any kind of a delivery scheme, but Standard A material could be included in bags hung on doorknobs just as Standard A ECR is.

Q Are you familiar with -- I'll call it an exception to the private express statutes referring to bound catalogues at all?

A Referring to which?

Q Bound catalogues of a certain page size.

A I'm not, no.

Q Okay. I noticed that you did not compare Standard A ECR or Standard A Regular mail with first class mail. Do you think it would be appropriate to compare first class mail with either ECR or regular on a unit contributions basis?

A I'm not sure what you mean by appropriate. It's certainly a comparison that has been made and can be made. It depends on what the purpose is. First class mail is much more different, much more varied than Standard A in terms of its content type stuff in terms of the applicability of the private express statutes, I think, in certainly the susceptibility to competition.

Q And those are the sorts of differences you would want to take into account when deciding what the appropriate unit cost coverage would be -- unit cost contribution would be?

A I think they are pertinent and relevant, yes.

MR. BAKER: That completes my questioning, Mr. Chairman.

CHAIRMAN GLEIMAN: Thank you, Mr. Baker.

Advco, Inc? Mr. McLaughlin?

MR. McLAUGHLIN: Mr. Chairman, you are so efficient this morning I almost missed the boat.

CHAIRMAN GLEIMAN: It's not I that is efficient; I think it's everyone else who is participating in these proceedings. I just read the script.

CROSS EXAMINATION

BY MR. McLAUGHLIN:

Q Good morning, Dr. Haldi.

I would like to first talk with you about both the letter flat rate differential for ECR mail and the pound rate sort of together somewhat.

Would you agree that ideally, the letter flat rate differential, the higher rate that you would propose to charge for flats versus letters, should reflect just shape-related cost differences and should not reflect weight-related cost differences?

A Yes, within the -- if you're talking about letters -- the letters up to the break point on not higher, and they shouldn't be because anything higher should pay the flat rate, you really should reflect the differences between letters weighing under the break point and flats weighing under the break point.

Q And in fact, in terms of the letter flat cost

differential, the mail that's included in those cost calculations for letters -- the letter mail has a substantially lighter weight than the flat-size mail; is that correct? On average in ECR, letters weigh some fraction of the weight of ECR flats.

A Are you talking about the entirety of all flats or flats under 3.3 ounces?

Q I'm talking about the entirety of all flats.

A Oh, yes. That would be true, yes.

Q Now, do you know whether the Postal Service's estimated letter flat cost differentials on the flat side include costs for flats in the entire 0 to 16 ounce range?

A I'm not sure.

Q You don't know?

A I'm not sure right now.

Q Well, to the extent that it does, would you agree that some portion of that letter flat cost difference may reflect weight-related cost differences, while some other portion may reflect shape-related cost differences?

A It is conceivable given their inability to distinguish cost sometimes.

Q You think it's conceivable or likely?

A I really don't -- I am not that familiar with the data right now to pass a judgment on likelihood.

Q I would like to have you turn to your response to

Advo Interrogatory 7B. The question asks you whether you believe that your proposed letter flat cost differential is entirely or at least 95 percent shape related as opposed to weight related, and I'm not sure you answered that question.

Can you tell us whether you believe that your proposed letter flat cost differential is at least 95 percent shape related as opposed to weight related?

A It's my impression that the letter flat cost differential was meant to be shape related. I'm trying to remember now how the Postal Service -- I made an adjustment to their calculation, which was shape related, but I'm trying to remember the model that they used. It was my belief that it was shape related.

Q Okay. It was your belief that it was shape related?

A That's right.

Q But you don't know for sure?

A At this point, I'm not 100 percent sure.

Q Is it your understanding that Postal Service Witnesses Daniel and Moeller believe that the letter flat cost differential was entirely shape related or whether it included weight-related cost differences as well?

A It was my understanding that they tried to separate the two to the best of their ability.

Q Do you recall whether Witness Daniel was asked

that question and what her answer was?

A I have not read all of her interrogatory -- was that an interrogatory or in her oral?

Q I believe it was in both.

A I have not read all of her responses.

Q Would you defer to her answer on that since you have not looked at it yourself?

A I would certainly defer to her as representing what she thought she did, yes.

Q Now, in your response to 7(b), which, as I indicated previously I'm not sure answered the question that we had asked, you talk about the presort tree. Can you just explain very briefly what the presort tree is?

Well, let me ask you and see if you agree. Would you agree that the presort tree is basically a formula that's used for rate design purposes that allow someone to plug in cost differentials and plug in passthroughs in order to develop a rate structure? Is that generally correct?

A Yes.

Q Okay. And it includes both the input of unit cost differences and the input of decisions such as percentage passthroughs of those cost differences that will be allowed for a rate design purpose; is that correct?

A That's correct.

Q Okay. Now, you state here that the presort tree

does not allow for a weight-related component to the letter flat cost differential, and you add that the presort tree does not allow for -- that presort differentials do not allow for a weight-related component. Do you see that?

A Yes.

Q Now, when you say it does not allow for a weight-related component to the letter-flat cost differential, what you mean by that is that there is not a separate weight-related letter-flat differential and shape-related letter-flat differential? Is that what you mean?

A Yes. I should have said, perhaps, as currently constructed.

Q Okay.

A It doesn't mean it couldn't.

Q Now, does the presort tree allow for a variable passthrough, a passthrough of less than 100 percent?

A The passthroughs are inputs manually which can be input -- are input at the discretion of the rate designer.

Q And so for example, if a rate designer believed that the letter flat cost differential included more than just shape-related costs, you could reduce the passthrough to take into account that the letter flat cost differential might overstate shape-related cost differences?

A You can reduce it arbitrarily without even having

a basis for doing it if you want to.

Q But you could do on a basis like that, could you not?

A You could.

Q So the presort tree does not prevent someone from taking into account the fact that the letter flat cost difference might include weight-related cost differences as well as shape-related cost differences?

A No, but if those cost differences aren't captured or reflected elsewhere, it might still be appropriate to reflect them in the differential.

Q You say if the weight-related cost differences are not captured elsewhere?

A Well, if you narrow the -- let's assume that you've narrowed the shape-related to flats that weigh under the break point and letters, which by definition weigh under the break point, and suppose letters average 1 ounce and flats average 2-1/2 ounces, and there are some weight-related costs to the difference in the weight in this minimal tier. It might very well be considered appropriate to reflect those differences whether they're shape-related or weight-related if they're confined to the piece-only component in the differential since you don't have a weight-related differential anyhow below the break point.

BY MR. McLAUGHLIN:

Q But your proposal is in essence to pass through virtually the entirety of the letter-flat cost difference as though it were a shape related only cost difference?

A Yes.

Q Do you believe that there is any interrelationship between the letter-flat rate differential and the pound rate?

A Say that again?

Q Do you believe that there is any interrelationship between the letter-flat rate differential and the pound rate?

A No.

Q Do you believe there is any interrelationship between the letter-flat cost differential and weight-related cost differences?

A Between the -- say that again now?

Q Do you believe there is any interrelationship between the letter-flat cost difference and weight-related cost differences?

A Well, there's weight-related costs and to the extent you have costs that are strictly weight-related it doesn't matter what the shape is, and there's other costs that could be considered shape related.

For example, if you are unloading a truckload of letters or a truckload of flats, if they weigh the same I

think the cost to unload them is the same.

Q Well, let me -- on the assumption that the letter-flat cost differential includes more than just pure shape-related cost differences, but also takes into account weight-related cost differences, in part due to the fact that letters and flats have different weights, in that case do you believe that there would be an interrelationship between the overall letter-flat cost difference that includes both effects and weight-related cost differences?

A Are you trying to say is there double counting? Is that -- when you say interrelationship?

Q Well, I am just asking you whether you see any interrelationship.

A Not offhand. I don't see any interrelationship, no.

Q Have you ever done an analysis of that before?

A No,, other than the fact that as I have seen the distributions in particularly in First Class that as weight goes up above 3 or 4 ounces, why it is predominantly flats or parcels so you don't get too many letter shapes above 3 or 4 ounces. That is also true for Third Class. Heavier weight pieces, because it's paper, tend to be flats.

Q Is there a point at which an assumed pound related cost differential when applied to the volume of letters and flats would result in an imputed letter-flat cost

differential that becomes irrational?

A An assumed --

Q In other words, if you assume, if you took different levels of assumed weight-related costs, costs per pound --

A Right.

Q And plugged that into the volumes of letters and flats, is there some point at which the assumed weight-related costs could be so great as to overwhelm the letter-flat cost differential?

A That's a hypothetical -- is this a hypothetical you are posing?

Q A hypothetical, yes.

A I have not pondered it before, but I suppose there must be some rate at which that would be true if you just keep going up and up.

Q But you have done no analysis of that in this case, is that correct?

A No.

Q I would like to have you turn to Advo Interrogatory 1 to you, actually it is part 1(b).

A Yes.

Q We asked you in your heavy weight letter cost adjustment to explain why it was appropriate to shift the heavy weight letter costs to ECR flats but not to also shift

the corresponding heavy weight letter volumes. Do you see that?

A Yes.

Q You refer us to your response to USPS-29, but let me just ask you directly, do you believe that it is appropriate to shift heavy weight costs to ECR flats but not to also shift the corresponding heavy weight letter volumes to ECR flats?

A Well, if the letter volumes don't appear in the flats then it would be appropriate, but if the heavy weight letter volumes were entered at the flat rate to begin with, presumably -- my presumption was they got picked up as flats in the PERMIT system, so the volume would already be in the flats.

Q That was your assumption?

A That was my assumption, correct.

Q Now then, I think there are probably a couple different spots where I could cite to for this but I don't think I need to have a specific cite.

You discuss several ways in which the existing rate structure in your view does not adequately reflect all different kinds of cost characteristics and cost differences.

One of the things you talk about is presort discounts, which are based on piece discounts not fully

reflecting weight-related cost differences. Do you recall that?

A Yes.

Q And in the case of saturation flats and particularly for heavier weight saturation flats, would it be your opinion as I understand it from your responses that the presort discount does not fully reflect the weight-related costs avoided by that mail?

A That's -- obviously I have not done an independent study which comes up with that result, but it would appear to me to be the case. I wouldn't be surprised if it -- in fact, I suspect that strongly.

Q Okay, so saturation flats, particularly the heavier weight flats, are in a sense disadvantaged under the rate structure because they do not get the full credit for their weight-related cost avoidance, is that correct?

A That's what I stated in my Appendix B.

Q Okay.

A And that is the basis for my proposal to increase the destination entry discounts.

Q Okay --

A Which are based on weight.

Q Now then, let's take a look at the same general issue from the standpoint of the letter-flat cost differential and let me posit as an assumption that the

letter-flat cost differential includes not only shape related cost differences but also weight related cost differences. I am asking you to assume that.

A All right.

Q For saturation flats in that case would it be true that a nearly-full pass-through of the letter-flat cost differential would likely result in a pass-through of some weight-related costs?

A You are positing that the differential includes weight-related costs as well as shape-related costs?

Q Yes, and then you do a full -- a nearly-full or full pass-through of that cost difference?

A And your question is is that discriminatory to the flats?

Q Well, wouldn't it in effect be charging to the flats some weight-related costs through the letter-flat rate differential?

A Well, if we deal with flats and letters below the break point where there is no weight-related charge on any piece that weighs under 3.3 ounces, then flats are not being charged for their weight-related costs.

Q But the -- is it your understanding that the letter-flat cost difference used by the Postal Service was based solely on letters and flats below 3 ounces or did it take into account flats weighing all the way up to 16

ounces?

A Well, at this point I don't want to speak for exactly what the Postal Service did.

Q Well, let's assume --

A It was my understanding at the time that they had isolated those factors out, yes.

Q Let's get back to my assumption, that the letter-flat cost difference --

A Now if you posit -- let me say this -- if you posit that some of the costs of heavier weight flats are included in the letter-flat differential of -- under the break point, that is a different question.

Is that what you are positing?

Q Well, I am positing that the letter-flat cost difference includes weight-related cost effects for, for example, heavier weight flats, that those are included as part of the letter-flat cost difference.

A Well, if you have included things that shouldn't be included, then that would probably be appropriate to take it out one way or another, yes --

Q And you could take it out, for example, by reducing the pass-through is one way, or by separately somehow or other calculating and separately estimating those numbers, is that correct?

A That would be the more desirable way.

MR. McLAUGHLIN: I have no further questions.

CHAIRMAN GLEIMAN: I think we will take our mid-morning break right now. We will come back on the hour and at that point MOAA will be up to cross examination if they do have cross examination for that witness.

Mr. Todd?

MR. TODD: For your planning purposes, Mr. Chairman, MOAA will not have cross examination -- follow-up questions but will not take up much time.

CHAIRMAN GLEIMAN: Thank you. Mr. Todd has advised us that there will be -- he will not have any cross examination on behalf of MOAA, in which case we will proceed with the Postal Service.

I assume the Postal Service still has cross examination, Mr. Alverno?

MR. ALVERNO: Yes, Mr. Chairman.

CHAIRMAN GLEIMAN: Okay, thank you -- on the hour.

[Recess.]

CHAIRMAN GLEIMAN: Mr. Alverno, I think you may proceed now.

MR. ALVERNO: Thank you, Mr. Chairman.

CROSS-EXAMINATION

BY MR. ALVERNO:

Q Good morning, Dr. Haldi.

A Good morning, Mr. Alverno.

Q I will be asking you just a few questions and then we will be through. I want to refer you back to your cross-examination with counsel for Newspaper Association of America, where you stated that, within ECR, Saturation Mail is the most susceptible to competition. Do you recall that?

A Yes.

Q Okay. Let's consider now for a second, Saturation Mail itself. Within Saturation Mail, do you have an opinion as to whether letters or nonletters are more susceptible to competition?

A The part of the mailstream that is most susceptible to competition within that which you have designated would be that which pays the higher rates.

Q And those pieces that pay higher rates are generally those that are within ECR Saturation, are those pieces that are subject to the pound rate, is that correct?

A Pound rated pieces pay more than just those that are piece rated, that's correct.

Q Let's turn now, please, to your response to Interrogatory Number 22 of the Postal Service.

A I have it, yes.

Q Okay. And in that interrogatory, reference was made to your contention that there are some weight-related savings due to presort, isn't that right?

A Yes.

Q And you are proposing a higher passthrough for destination entry as compared to the USPS proposal, isn't that right?

A That's certainly correct, yes.

Q Okay. Specifically, you are proposing 85 percent of the cost avoidance as compared to 75 percent proposed by the USPS?

A Yes. I pointed out in my testimony that I was also proposing -- suggesting that whatever the discount of the passthrough is be applied to all Standard A, as it has been in the past.

Q Let's turn now to page B-28 of your testimony.

A That's B as in boy?

Q Yes. Specifically, lines 16 to 19. There you state that "The Commission can help rectify the situation by increasing the passthrough used to compute the destination entry discounts. I strongly recommend this course of action to the Commission."

Now, the situation to which you are referring on line 17 is the fact that the presort discounts in ECR do not explicitly recognize weight-related savings, isn't that right?

A That's correct.

Q So, according to your statement, in order to make up for the fact that one particular rate element does not

account for a cost causative variable, in this case, it would be weight in terms of the presort discount. I think what you are saying here is that that can be rectified through adjustment of the passthrough for another discount, that being the drop ship discount, is that right?

A Yeah, I did say rectify, I don't know if rectify is the right word, the most precise word I could have used, but, sure, if you don't recognize some cost avoidances that you believe to exist in one place, I don't think you -- you certainly don't want to then turn around and penalize people who pay the pound rate by cutting their discount for destination entry at the same time.

Q And so what is being done here is that you are making up for -- through increasing the passthrough, you are making up for the inability to recognize a savings in another passthrough?

A Well, I should have said it is an additional reason, more than rectify, because I think my recommendation for an 85 percent passthrough stands on its own feet. In fact, I would have recommended 100 percent passthrough or something more than 85 percent except for the fact that they have always supplied the same passthroughs to Standard A Regular and nonprofit as well as to ECR, and I haven't studied all the rate relationships and all those subclasses, so I was a little bit hesitant to go beyond 85 percent in my

recommendation here. But I think 85 -- I should have said, rather than rectify, I should have -- yet another reason perhaps is another way to put it for recommending an 85 percent passthrough.

MR. ALVERNO: Thank you, Dr. Haldi.

That's all I have today, Mr. Chairman. Thank you.

CHAIRMAN GLEIMAN: Is there any follow-up? Questions from the bench?

[No response.]

CHAIRMAN GLEIMAN: Anyone need any smelling salts because they are in shock and have passed out at the limited amount of cross-examination?

There doesn't appear to be any follow-up. Questions from the bench? No? Yes? Maybe?

[No response.]

CHAIRMAN GLEIMAN: No questions from the bench.

Would you like you some time with your witness for redirect, to prepare for redirect?

MR. OLSON: Sure, I think two minutes would be enough.

CHAIRMAN GLEIMAN: Certainly, Mr. Olson.

[Recess.]

CHAIRMAN GLEIMAN: Mr. Olson?

MR. OLSON: Mr. Chairman, just two quick matters.

REDIRECT EXAMINATION

BY MR. OLSON:

Q Dr. Haldi, when you were cross examined by Mr. Baker, I believe you said that you would base the discount you were discussing on Postal Service cost avoided rather than mailer's cost incurred, and I want to ask you to clarify if you meant the absolute amount of the discount or the level of passthrough of that discount?

A The basis for the discount should be the Postal Service's cost avoided, and that has nothing to do with what the level of the passthrough ought to be, but the basis should be the Postal Service's cost avoided, not private sector cost.

Q Okay. And secondly when you were asked a question by Mr. Baker about the revenue requirement, I believe the record would indicate you said 1.7 million. Is that what you meant?

A You mean for the contingency? No. The contingency is proposed to be 1.7 billion. If I misspoke, that's -- even the Postal Service couldn't get by with 1.7 million.

MR. OLSON: Thank you. That's all I have.

CHAIRMAN GLEIMAN: Thank you, Mr. Olson.

When you spoke earlier, Mr. Olson, at the point in time at which Dr. Haldi offered up his addendum and indicated that you thought that there might be some cross

examination that had been anticipated would be obviated by the addendum, never did I think that the cross would be so short. So we'll be interested in hearing similar forecasts from you on cross examination in the future.

Dr. Haldi, that completes your testimony here today, and I believe your testimony in this round, although we may see you yet again downstream in the rebuttal phase. Who knows? We always like to have you visit with us. We enjoy your testimony and your perspective on things. That does complete your appearance here today and we appreciate your contributions to the record, sir, and you're excused.

THE WITNESS: Thank you, Mr. Chairman.

[Witness excused.]

CHAIRMAN GLEIMAN: Mr. McKeever, I believe you have the next witness.

We look forward to you offering an addendum or having your witness offer an addendum to his testimony also.

MR. McKEEVER: We'll have to try to do that maybe during the rebuttal phase.

[Laughter.]

MR. McKEEVER: Thank you, Mr. Chairman.

The United Parcel Service calls to the stand Dr. Kevin Neels.

CHAIRMAN GLEIMAN: Dr. Neels, to the best of my recollection, you are already under oath in these

proceedings. If that's not the case, if counsel would please let me know --

MR. McKEEVER: Dr. Neels is already under oath, Mr. Chairman, so I think we're okay.

CHAIRMAN GLEIMAN: Counsel, you can proceed when you and your witness are ready.

Whereupon,

KEVIN NEELS,

a witness, was called for examination by counsel on behalf of the United Parcel Service and, having been previously duly sworn, was further examined and testified as follows:

DIRECT EXAMINATION

BY MR. McKEEVER:

Q Dr. Neels, I have just handed you a copy of a document entitled Direct Testimony of Kevin Neels on Behalf of United Parcel Service on Transportation Costs and marked UPS-T-3. If you were to testify here orally today, Dr. Neels, would your testimony be as set forth in that document?

A It would.

MR. McKEEVER: Mr. Chairman, I move that the direct testimony of Kevin Neels on behalf of the United Parcel Service on transportation costs and marked as UPS-T-3 be admitted into evidence and transcribed into the record of today's proceedings.

CHAIRMAN GLEIMAN: Is there an objection?

[No response.]

CHAIRMAN GLEIMAN: Hearing none, I'll direct counsel to provide the court reporter with two copies of the direct testimony of Witness Neels, and that testimony will be transcribed into the record and entered into evidence.

[Direct Testimony of Dr. Kevin Neels, UPS-T-3, was received in evidence and transcribed in the record.]

UPS-T-3

BEFORE THE
POSTAL RATE COMMISSION

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

DIRECT TESTIMONY OF KEVIN NEELS ON BEHALF OF UNITED PARCEL SERVICE ON TRANSPORTATION COSTS

TABLE OF CONTENTS

BIOGRAPHY

My name is Kevin Neels. I am a vice president at the economics consulting firm of Charles River Associates, where I direct that firm's transportation practice. I have directed and participated in numerous research projects and consulting engagements dealing with a variety of issues in transportation economics. The aviation sector has been a particular focus of my work, and I have played key roles in a variety of projects dealing with air cargo market structure, airline pricing strategy, airline industry competitive structure, airport operations and finance, and passenger travel behavior. I have also addressed topics relating to pipelines, automobile manufacturing and distribution, and urban transportation.

On a number of occasions I have been asked to offer expert testimony in legal and regulatory proceedings. In many instances, my testimony has involved calculation of the proper measure of damages. These calculations have required extensive empirical investigations of business sales, revenues, and costs, with a particular emphasis on establishing the extent to which costs vary with changes in sales and production volumes. Often my work has involved the application of econometric analysis techniques. I have played a major role in estimating damages arising from antitrust violations, patent infringement, misappropriation of trade secrets, price-fixing, and contract violations. My testimony has addressed a number of different industries, including pharmaceuticals, medical devices, commercial aviation, durable consumer products, crude oil production and refining, and automobile manufacturing and sales.

In Docket No. R97-1, I offered testimony on behalf of United Parcel Service on the Postal Service's econometric study of the volume variability of mail-processing costs. I am also submitting testimony on that subject in this proceeding.

A copy of my resume is included as Appendix A.

PURPOSE OF MY TESTIMONY

I have been asked to review the Postal Service's treatment of its dedicated air network costs. I have also been asked to review the TRACS system used to distribute purchased transportation costs. In so doing, I have reviewed the testimony of Postal Service Witnesses Pickett (USPS-T-19), Xie (USPS-T-1), and Bradley (USPS-T-18 and USPS-T-22), as well as past Commission rulings on these subjects.

I conclude that the Commission should reject the Postal Service's allocation of all network premium costs to Express Mail and should instead allocate those premium costs to both Express Mail and Priority Mail. I also conclude that the TRACS distribution keys currently used should be modified to assign the costs of empty space in purchased highway transportation to the mail that creates the need for that capacity. Finally, I point out certain shortcomings in the TRACS system and suggest ways in which the distribution of purchased transportation costs can be improved for use in future postal rate proceedings.

THE RESPONSIBILITY FOR NETWORK AIR PREMIUM COSTS SHOULD BE SHARED BY EXPRESS MAIL AND PRIORITY MAIL.

The Postal Service operates three dedicated air networks devoted solely to the transportation of mail.[1] The Eagle network is a hub and spoke operation based in Indianapolis, Indiana, which connects approximately forty cities either directly or indirectly. Response of United States Postal Service to Interrogatory UPS/USPS-T1-17. The Western network is a hub and spoke operation based on the West Coast which connects approximately a dozen cities either directly or indirectly. Id. Both of these networks operate year-round. In addition, during the Christmas season, the Postal Service operates a special Christmas network to handle the high volumes of expedited mail tendered during that time period.

The costing procedures for these dedicated air networks impute to each pound-mile of mail carried on them a cost equal to what it would have cost to transport the mail through the commercial air system. USPS-T-19, p. 1 (Pickett). These imputed costs fall far short of what it actually costs to operate these networks. The difference between the actual cost of each network and the imputed "commercial air equivalent" is referred to as the "network premium." Id. The Postal Service incurs the network premium in order to achieve the greater service reliability and quicker turnaround time that the dedicated air networks provide compared to the commercial system. Under the Postal Service's Base Year estimates for the Eagle and Western networks, the network

1. Tr. 6/2541-42. The Postal Service does not directly own or operate the aircraft used in these networks, but rather contracts with private firms to provide the required lift.

premium cost is $124.7 million, out of total network costs of $208.2 million. USPS-LR-I-57, p. 1.

In Docket No. R97-1, the Commission attributed these dedicated air network premium costs solely to Express Mail. PRC Op., pp. 221-22. That attribution was based upon Postal Service Witness Takis' statement that if Express Mail were eliminated, the Eagle network would be shut down and the Priority Mail and First Class Mail moving on that network would be diverted onto commercial flights with no degradation in service quality. Docket No. R97-1, USPS-T-41, p. 12. In adopting the Postal Service's position, the Commission broke with its prior practice, under which the Commission had attributed the premium jointly to Express Mail and Priority Mail.

The Postal Service's justification in this case for the attribution of the entire dedicated air network premium solely to Express Mail is vague at best. Mr. Pickett, who calculates the amount of the premium, cites the testimony of Professor Bradley (USPS-T-22) to support the attribution of the full premium to Express Mail. USPS-T-19, p. 2. He fails, however, to provide a page reference. A search through Professor Bradley's testimony reveals a footnote in which Professor Bradley states that it is his understanding that these networks are "sized for a [minimum] scale." USPS-T-22 at 38, n.28. Yet, Professor Bradley goes on to state that "more capacity exists than is strictly required to handle just the Express Mail." Id. In response to interrogatory UPS/USPS-T22-9, Professor Bradley stated that he "did not undertake, as it was not required for my testimony, an investigation of the nature of the Western network . . . ." Tr. 8/3267.

The information provided by the Postal Service in this case regarding the operation of these networks and the mix of mail that they carry undercuts the appropriateness of assigning all dedicated air network premium costs solely to Express Mail. As Table 1 below indicates, in the Base Year Express Mail represented only 24 percent of the volume on the Eagle network, and only 9 percent of the volume on the Western network. Tr. 8/3265. On the other hand, Priority Mail represented 47% of the volume on the Eagle network, and 54% of the volume on the Western network. Yet, under the Postal Service's approach, Express Mail would pay the entire premium cost of these networks, amounting to 60 percent of total network costs. It is highly unlikely, to say the least, that the Postal Service would incur the substantial premium costs of operating these dedicated air networks in their current configurations solely to accommodate these relatively small Express Mail volumes.

Table 1

Base Year Eagle and Western Network
Volume Percentages by Mail Class

Mail Classes	Eagle Network	Western Network	Combined Network
First Class	18.24%	26.47%	19.48%
Express	24.38%	9.36%	22.11%
Priority	47.12%	53.9%	48.14%
Other	10.27%	10.27%	10.27%
Total	100.00%	100.00%	100.00%

Note: Calculated from Xie Tables 8 and 9. Eagle network percentages equal the costs shown for that class in Table 8 divided by the total cost for all classes. The Western network percentages reflect comparable calculations based on figures in Exhibit 9. The combined percentages were calculated by summing the figures for the two networks for a class, and then dividing by the sum of the totals for the two networks. Because the costs are based upon a constant per pound mile cost, the percentage distributions of cost and volume are identical.

On August 27, 1999, the Postal Service upgraded the aircraft used on the Western network from DC-9s to much larger 727s. Tr. 6/2560-61. Professor Bradley has stated that this decision was driven by a desire to achieve efficiencies by using the same types of shipping containers on both the Eagle and the Western networks. Tr. 8/3266-69. See also Tr. 6/2560-61 (Pickett). Mr. Pickett adds that because 727s are widely used within the industry, they are competitively priced relative to DC-9s. Tr. 6/2561. Both witnesses make clear, however, that in soliciting bids for the Western network contract that took effect on August 27, 1999, the Postal Service set the bid specifications in such a way as to guarantee that bidders would offer only the larger

aircraft.[2] Thus, the upgrading of capacity that occurred was the result of a Postal Service decision made in advance of the request for bids, and not in response to low bids received for higher capacity aircraft.

In discovery, Mr. Pickett provided copies of a summary of a meeting that took place in 1995 discussing the Western network. See Tr. 6/2549-53. These documents evidence a Postal Service desire to configure the Western network in order to improve service for Priority Mail. Mr. Pickett states that this proposal was not acted upon in 1995. However, one cannot help but wonder whether concerns similar to those discussed in 1995 were also expressed in the undocumented meetings held in connection with the later decisions to expand and upgrade the network. Network operations seem clearly to have been motivated at least as much by a desire to provide reliable service for Priority Mail as for Express Mail, if not more. In any event, the fact that in BY1998 -- shortly before a 1999 upgrade of the network -- Express Mail represented only 9 percent of the volume carried on the network makes it clear that the network was not sized primarily, let alone solely, for Express Mail.

The evidence shows that the Western network as it is presently configured exists to accommodate Priority Mail as much as to accommodate Express Mail. As Mr. Pickett has stated, "The daytime and nighttime Western network was reconfigured, and expanded to Spokane, Billings, and Boise for two reasons: (1) to maintain service for Express Mail and eliminate the need for air taxis and commercial air used to move First-

2. The Postal Service required bidders to be able to transport a type of container that fits on a 727, but not on a DC-9. Tr. 6/2560-61.

Class Mail and Express Mail[;] (2) ***to provide improved service for Priority Mail.***" Tr. 6/2548 (emphasis added).

Professor Bradley suggests that the networks were "sized for a [minimum] scale," and that, by implication, the premium should be attributed solely to Express Mail. USPS-T-22 at 38, n.28. If the air networks were in fact "sized for a [minimum] scale," there should be no way for the Postal Service to construct and operate a smaller and less expensive network with enough capacity to carry Express Mail. However, the evidence suggests that the dedicated networks are sized for the combined volume of Priority Mail and Express Mail.

Smaller aircraft are generally less expensive to operate than larger aircraft. This is consistent both with common sense and with economic rationality. It would be unreasonable for an operator to spend more for an aircraft that provides less usable cargo space. While Mr. Pickett has asserted that the Postal Service has received offers to provide cargo service with 727s that were cheaper than DC-9s (Tr. 6/2651), he does not say that 727s are always cheaper, merely that some potential suppliers have in some instances quoted cheaper prices. That certainly can be true at any point in time, or in the case of a particular operator. But bid specifications written to exclude DC-9s from consideration will certainly elicit price quotations that are at best equal to, and more likely higher than, those elicited by bid specifications permitting the use of either aircraft type.

In determining whether the dedicated networks have been set up at a minimum efficient scale for Express Mail, one must consider the capacity that they provide and

determine whether that is the smallest amount of capacity that can be efficiently operated. Since the smallest amount of capacity that can be provided involves the dispatch of a single aircraft, the inquiry turns naturally to consideration of the capacities of the various aircraft types that have been used in these networks, and their ability to handle the volume of Express Mail carried on the networks.

The capacity of different types of cargo aircraft can be measured in terms of weight or cubic footage. Because the maximum weight that an aircraft can carry varies with weather, altitude, length of haul, fuel requirements, and (in the case of 727s) structural considerations, no single figure for maximum weight carried can be cited for any aircraft type, or even for any aircraft. However, in response to Interrogatory UPS/USPS-T19-6, Mr. Pickett provided data measured in terms of cubic footage regarding the capacity of the various aircraft types that have been used on the Eagle and Western networks. Tr. 6/2556-59. The discussion below relies upon these cubic foot figures.

Mr. Pickett has indicated that the 727s used in the Eagle and Western networks contain from 4,640 to 6,735 cubic feet of cargo space, depending on the model and its configuration. Tr. 6/2557-58. Whether this space is fully utilized or not is not known, although Mr. Pickett notes in his response to UPS/USPS-T19-12 that FAA structural concerns relating to the conversion of these aircraft from passenger use limit the loads they can carry. Tr. 6/2567. At most, however, the 24 percent of the Eagle network's load accounted for by Express Mail would (if the aircraft were fully utilized) require only

1,616 cubic feet per aircraft.[3] This requirement could be met easily by the 2,808 cubic feet available on the DC-9-15 (the smaller of the two models formerly used on the Western network in its original configuration). Tr. 6/2558. While Mr. Pickett asserts that the 727 is favored by the cargo industry, Tr. 6/2561, DC-9s are widely used and are readily available for that purpose. One need not reach very far in order to dispense with the need even for DC-9's, given the Express Mail volume at issue. The capacity of a 727-100, the smaller of the two versions used by the Postal Service, has, according to Mr. Pickett, a capacity of at most 4,850 cubic feet. Tr. 6/2557. If these aircraft operated on average at a capacity utilization of 70 percent, the portion of their load on the Eagle network made up of Express Mail could be accommodated by a fleet of Beechcraft 1900s with a capacity per aircraft of 819 cubic feet. Tr. 6/2559.

In the case of the Western network, the figures are even more revealing. In the most extreme case, in which the fleet is made up entirely of fully utilized 727-200s, the 9 percent of the volume made up of Express Mail could be accommodated in an aircraft with a capacity of 606 cubic feet. That need could be met by a Beechcraft 1900, or even by the smaller Metro III, which has a capacity of 625 cubic feet. Tr. 6/2559. Both of those models have been used at times as part of the Postal Service's dedicated air networks.

These illustrations demonstrate the implausibility of an argument that the Eagle and Western networks exist or are sized solely to meet the needs of Express Mail. The

3. 1,616 equals 24 percent of the 6,735 cubic feet available on a 727-200.

data provided by the Postal Service leaves no doubt that these networks exist and are configured as they are to meet the needs of both Express Mail and Priority Mail.

It would be incongruous to attribute to Express Mail 60%[4] of the cost of these networks when it represents only 22% of the volume carried on them, whereas Priority Mail represents more than twice as much (48%) of the volume they handle. I urge the Commission to return to its pre-R97-1 position and attribute the dedicated air network premium to both Express Mail and Priority Mail. The results of doing so are reflected in Table 2.

Table 2

Change in Base Year Domestic Air Costs
Due to Reallocation of Network Premium

MAIL CLASS	USPS $(000)	REVISED $(000)	PERCENTAGE CHANGE
EXPRESS MAIL	155,698	62,808	-59.66%
PRIORITY MAIL	492,995	557,965	13.18%

THE COST OF EMPTY SPACE ON TRUCKS SHOULD BE ASSIGNED TO THE MAIL THAT CREATES THE NEED FOR THAT CAPACITY.

In Docket No. R97-1, the Commission expressed concern about the way in which TRACS is used to calculate distribution keys for purchased transportation costs. The Commission noted that transportation is sometimes purchased in units different from those for which TRACS samples mail. See PRC Op., R97-1, Vol. 1, at 213. In the case

4. This figure represents the sum of the network premium and the per pound-mile cost attributed to Express Mail.

of highway transportation, TRACS samples route-trip-destination-days, whereas highway transportation services are purchased "by route or in other blocks." Id. The Commission also noted that, in the simple case of a route consisting of an outhaul and a backhaul, "[t]he purchased cost of the route is a joint cost of the mail carried on both the outhaul and the backhaul." Id. Furthermore, the Commission correctly observed that "the requirements and constraints that may determine a particular route trip destination day are not limited to just the need to transport the mail found on the truck at the destination." Id. at 214.

The key issue underlying these concerns is how the cost of empty space should be apportioned. All agree that the space actually occupied by mail on a truck should be allocated to that mail. The Commission has also consistently held -- and properly so -- that the cost of empty space varies with volume and should therefore be attributed. Docket No. R90-1, PRC Op. at III-157 to 164. However, there is considerable disagreement about whether the TRACS "expansion" process properly allocates costs. See PRC Op., R97-1, Vol. 1, at 215.

While the Commission did not reach a conclusion in Docket No. R97-1 on whether a distribution key bias exists in TRACS, it did recognize that "a *potential* for bias is clearly present in the TRACS 'expansion' process." See PRC Op., R97-1, Vol. 1, at 215 (emphasis in original). In particular, "the mail sampled on a partially empty truck . . . may have little to do with the transportation requirements and operational decisions that produced a truck of a particular size running a particular route to that destination on that day." Id. at 216.

I propose below an alternative method for calculating distribution keys from the TRACS data that explicitly recognizes the fact that unused capacity on a particular route trip destination day is attributable to mail flows and capacity needs that arise elsewhere in the system. It does so by changing the expansion process for "filling" empty space to consider the mix of mail on the more heavily loaded trucks that give rise to the need for the space that is not occupied on other trucks, or on other less utilized segments of the heavily loaded truck's entire route.

As noted in the A.T. Kearney 1999 Data Quality Study, a more refined analysis could require a full transportation flow simulation model.[5] Such a model is not currently available. However, until it is, the procedure that I outline below provides a workable approximation and reduces the potential for bias in the assignment of purchased highway transportation costs.

A. The Current Method for Allocating Empty Space

The current treatment of empty space on trucks involves the expansion of the mail actually found on the sampled truck to fill the unused space. Distribution keys are then calculated from the expanded mail volume.

A truck typically makes multiple stops as it makes its way along its itinerary. Movements between successive stops are referred to as "legs." In the discussion below, the "last leg" is the leg immediately preceding the TRACS inspection in which the unloaded mail is sampled. "Prior legs" are earlier legs on the trip upon which the unloaded and sampled mail was known to have traveled. The information collected by

5. Data Quality Study, Summary Report, April 16, 1999, p. 88.

the inspector includes where each sampled mail item was loaded onto the truck, and thus enables the identification of the prior legs on which each piece of mail traveled.

The cost of the space occupied by the sampled mail is simply allocated proportionally by subclass. This includes not only the space occupied on the last leg, but also the space known to be occupied by that mail on prior legs as well.

For the last leg, the mail on the truck is "expanded" by subclass to fill the empty space on the truck. Specifically, the volume of mail that was unloaded from the truck is expanded by the ratio of the full truck volume to the occupied volume. For example, if a truck is 50 percent full when it pulls into a facility and 2/5ths of the mail on the truck (*i.e.*, a volume equal to 20 percent of the truck's full capacity) is unloaded, the cubic-foot-miles for the last leg for each subclass is doubled to assign to the offloaded mail its proportional share of the full cost of the truck, including the cost of the empty space. Thus, the cost allocation both of the portion of a truck that had been occupied by the unloaded mail and of the empty portion is determined by the mix of mail unloaded from the truck. Mail flows in other parts of the system are not taken into account.

Information on space utilization for prior legs is not available. The Postal Service's solution to this data gap is to expand the cubic-foot-miles on the prior legs associated with the mail offloaded at the end of the last leg by the average capacity utilization across all sampled trucks within the same stratum. Thus, for example, if the average capacity utilization across sampled trucks in the stratum were 75% (*i.e.*, the trucks are 3/4 utilized), the cubic-foot-miles for prior legs would be multiplied by 4/3.

This procedure places greater weight in the cost distribution process on the mail mix on trucks with lower capacity utilization. In particular, for mail on the last leg, the mechanism expands the mail on emptier trucks by much more than it expands the mail on fuller trucks. This effect is offset to some extent on prior legs, where the mechanism expands mail on fuller trucks somewhat more than it expands mail on emptier trucks. However, since the preponderance of mail travels only one leg prior to unloading, the expansion process applied to the last leg has a greater impact than the expansion process applied to prior legs. Of the 5,385 trucks tested for which some mail was unloaded, only 39 percent contained mail that traveled on a prior leg, and the unexpanded cubic foot miles traveling on prior legs comprise only 30% of total unexpanded cubic foot miles.[6] Thus, the overall effect is that mail on emptier trucks is weighted more heavily than is mail on fuller trucks.

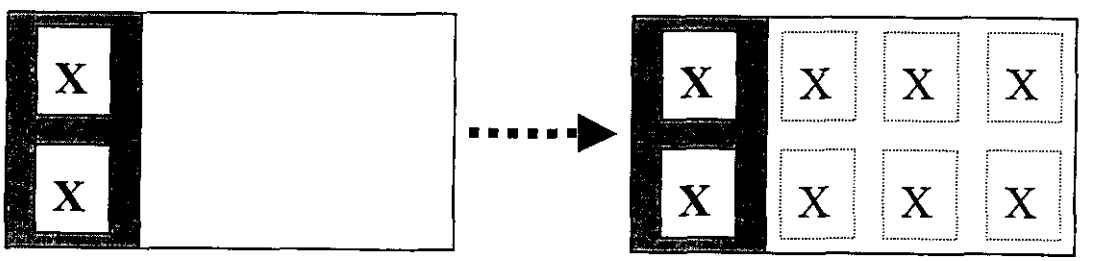
This concept is illustrated in Figure 1, below, which represents a simple system composed of two trucks, both of which are fully unloaded upon arrival at the facility where TRACS sampling is conducted.

6. Calculation using TRACS data for all four quarters, from the Z-Files submitted as part of USPS-LR-I-52.

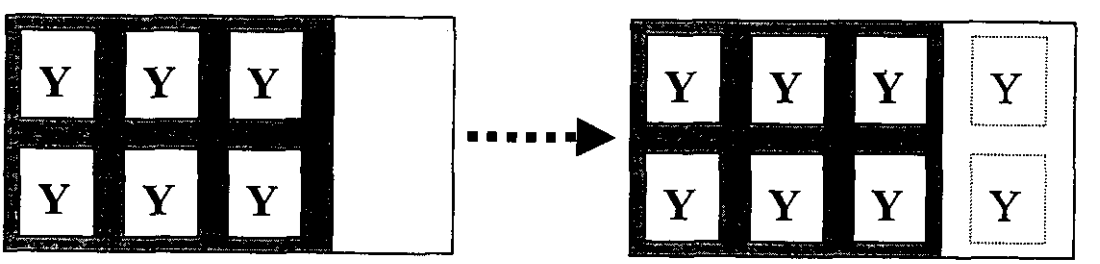
Figure 1

USPS MAIL EXPANSION MODEL

EMPTY TRUCK



FULL TRUCK



MAIL	Before Expansion		After Expansion	
	Units of Volume	Mail Mix	Units of Volume	Mail Mix
Class X	2 UNITS	25%	8 UNITS	50%
Class Y	6 UNITS	75%	8 UNITS	50%

The emptier truck has 25% of its space occupied by Class X Mail, while the fuller truck has 75% of its space occupied by Class Y Mail. The table in the exhibit indicates the units of space filled, and shows the relative proportions of system capacity filled by Class X Mail and by Class Y Mail. If one were to allocate costs based on the unexpanded mail mix, 25% of the costs would be allocated to Class X Mail and 75% would be allocated to Class Y Mail.

However, the expansion process inflates the unloaded mail to "fill" the empty space on each truck. Note that the mail on the emptier truck is expanded to four times its original volume, while the mail on the fuller truck is expanded to 4/3rds of its original volume. As a result of the expansion, Class X Mail bears 50% of the total costs, as does Class Y Mail. In other words, the weight given to Class X Mail in the cost distribution process is increased substantially.

Suppose, however, that the two trucks represent two legs of the same round-trip route rather than two different trucks making different, unconnected trips. It is clear that in such a case, the size of the truck is driven primarily by the volume of Class Y Mail carried rather than by the volume of Class X Mail carried. Nonetheless, the current procedure gives more weight to Class X Mail.[7]

Professor Bradley argues that the Postal Service has addressed the concerns of the Commission expressed in Docket No. R97-1 regarding the potential for TRACS bias. He agrees that "a potential difficulty arises if the costs on a particular leg are

7. In Docket No. R97-1, Postal Service Witness Nieto raised similar concerns. See Tr. 7/3435-37.

imputed solely to the volumes on that leg when, in actuality, the capacity and associated costs are caused jointly with volume on other legs in the transportation mode." USPS-T-18, p. 43. He also agrees that "[a] clearly preferred approach is to distribute the jointly determined volume variable costs to the classes and subclasses that jointly determine the costs." *Id.* He argues that "[t]his is what the new TRACS distribution procedure does." Id.

Although most of Dr. Bradley's testimony addresses whether TRACS can be used to directly estimate volume variabilities, he does consider the issue of how to allocate empty space. Dr. Bradley acknowledges that "TRACS tests are designed to produce a set of proportions that accurately represent the *total* proportion of cubic-foot-miles a class or subclass causes in each specific transportation mode." USPS-T-18, p. 43 (emphasis in original). Specifically, he argues that "[t]he fact that the costs are jointly produced on a given leg does not affect this calculation." Id., p. 44. He is correct in stating that under the current approach, the fact of joint production does not affect the distribution of costs. But it should. Under the alternative approach I describe below, it does.

B. An Alternative Approach

A more accurate distribution of purchased highway transportation costs requires that, in assigning responsibility for empty space, relatively more weight be given to those mail classes and subclasses that create the need for the total capacity purchased. This can be achieved by giving greater weight in the distribution process to the classes and subclasses of mail that travel on the more fully loaded trucks. These trucks are far

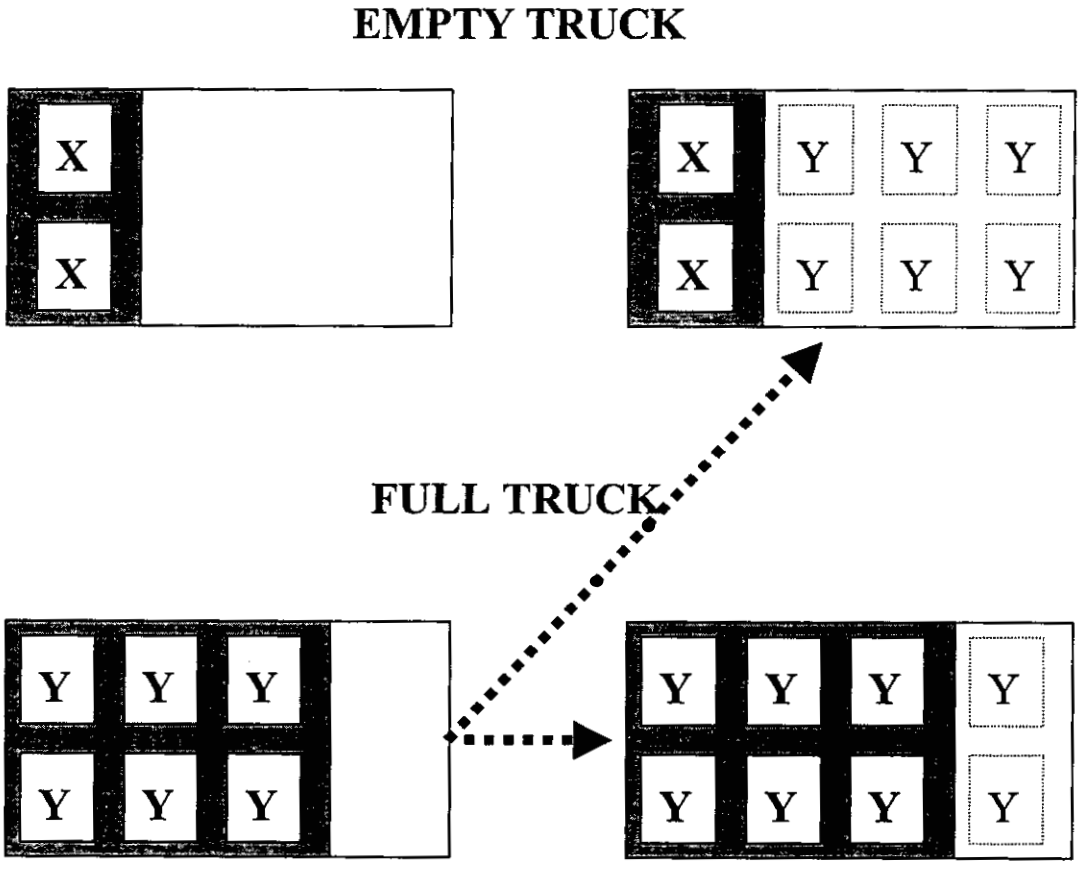
more likely than the empty or nearly empty trucks to represent the points on the route upon which capacity purchase decisions are based. In other words, the size of the truck specified in a highway transportation contract is determined by the capacity needed on the leg of the route that carries the largest volume of mail. In the absence of a detailed transportation flow simulation model, modifying the current approach so as to give more weight to the mail moving on the more fully loaded trucks offers the best and most appropriate approximation available.

The alternative approach that I propose distributes costs for occupied space to the mail that occupies that space, while the cost of empty space is distributed to a mix of mail representative of that found on the more fully loaded trucks. This approach involves calculating the mail mix that is present on the subset of more fully loaded trucks. The calculation reflects only the mail unloaded from these trucks, and ignores the unoccupied space on them. It yields a distribution key for the "capacity-causing mail mix." I then use that distribution key to "fill" the empty space in all sampled trucks, for both the last leg and all prior legs. To complete the process, I sum the actual and "filled" mail volumes and calculate the final distribution key.

Figure 2 illustrates the calculation for the last truck legs. Since the mail on the fuller truck shown in that exhibit is more representative of the mail that leads to the need for the amount of capacity purchased, the mix of mail on it is used to "fill" both the empty space on the fuller truck and the empty space on the emptier truck. As the table in the exhibit demonstrates, the effect is to allocate a larger proportion of the total costs to the mail that is carried on the fuller truck.

Figure 2

IMPROVED MAIL EXPANSION MODEL



MAIL	Before Expansion		After Expansion	
	Units of Volume	Mail Mix	Units of Volume	Mail Mix
Class X	2 UNITS	25%	2 UNITS	12.5%
Class Y	6 UNITS	75%	14 UNITS	87.5%

This alternative approach requires a definition of what constitutes a "more fully loaded truck." I identify these trucks by arraying sampled segments in descending order of capacity utilization and then taking the upper portion of the distribution. To determine how far down the distribution to go, I assume that each trip has one segment that determines the total capacity provided on that trip, and that this segment is the segment with the highest capacity utilization. To determine the fraction of all segments to include in the calculation, I determine the average number of segments per trip. The inverse of this average determines the proportion of sampled segments to include in determining the mail mix responsible for the total amount of capacity purchased.

An example will illustrate the way this approach works. Suppose that all trips have three segments, one of which determines the total trip capacity. Then for each trip, one of the three segments determines the level of capacity purchased. I calculate the mail mix on the one-third of the tested segments with the highest capacity utilization.

This approach follows the Postal Service's methodology in calculating distribution keys separately for different groups of highway movements. I carry out each of the steps described above separately for each group of highway movements. I depart from the Postal Service's approach, however, in the way I define the groups. The Postal Service calculates distribution keys separately for each of a number of strata defined on the basis of contract type (Inter-BMC, Intra-BMC, etc.) and direction (inbound, outbound). In contrast, I aggregate strata up to the contract-type level. I aggregate in this way in order to avoid splitting apart routes and creating a situation in which the capacity-determining segment on a route may lie in a different group. For example, it may be that a route consists of an inbound leg and an outbound leg, and that capacity

utilization is higher on the outbound leg. Under the Postal Service's strata definitions, these two legs will fall into different strata and an analysis limited to a single stratum would not capture the relevant mail mix. Note that this situation does not require that any specific direction comprise the binding constraint. It may well be the case that at one time of day there is high capacity utilization on inbound legs, and at another time of day on outbound legs. My alternative calculation of the capacity-determining mail mix reflects the mail mix on all high utilization legs, regardless of direction.

My alternative calculation is based on the Z-Files and SAS programs used by the Postal Service and produced as USPS-LR-I-52. I use these same data files but alter the programs to implement my alternative formula. First, I calculate the average number of stops per trip and the resulting capacity utilization threshold. Next, I create a separate database consisting only of tests of the more fully loaded trucks, and calculate a first-stage distribution key that represents the unexpanded mix of mail on those trucks. I then apply that distribution key to the appropriate portions of the empty space on all tested trucks, both on the last legs and on prior legs. Summation of the cubic-foot-miles by mail subclass for all sampled segments provides the basis for the calculation of the second-stage distribution key. I carry out these steps separately for each highway contract type: Inter-BMC, Intra-BMC, Inter-SCF, and Intra-SCF. I then enter those keys into the Cost Segment 14 Workpapers in place of the keys calculated by the Postal Service.

Appendix B to my testimony shows the details of the formulas used in the calculations, using the same notation found in the TRACS Highway Subsystem documentation (USPS-LR-I-52).

Table 4 shows the effect of this alternative method of allocating empty space on the assignment of highway costs to the major mail classes. The costs assigned to First Class Mail, Priority Mail, and Parcel Post increase. The costs assigned to Periodicals, Standard (A) Mail, and non-Parcel Post Standard (B) decline. The costs assigned to Express Mail decline sharply, although the costs involved are not large.

Table 4

Revision in Base Year Highway Costs Due to
Reallocation of Empty Space Highway Costs

Class	USPS $(000)	Alternative Allocation $(000)	Percentage Change
FIRST CLASS MAIL	338,875	351,671	3.78%
PRIORITY MAIL	213,914	229,598	7.33%
EXPRESS MAIL	39,392	17,781	-54.86%
PERIODICALS	216,032	208,771	-3.36%
STANDARD (A)	321,490	319,793	-0.53%
PARCEL POST	241,516	247,251	2.37%
STANDARD (B) OTHER THAN PARCEL POST	108,029	104,868	-2.93%

Tables 5a-5c and 6 compare the effects of this change in the treatment of highway empty space costs on total per unit transportation costs (including all modes) for Parcel Post and for Priority Mail under the Postal Service's approach and under my alternative approach, along with the percentage change due to the new approach. Parcel Post costs per cubic foot are shown for all three types of rates: Inter-BMC, Intra-BMC, and DBMC. The transportation costs allocated to Parcel Post rise by up to 2

percent, depending on the rate type and the zone. Allocations of transportation costs to Priority Mail also rise by up to almost 6%, depending on zone. The table shows changes in Parcel Post costs per pound.

Table 5a

Parcel Post - Inter-BMC
Total Transportation Cost per Cubic Foot

Zone	USPS	Alternative Calculation	Percent Change
Local	N/A	N/A	N/A
1/2	$2.802	$2.839	1.35%
3	$3.384	$3.431	1.37%
4	$4.259	$4.318	1.38%
5	$5.888	$5.970	1.39%
6	$7.580	$7.687	1.40%
7	$9.162	$9.291	1.40%
8	$12.438	$12.614	1.41%

Table 5b

Parcel Post - Intra-BMC
Total Transportation Cost per Cubic Foot

Zone	USPS	Alternative Calculation	Percent Change
Local	$1.226	$1.245	1.52%
1/2	$2.278	$2.309	1.38%
3	$2.278	$2.309	1.38%
4	$2.278	$2.309	1.38%
5	$2.278	$2.309	1.38%
6	N/A	N/A	N/A
7	N/A	N/A	N/A
8	N/A	N/A	N/A

Table 5c

Parcel Post - DBMC
Total Transportation Cost per Cubic Foot

Zone	USPS	Alternative Calculation	Percent Change
Local	N/A	N/A	N/A
1/2	$0.862	$0.878	1.94%
3	$1.625	$1.637	0.75%
4	$2.110	$2.119	0.44%
5	$4.921	$4.913	-0.15%
6	N/A	N/A	N/A
7	N/A	N/A	N/A
8	N/A	N/A	N/A

Table 6

Priority Mail
Total Transportation Cost per Cubic Foot

Zone	USPS	Alternative Calculation	Percent Change
L, 1/2, 3	$0.220	$0.233	5.69%
4	$0.349	$0.360	3.23%
5	$0.358	$0.361	0.88%
6	$0.408	$0.411	0.75%
7	$0.511	$0.514	0.57%
8	$0.674	$0.677	0.40%

TRACS UNDERSAMPLES TIME-SENSITIVE MAIL.

The TRACS system appears to underrepresent the amount of time-sensitive mail carried on purchased highway transportation and therefore the proportion of purchased transportation costs attributable to these mail classes. This underrepresentation arises from two sources: (1) the failure of TRACS to cover emergency contracts and exceptional service movements and (2) the failure of TRACS to specify procedures for sampling items and pieces in a way that precludes the bypass of time-sensitive mail by TRACS inspectors.

A. Exclusion of Emergency Contracts and Exceptional Service Movements From the TRACS Sample

A significant source of bias in the TRACS system arises from the fact that certain types of highway contracts are systematically excluded from the universe of movements from which the TRACS sample is drawn. To the extent that these excluded movements

contain a disproportionate share of time-sensitive mail, the distribution keys produced by TRACS will assign too small a share of costs to these classes. There is at least some evidence that such an understatement may actually occur.

The TRACS sample is designed to exclude "emergency" contracts and "exceptional service" highway movements. Both categories of movements represent departures from business as usual. Emergency movements are carried out under contracts issued for extraordinary circumstances under procedures different from the Postal Service's normal contracting procedures. These contracts can be up to six months in length.[8] Exceptional service movements are provided on short notice and on a short-term basis to deal with breakdowns in the normal transportation system. Response of the Postal Service to Interrogatory UPS/USPS-T18-7. Both categories of movements are also used "to offset the impact of unexpected mail volumes or operating delays." Response of the Postal Service to Interrogatory UPS/USPS-T18-9(c). The costs of these two types of movements are substantial. Together they comprise 15.7 percent of total purchased highway transportation costs.[9]

In its transportation cost analysis, the Postal Service adds the cost of emergency contracts and exceptional service movements together with the costs of the other contract types covered by the TRACS sample, and applies to them the distribution keys derived from TRACS. Thus, the cost-allocation system assumes implicitly that

8. Postal Service Purchasing Manual (January 1997), Section 4, Part 4.5.5.c.3 at 146.

9. Calculation using costs reported in the INPUTS —COSTS sheet in the Cost Segment 14 Workpapers spreadsheet.

movements made under an emergency contract or on an exceptional service basis contain on average the same mix of mail as do regular highway movements. There are good reasons to question the validity of this assumption.

When a normal highway movement fails, managers generally face two choices: either dispatch an exceptional service movement, or hold the mail for the next scheduled movement. The choice requires managers to make trade-offs between delivering the mail on time compared to the additional costs incurred in dispatching an exceptional movement. Under any economically rational system of decisionmaking, how this trade-off is made in any particular instance depends on the mix of mail whose timely delivery is at stake. It would not be surprising to find that, under these circumstances, unexpected delays to time-sensitive mail will result in an exceptional service movement, whereas a similar delay for other, less time-sensitive types of mail would not. For this reason, I would expect emergency contract and exceptional service movements to contain, on average, a mail mix with higher proportions of Express Mail, Priority Mail, and First Class Mail than do regular movements. Thus, if such mail movements were sampled in TRACS, the TRACS distribution keys would likely reflect a greater volume of mail than is now recorded for these time-sensitive subclasses, and a greater portion of the volume variable costs would be attributed to them.[10]

10. There is no apparent reason why emergency contracts in particular are excluded from TRACS sampling, since those contracts are "purchased in advance using a competitive bidding process." Response of the Postal Service to Interrogatory UPS/USPS-T18-76.

B. Inadequately Specified Data Collection Procedures Permit Inspectors to Bypass Time-Sensitive Mail.

There is an inherent tension between the fieldwork elements of the TRACS system and the constraints and pressures of postal operations. Operational personnel must unload trucks quickly in order to meet processing and dispatch windows.[11] Performed correctly, however, a TRACS inspection is a time-consuming process. The inspector must select a representative sample of containers, pallets, and loose items. The mail within the sample must be measured, and the subclass of each item determined and recorded. Containers must be opened, and mail from inside the container must be sampled. Such an inspection can take two to three hours to complete.[12] Obviously, this process interferes with the work of operational personnel. It is likely, therefore, that the need to dispatch time-sensitive mail places pressure on the TRACS data collector to take shortcuts.

To preserve the integrity of the overall TRACS process, the field inspector must randomize his selection of sampled items in order to maintain the representativeness of his sample. Thus, testing procedures need to be designed so that all classes of mail are equally treated and that random sampling procedures are followed at each step in the process. The TRACS fieldwork procedures defined in Handbook F-65 (USPS-LR-I-18) do not meet this standard. As noted in the A.T. Kearney Data Quality Study,

11. Postal Service Witness Degen states that "[t]rucks have limited windows for loading and unloading in order to stay on schedule." USPS-T-16, p. 50.

12. In Docket No. R97-1, Mr. Pickett stated, "each TRACS highway test can take hours to conduct." Docket No. R97-1, USPS-RT-2, p. 14. See also Dr. Bradley's testimony in this case, USPS-T-18, pp. 51-52.

published TRACS procedures provide inspectors with too much discretion in how they select items for testing and thereby allow operational pressures to bias the sample.[13]

TRACS rules for the inspection of mail unloaded from highway movements vary by the type of container in which the mail is loaded. The rule for choosing loose Express Mail items is strict, requiring the selection of all such items. The rule for choosing containers is also strict, as the computer used by the data collector chooses a random set of containers to test. For pallets, the inspector is to select any two at random. No instructions are given as to how this selection is to be made. For other loose items, the inspector is to select eight items, including at least one sack and at least one other loose item, if present. The ratio of sacks to other items selected should approximately equal the ratio of the truck floor space occupied by all items of each type. These instructions allow discretion in how the inspector samples pallets and loose mail items.

A potential problem arises because of the possibility that the inspector may use this discretion in a way that biases the sample. In particular, the operational conflicts described above may create pressure on the inspector to avoid the sampling of time-sensitive mail in order to avoid disrupting the flow of such mail through the system. In the case of some items—most notably, sacks—the inspector can determine prior to opening the item what kind of mail it contains. Tr. 17/6790; Response of the Postal Service to Interrogatories UPS/USPS-T1-50 and UPS/USPS-T1-66b. The TRACS fieldwork procedures are written in such a way that inspectors can avoid selecting

13. Data Quality Study, Summary Report, April 16, 1999, p. 86.

certain items containing time-sensitive mail without explicitly violating those rules. Pallets and loose items can be selected so as to avoid those containing time-sensitive mail. Unfortunately, no evidence is available one way or the other to permit any determination or quantification of the extent to which this happens.[14]

Ms. Xie notes that inspections are sometimes missed.[15] Failure to perform an inspection may be related to the mix of mail on the truck. A possible explanation for such missed inspections is that a truck arrives early at a facility and, because it contains time-sensitive mail, it is quickly unloaded. There need be no intent to "bend the rules" for this to happen. In such a case, the missed inspection would result in undersampling time-sensitive mail. Such concerns were also noted by the Commission in Docket No. R97-1. See PRC Op., R97-1, Vol. 1, at 217.

The time pressures under which TRACS inspections are conducted may also encourage inspectors not just to rely on the fuzziness of their guidelines in order to not stand in the way of the timely processing of time-sensitive mail, but also to violate those procedures. Such behavior would be an understandable human response to difficult conflicts encountered on the loading dock.

Moreover, TRACS procedures are subject to limited auditing. Managers monitor data collectors, but, for the most part, there are no management reports summarizing the outcomes of these evaluations. Tr. 21/9317-18. The single exception concerns the

14. See Tr. 17/6811 and Response of the Postal Service to Interrogatories UPS/USPS-T1-50c(i), which discusses the handling of time-sensitive mail.

15. See Tr. 17/6788 (stating that in some cases "a data collector is unable to record the appropriate data").

inspections of TRACS testing performed at BMCs in conjunction with the audit of the Cost and Revenue Analysis system. Tr. 21/9319. However, in FY1998, only seven TRACS tests were audited and subsequently reported upon. USPS-LR-I-264; Tr. 21/9319. Thus, there is no assurance that inappropriate applications of discretion or excessive numbers of missed inspections are not occurring.

OTHER PROBLEMS WITH TRACS

My examination of the TRACS data and their supporting files and documentation has turned up a number of other problems that raise questions about the representativeness of the TRACS distribution keys. For the record, I review these problems here.

A. Misallocation of Sample to Strata

My review of the program outputs provided by the Postal Service revealed an instance in which the sampling rate for a particular stratum was extremely low. This occurred in the sampling of Intra-SCF highway movements. This category of highway movements was divided into five categories for sampling stratification purposes, according to the trip direction, the facility type, and the arrival time. The Postal Service's design called for an overall sampling rate of Intra-SCF movements of 0.07 percent, as evidenced by the SAS logs in USPS-LR-I-207.

As one might expect, the sampling rate varied to some extent across the strata. However, in some cases, sampling rates fell far below any level that could be justified on statistical grounds. One of the stratum—Inbound Other—was sampled only eight

times in the first and second quarters. As shown in Table 7, the proportion of this stratum relative to the entire Intra-SCF sample, 2 percent, was extremely small in comparison to the relative proportion of movements accounted for by that stratum, 21 percent.

Table 7

TRACS Sample Design Data: First Quarter, 1998

Stratum	Inbound: BMC or SCF	Inbound: Other	Outbound: BMC or SCF	Outbound: Other: AM	Outbound: Other: PM	Total
1Q98 Coded Sampling Split	45%	2%	13%	30%	10%	
% of Total Movements	17%	21%	0.4%	39%	22%	
1Q98 # NASS movements	97,337	119,560	2,168	222,928	127,163	569,156
1Q98 Sampled Movements	182	8	53	121	40	404
% Sampled	0.2%	0.007%	2.4%	0.05%	0.03%	0.07%

Source: SAS logs in USPS-LR-I-207

This problem was apparently detected by the Postal Service after a quarter in which all of the tests conducted in that stratum were of empty trucks. As a result, the Postal Service increased the sampling rates for that stratum in the third and fourth quarters. Tr. 17/6798-99 (Xie).

Normally, a thin (too small) sample within a stratum does not affect the bias of the estimate of mail mix, only its accuracy, or variance. However, a sample that fails completely to cover movements in a stratum, as has occurred here on one occasion, will necessarily generate a biased estimate of the mail mix since, in this instance, the Postal Service will be required to assume that the mail mix in the unsampled stratum mirrors that elsewhere in the system.[16]

B. The Postal Service's Sample Design Requires Updating.

The Postal Service is apparently relying on a sample design that was prepared some time ago, and that has not been updated to reflect changes in network size or structure, or in the volume and mix of mail carried on it. Tr. 17/6751-52, 6795-96, 6855 (Xie). It is highly doubtful, therefore, that the design is optimal for the purposes for which it is currently being used. Moreover, as noted above, the existing sample design has caused sampling errors in the current analysis.

The TRACS system relies upon a multistage, stratified sample design. Although the same general approach is followed for all of the modes, for specificity my comments here will focus on the highway sample. In this sample, the Postal Service in the first stage draws a sample of trip-destination-days. The units that are sampled correspond to stops at particular destinations as part of particular scheduled trips on particular days. Each sampled unit directs an inspector to the unloading of a specific truck at a specific

16. Since the costs of purchased highway transportation are aggregated across strata within a contract type when the distribution key is applied, those costs will be allocated according to the average mix of mail moving within the other strata of the contract type.

location and time. At that time, the inspector in a second stage selects a sample of items (i.e., containers, pallets, sacks, etc.) to be examined. In a third stage, the inspector might also select a sample of pieces from those items.

The first-stage highway sample is based upon a stratified sample design. In such a sample design, the universe of units is divided into more homogenous subgroups, from which units are sampled at different rates. If it is appropriately optimized, a stratified sample design makes it possible to achieve greater degrees of precision at equal or lower costs. The possibility for this gain in efficiency arises when there are differences between strata in the variability of the phenomena under study. The goal of a sample design is generally to achieve the greatest possible precision of measurement for any given level of cost. Since cost is generally driven by the number of units sampled, the goal of a sample design will be to use a fixed number of sample units to maximum effect. A stratified sample design accomplishes this by recognizing and taking into account differences in variability between strata. Indeed, in an effective stratified sample, design strata will be defined so as to make each as uniform as possible.

In the present case, the relevant criterion is the uniformity of mail mix across movements within a stratum. If a particular stratum is highly uniform, a relatively small sample will suffice to provide accurate estimates of the average mail mix within that stratum. In contrast, if mail mix varies dramatically from unit to unit, a much larger sample is required to achieve the same degree of precision. An optimized sample design will allocate sample units across strata in such a way as to give relatively more

weight to higher-variance strata, and thus produce the highest degree of overall precision possible for the selected sample size.[17]

Even if the original TRACS sample design were produced through a process like that described above, changes over time in the size and configuration of the network and in the volume and mix of mail will lead to its obsolescence. To avoid the resulting loss in efficiency, the sample design should be updated on a regular basis. Periodic postal rate cases provide a natural context for carrying out this updating process. Inspections carried out in preparation for a case provide the information needed to measure variances within strata and thus to update the sample design for the following rate case. Such updates should be made on a regular basis. Thus, I support the Postal Service's expressed intention to review the TRACS sample design in FY2001, Tr. 17/6852 (Xie), and I urge that the design be updated and that regular reviews and updates be conducted thereafter.

My comments thus far have focused on the first-level sample design. As I described above, the TRACS system often relies on a complex multistage sampling process. In some instances, the procedures for the selection of items and pieces are not fully randomized, leaving an undue opportunity for the exercise of too much inspector discretion in how those selections are made. Whether the specifications for sampling rates at these levels reflect a fully articulated and optimized sample design is not clear from the documentation I have been able to examine. Written instructions for

17. For overviews of stratified sampling technique, see Steven K. Thompson, Sampling, New York: John Wiley and Sons, 1992, or William G. Cochran, Sampling Techniques, 3rd edition, New York: John Wiley and Sons, 1977.

inspectors have a certain ad hoc tone, which makes one suspect that this part of the sampling process has never been analyzed from a rigorous statistical standpoint. If that suspicion is correct, these elements of the sample design should be thoroughly reevaluated. [18]

C. Adequacy of the Sampling Frames Used

Review of the programs and computer outputs from the highway subsystem of TRACS (USPS-LR-I-52 and USPS-T-1) raise some troubling questions about the adequacy of the data sources used to construct the sampling frame.[19] First, important categories of highway movements -- those designated as emergency contracts or exceptional service movements -- are excluded. Second, a substantial number of movements -- 30 percent of the total -- are dropped during processing for reasons that are unclear.

The highway sample selection procedure combines data from several management information system data bases: NASS (the National Air and Surface System), the Highway Pay Master File, and HCSS (the Highway Contract Support System). The sampling frame is developed from these data bases by a series of SAS

18. TRACS highway procedures are documented in Handbook F-65, Chapter 5 (USPS-LR-I-18). Similar concerns are raised in the A. T. Kearney Data Quality Study, Summary Report, April 16, 1999, p. 86.

19. The "sampling frame" is the list of all of the members of a population from which a sample is drawn.

programs that remove incomplete or inappropriate records and combine information from the different systems.[20]

As mentioned, one of the steps in this process results in the deletion of approximately 30 percent of the available records. These deletions are described in Ms. Xie's responses to interrogatories UPS/USPS-T1-38-41, Tr. 17/6800-03. They represent routes in NASS that fail to match routes in the Highway Pay Master File.

The reasons for these mismatches are not fully clear. In the response to UPS/USPS-T1-67, Ms. Xie listed reasons why about 27 percent of these records are dropped. Tr. 21/8590. The largest category is because they are emergency routes (13 percent of the drops).[21] Other deletions include box routes and terminated or inactive routes. The remaining 73 percent of the deletions, constituting approximately 22 percent of the records in the original NASS file, occur simply because they are "not in Highway Pay Master File."[22] This statement of fact does not explain why they are absent. To the extent these routes represent actual routes for which accounting data are temporarily missing, as opposed to, say, routes terminated long ago but never removed from NASS, they represent a significant fraction of the total system that goes unsampled. The mail mix on these routes is unknown.

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20. SAS logs documenting the execution of these programs appear in USPS-LR-I-207.

21. As noted above, the failure of TRACS to sample emergency contracts and exceptional service movements is a major shortcoming of the system.

22. (30% of available records dropped) X (73% of deletions unexplained) = 22% of records in original file.

Other deletions are due to the extraction of "the regular routes from the Highway Pay Master File." Tr. 17/6800 (Xie). No description is given, however, as to what the nonregular routes represent. To quote Ms. Xie, "We only sample regular non-box routes, but NASS includes more than that. Although I have not reviewed why each record is dropped, the dropping rate is fairly consistent across time. We do have a process to check various non-matching rates every time the sample selection programs are run." Tr. 17/6803. Thus, the Postal Service has failed to explain what is dropped at this stage of the process, yet it appears not to be concerned that the high drop rate has prevailed for some time.

The effect of dropping such a high fraction of routes is not clear. There is no way to ascertain what these routes represent, nor whether they contain the same mix of mail as the sampled routes. To the extent that these routes include emergency routes (as confirmed by Ms. Xie, Tr. 17/6810), then a share of these dropped records simply represents the implementation of the omission described in the previous section, and thus the arguments on the effect of the omission made in that section pertain.

Due to concerns about the potential for bias created by the deletion of so many records from the sampling frame, I sought information with which to assess the representativeness of the final highway sample.[23] I thought that by looking at variables that were not used directly in the sample selection process, I could gain some insight into how the records that were dropped may have differed from those that were

23. *See* Interrogatories UPS/USPS-T1-2, 3, 5, 6, 8, 9, 11, 12, 14, 15, 18, 19, 22, 25–27, and 77.

retained. The Postal Service balked at providing the requested information.[24] However, statements made in the course of this exchange made it clear that the information necessary to carry out such an analysis did not exist, at least for this proceeding.

In particular, the Postal Service has failed to retain copies of the raw data upon which the sample selection process is based. Response of the Postal Service to Interrogatories UPS/USPS-T1-2, 5, 8, 11, and 14. The NASS and HCSS files used in generating the highway and commercial air samples are dynamic data bases that are continually updated to reflect ongoing changes to the transportation system. Sample selection is based on versions of these data bases as of the instant the samples are drawn. The ongoing updating process begins to alter these files almost immediately, and, over time, they diverge more and more from the versions that existed as of the time of sample selection. Thus, the version of the file that exists currently differs from that used in the sample selection process, and there is no way in which to evaluate the representativeness of movements selected.

That need not be the case, however. To permit an appropriate evaluation of the accuracy and reliability of the TRACS samples, the Postal Service could and should, in future rate cases, retain full copies of the files used to create the sample frames as of the points in time when the samples are drawn.

24. Partial Objection of USPS to UPS/USPS-T1-2, 3, 5, 6, 8, 9, 11, 12, 14, and 15; Supplemental Responses of USPS to UPS/USPS-T1-18, 22, 25–27, after a UPS motion to compel, and Partial Objection of USPS to UPS/USPS-T1-77.

IMPROVING THE TRACS PROCESS

My criticisms of TRACS as it is currently implemented naturally lead me to consider ways in which its accuracy and reliability might be improved. In this final section, I present a number of suggestions for improvement. The list presented below is not intended to be comprehensive.

A. Supplementing TRACS with Information from Administrative Data Bases

The analysis of mail volumes could be improved greatly by the use of data from an existing management data base, the Transportation Information Management Evaluation System ("TIMES"). Data from TIMES could be used to evaluate the accuracy of the TRACS system, given minor revisions in data base procedures. Furthermore, as long as they are excluded from the TRACS process, TIMES data could be used to partially evaluate the mail mix on emergency contracts and in exceptional service movements in a way that would determine whether sampling bias exists in the TRACS system. Finally, for at least some facilities, TIMES could provide information on the universe of mail movements that could be used as part of the process of estimating subclass distributions.

Professor Bradley finds TIMES to be inadequate to allow development of distribution keys for purchased highway costs. USPS-T-18, pp. 57-59. His evaluation is incomplete, however, as it was limited in two crucial respects. First, he considered only the system as it is currently implemented, and failed to consider modest changes that might greatly improve its utility. Thus, he observes that information for certain fields containing load information is not required to be recorded, but his evaluation does not

take the simple additional step of considering the usefulness of TIMES if steps were taken to require the recording of load information. Second, he evaluates the use of TIMES solely as a replacement for TRACS. This limited evaluation ignores the possibility of using TIMES to ***supplement*** TRACS.

I propose that two changes be made in TIMES and TRACS.[25] First, the recording of load information in TIMES should be made mandatory. The extra burden of recording container counts in TIMES by container type seems not to be onerous. In addition, recording this information for all movements in TIMES increases the value of the information that is already being recorded some of the time.

Second, the same coding should be used for both the TIMES and the TRACS systems. Both TIMES and TRACS currently record information about containers, but they do so in inconsistent ways. TIMES identifies containers by type: GPC, BMC, Amtrak, hampers, and pallets, as well as Express Mail items. TRACS also records container information by type, but uses a different set of categories: Wiretainer, GPC/GPMC/APC, Short or Tall Postal Paks, and a number of other types (Handbook F-65, Figure 5-44, p. 5-73, USPS-LR-I-18). Changing the coding of containers in either TIMES or TRACS does not seem like a major change.

TIMES can act as a supplement to TRACS because it records information on all movements at the locations at which it is implemented, and it records information for a wider variety of highway movements. The potential benefits of using this additional

25. To the extent that VTAPS serves a function similar to TIMES at BMCs, that system should also be modified and used. Tr. 21/9355.

information are twofold. First, data on container movements in TIMES can be used to determine whether the TRACS sample is unbiased. Specifically, one can compare the proportions of containers used by type recorded in TIMES with those recorded in TRACS. The TIMES data are not sampled, but rather represent a population against which the TRACS sample can be compared. It is also possible that information from the two sources could be used in an integrated fashion, with TIMES providing information on container counts for the facilities it covers, and the role of TRACS changing to one of measuring contents by container type.

Second, TIMES can be used to evaluate the mix of mail on emergency contracts and in exceptional service movements. Emergency contracts and exceptional service movements are an important component of overall highway costs, as described above; yet, they are not sampled in TRACS. Using TIMES, one can estimate the mail mix on such movements by multiplying measures of container movements by measures of average mail mix within each container type. The latter information can be calculated from TRACS data, as long as it has the same container type coding as TIMES does.

There will certainly be limitations that constrain the usefulness of TIMES. Most important, TIMES is not implemented systemwide, but is used only at locations where container use is relatively high. Thus, it is unlikely to provide much useful information about Intra-SCF movements. But it is highly likely to provide complete information about Inter-BMC movements. The availability of complete information for a part of the highway network would be a significant improvement over the current system. The fact that mail volumes by subclass are not recorded may be seen as a limitation as well, but in fact it is not. Since the TIMES data would be used as a supplement to TRACS rather

than as a replacement for TRACS, the detailed subclass information would not be essential.

B. Changing Sampling Procedures

My suggested improvements to the approach used to assign empty space costs derive from the essential fact that the individual segments on a route are interrelated and hence cannot properly be viewed in isolation. The alternative procedure I present is designed to respond to this criticism in a way that is practical, given the existing data. For the next rate case, however, some relatively simple changes to TRACS would permit a much more accurate treatment.

Specifically, I recommend that TRACS sample all segments on a trip. Armed with full information on all segments of a trip, one can more directly determine the mail mix to which costs on the trip should be allocated, by considering the characteristics of the mail on all of the segments.

Note that this recommendation is not the same as sampling all trips and stops on a contract, which Dr. Bradley criticizes in his testimony (in considering a method to more closely integrate TRACS with HCSS). USPS-T-18, p. 43 n.42, 55-56. His criticisms are based on the need to sample an average of 11.2 stops per primary sampling unit (contract) tested. USPS-T-18, p. 56. That would require the presence of large numbers of data collectors in the same area and would substantially reduce the range of primary sampling units (contracts, in this case) tested.

By contrast, my recommendation is to sample all segments on a trip, not in a contract. The reduction in the range of tested primary sampling units associated with this proposal is much smaller than in the case of the proposal which Dr. Bradley rejects. Furthermore, the concentration of data collectors over which he expresses concern need not necessarily occur. Since most trips are repeated, one could conceivably sample different segments on different weeks. Under such a system, the workload concentration problems cited by Dr. Bradley would not occur.

CONCLUSION

The Postal Service's approach of imposing the entire network premium costs of the Eagle and Western networks solely on Express Mail ignores current operational realities. Priority Mail represents more than 48% -- almost half -- of the volume carried on those networks, whereas the Express Mail volume carried on them is less than half of that (22%). Moreover, those networks as they currently exist have been configured with Priority Mail as well as Express Mail in mind. As a result, I recommend that the Commission allocate the network premium costs to both Priority Mail and Express Mail, as shown in my testimony.

The Commission should also modify the current method of distributing the costs of empty space in purchased highway transportation. Those costs are incurred because of the need to purchase sufficient capacity to accommodate the mail volumes carried on the transportation legs with the greatest capacity utilization. I recommend to the Commission an alternative approach to the distribution of the costs of empty space which recognizes that reality.

Finally, there is substantial evidence that TRACS undersamples time-sensitive mail. As a result, I suggest a number of methods for improving the distribution of purchased transportation costs.

Appendix A

Kevin Neels — Vice President

Ph.D.	Cornell University
A.B.	Cornell University

Kevin Neels has over twenty years of economic research and consulting experience. He has worked on behalf of numerous public and private sector clients in a wide range of industries. A skilled econometrician, he specializes in the use of quantitative techniques to resolve practical business, legal and regulatory problems. His extensive practical experience in the use of economic analysis to inform business decision making and win the support of legislative, legal and regulatory authorities has taught him how to effectively communicate analytical results in laymen's terms.

Dr. Neels has offered expert testimony on a number of occasions, either in the form of an expert report, in deposition or orally. He has also supported leading academic expert witnesses. Dr. Neels has played a key role in legal and regulatory proceedings for which the financial stakes have often run into tens or hundreds of millions of dollars. His work in support of counsel has touched all phases of the legal process, including discovery, development of theory, preparation of expert testimony, examination of opposing witnesses, preparation of trial exhibits and development of cross-examination strategy.

A frequent focus of Dr. Neels' work has been estimation of economic damages. He directed the team of economists working for the Plaintiff in the trial that resulted in the largest damage judgment ever awarded in a patent infringement lawsuit. On many occasions he has developed econometric models to support economic damage claims and testimony in antitrust litigation. He has also frequently been responsible for review and analysis of damage estimates put into evidence by opposing experts and for development of strategies for refuting these claims.

Dr. Neels has extensive experience in the areas of antitrust economics and damage estimation. He has been designated as an expert witness and has offered deposition testimony in a number of antitrust disputes. His work has addressed issues of both geographic and product market definition, as well measurement of antitrust damages. His work in support of clients involved in antitrust litigation has touched all phases of the process, from earliest discovery through closing arguments at trial.

Dr. Neels possesses particular expertise in the analysis of spatial economic relationships. His work has addressed questions of geographic market definition, intraurban and interurban travel behavior, relationships between freight transportation costs and product prices, determinants of location decisions and relationships among spatially differentiated products. His work has assisted clients in diverse sections of both the passenger and freight transportation industries.

Among the projects Dr. Neels has successfully concluded are:

- For a group of automobile dealers he conducted an econometric analysis to quantify the extent to which these dealers had suffered economic injury as a

result of a scheme in which executives of the auto manufacturer accepted bribes from a subset of dealers in exchange for providing them with extra allotments of highly profitable car models. The settlement of this litigation awarded a payment of several hundred million dollars to the non-bribe paying dealers.

- For an express package delivery carrier intervening in a rate case before the U.S. Postal Rate Commission he conducted a critical review of econometric studies of cost variability introduced into evidence by a witness testifying on behalf of the U.S. Postal Service. He identified a number of serious conceptual and methodological flaws in this analysis, and demonstrated that the substantive conclusions of the analysis were sensitive to relatively minor change in its design. On the basis of his testimony the Commission rejected the arguments of the Postal Service in the Commission's final ruling.

- For a major international air carrier accused of monopoly leveraging and attempted monopolization of a key market he prepared a report analyzing the carrier's use of corporate discounts and travel agent override commissions to help rebut arguments that these agreements constituted exclusive dealings.

- He played a major role in the preparation of expert testimony on behalf of a group of major domestic oil companies accused of conspiring to depress the prices paid to producers of a major input to tertiary oil recovery projects. This testimony focused on an examination of purchase contracts involving the defendants to establish market prices for the input in question over the alleged damage period.

- For the International Air Transport Association he conducted an analysis and critique of a proposed change in the structure of air traffic control user charges levied on foreign carriers entering the U.S. and overflying its territory. He pointed out a number of serious flaws in the empirical analysis that formed the basis for the new system of charges. Implementation of the new charges was halted by a federal judge.

- For a manufacturer of class III medical devices he conducted a series of statistical analyses of turnover in the population of patients using a number of the company's key products. This analysis produced a profile of how patients clinical situation and needs evolved over time. These results provided the basis for a redirection of the company's product development strategy.

- Working for plaintiffs in an antitrust lawsuit involving the petroleum industry, he prepared an expert report criticizing analyses and testimony of defendants' experts. This report reviewed flaws in defendants' geographic market definition

and rebutted criticisms made by defendant experts of plaintiffs' damage calculations.

- In support of a key economic witness in a hearing regarding refined petroleum product pipeline rates before the Federal Energy Regulatory Commission, he conducted an analysis the relationship between product prices in the different geographic areas linked by the pipeline system. He also examined alternative transportation modes and concentration in the pipeline's origin markets.

- For a major international oil company, he offered advice on econometric issues raised by an empirical study of the determinants of fair market value for a specific grade of crude oil.

- For the U.S. Department of Energy, he conducted an extensive investigation of the technological, institutional and economic factors influencing the demand for residential heating fuels.

- For a Gas Research Institute study of natural gas usage in the steel industry, he provided consultation on statistical issues and worked closely with a team of analysts examining the economics of fuel substitution.

- For a small package express company, he conducted a detailed analysis of the economic incentives created by alternative regulatory frameworks. This effort focused on the effects of proposed regulatory changes on entry by new firms, on the competitive structure of the market and on the potential for cross-subsidy by multi-product firms with diverse offerings.

- He played a critical role in a project for the Air Transport Association (ATA) of the United States to evaluate proposals for reforming the nation's air traffic control (ATC) system and to develop an effective financial and organizational structure for a reformed ATC. The plan, developed under extremely tight deadlines, required an assessment of ATC technological capabilities, estimation of the cost effects of ATC on the airline industry, an economic analysis of current and proposed ATC organizational forms and detailed financial assessment of proposed ATC entities. Dr. Neels presented his analysis and proposal to airline chief executive officers at a meeting of the ATA board.

- Working of behalf of a major air carrier in an antitrust case involving allegations of predatory pricing, he worked directly with the lead litigator to develop a strategy to guide the discovery portion of the case. Subsequently, he conducted a variety of econometric analyses measuring the extent to which plaintiffs were harmed by the alleged predation.

KEVIN NEELS

- For a consortium of major U.S. air carriers accused of engaging in collusion and price fixing, he directed a major economic analysis of industry pricing strategy and dynamics. Drawing upon detailed data on daily fare changes, he prepared testimony and exhibits demonstrating the difficulty of engaging in coordinated pricing behavior.

- For a major U.S. air carrier, he conducted an extensive empirical investigation of the responses of travel agents to carriers' incentive and override programs. Using the results of this investigation, he evaluated his client's sales force management and travel agent incentive strategies to identify specific ways in which redesign and or retargeting could increase their net revenue yields.

- He assisted in the preparation of statistical exhibits and an expert affidavit for submission by a major U.S. carrier in a rulemaking proceeding regarding airline computerized reservation systems conducted by the U.S. Department of Transportation.

- He provided expert deposition testimony on geographic market definition in an antitrust lawsuit between a regional medical center and a physician-owned health clinic. To support his opinions he analyzed the structure of competition between alternative hospitals within the area and conducted an empirical analysis of patient decisions regarding choice of hospital for the service in question.

- For a biotechnology company involved in a trade secret misappropriation dispute with a competitor, he offered expert deposition testimony on potential fields of application for the technology in question and on the factors that influenced customer decisions to incorporate the new technology in their products. As part of this case he also conducted an empirical investigation in the role that technology licensing deals play in the financing of biotechnology start-up companies.

- To support expert testimony in an antitrust case between two major U.S. air carriers he developed and estimated a set of statistical models for estimating the effects of CRS display bias on the booking patterns and revenues of the affected airlines. As part of this effort he conducted an extensive analysis of the histories of the carriers in questions and of the development of computerized reservation systems as the primary channel of distribution for airline tickets. He also prepared damage estimates, assisted in the deposition of opposing expert witness, prepared trial exhibits and advised counsel on cross-examination strategy during the course of the trial.

- He directed the team of economists responsible for conduct of the damages study for plaintiff in a major patent infringement lawsuit in the consumer products industry. His work included development of econometric models to forecast product sales in eight major world markets, analysis of the effects of incremental changes in sales volumes on company profits, review of historical pricing strategies and calculation of economic damages for a wide range of "but-for" pricing and product introduction strategies. He and his team also played a key role in the analysis of the case put forth by the opposing side and in the development of cross-examination strategies for opposing expert witnesses. He was designated as an expert witness in this matter, but was not called upon to testify.

- For the public authority responsible for the operation of one of the largest international gateway airports in the country, he conducted a comprehensive review of sources of information on air cargo movements. Based upon the results of this review, he worked with authority staff to devise a strategy for monitoring trends in shipments by ultimate origin and destination, commodity, carrier and type of service, and for factoring this information into an improved process for planning and executing air cargo facility improvements.

- Working under extreme deadline pressure for a European pharmaceutical company, he estimated savings in total medical costs from pharmacological therapy for chronic occlusive arterial disease in order to provide input to a key regulatory dossier. Results were subsequently published in a peer-reviewed journal.

- To support the development of an airport system plan for a major metropolitan area, he prepared long-range activity forecasts for air carriers, regional airlines and general aviation.

- For the developer of a medical device-based pain management therapy, he conducted a cost-effectiveness analysis for internal use. He built upon this work to develop a reimbursement and marketing strategy for the product.

- For the top management of an emerging health care company, he prepared an analysis and briefing to review the market implications of health care reform and the strategies adopted by competing firms in response.

- For a regional air carrier accused of engaging in predatory pricing, he assisted counsel in defining the relevant product and geographic markets and in developing estimates of the short-run marginal costs of serving those markets. He also prepared evidence on the ease of entry and on the likely behavior and strategies of potential entrants.

- For the operator of a system of outpatient medical clinics, he conducted an analysis of the economic incentives created by investments by referring physicians. His conclusions were summarized in a written report, along with discussion of their implications for policy regarding regulation of such investments by the federal government.

- For a major manufacturer contemplating litigation over an alleged theft of trade secrets, he developed a system of economic forecasting models to calculate the effects of the theft of sales of the company's products in a number of major international markets. Results of this confidential investigation played a key role in the company's subsequent decision to seek redress through the courts.

- For a group of physicians involved in a health insurance-related private antitrust lawsuit he conducted a critical review and analysis of damage models prepared by opposing experts. His findings provided the basis for expert testimony by a leading university-based economist. In addition, he provided assistance to counsel in the deposition of opposing economic experts.

- For the plaintiff in an antitrust suit involving an important line of biotechnology products, he conducted an analysis of therapeutic substitution possibilities to support development of testimony regarding product market definition.

- As leader of a project funded jointly by the Ford Foundation, the U.S. Department of Housing and Urban Development and a consortium of local corporations, he directed a year-long study by the Rand Corporation of strategies for privatizing municipal services in Saint Paul, Minnesota. A major component of this project was a detailed analysis of the incentives created by different financing mechanisms, organizational structures and personnel management systems. Findings of the study were published in a major report entitled *The Entrepreneurial City*.

- For the developer of a new cardiac diagnostic imaging agent, he used meta-analysis and receiver operating characteristic curve techniques to measure the accuracy of procedures using the agent relative to competing diagnostic techniques.

- For an arm of the National Academy of Sciences, he conducted an investigation of the innovation process in medical technology and analyzed how that process has been effected over time by changes in the institutional and economic environment.

KEVIN NEELS

- Working under a federally funded research grant, he served as a key staff member of a Rand Corporation study of the equity implications of substituting user charges for tax funding of public services.
- For the developer of a new orphan drug, he conducted a cost-benefit analysis, a review of political and legislative trends and a hedonic analysis of existing orphan drug prices to support development of a defensible pricing strategy.
- For a medical device company, he prepared a payor education brochure describing the results of a cost-effectiveness study of a new therapy, which allows payors to calculate the savings they could realize by granting coverage of the therapy.

Before returning to Charles River Associates to lead our Transportation Practice, Dr. Neels held a variety of responsible positions within the research and consulting industry. He was a vice president at PHB Hagler Bailly, Inc., and the vice president for Health Economics and managing director of the Cambridge office of Quintiles Inc., where he directed a team of economists serving a worldwide clientele of pharmaceutical and biotechnology, and medical device companies. Previously, he was vice president in charge of the pharmaceutical consulting practice at Charles River Associates. He has also served on the research staffs of the Rand Corporation, the Urban Institute and Abt Associates.

PROFESSIONAL AFFILIATIONS

American Economic Association

American Law and Economics Association

National Association of Business Economists

National Health Lawyers Association

International Health Economics Association

Drug Information Association

KEVIN NEELS

PUBLICATIONS AND TESTIMONY

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KEVIN NEELS

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KEVIN NEELS

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APPENDIX B:

DISTRIBUTION KEY FORMULAS

This appendix provides the formulas used to calculate the purchased highway transportation distribution keys used in my testimony. It is based on the description of the Postal Service formulas given in the TRACS Highway Subsystem Statistical and Computer Documentation (USPS-LR-I-52) and uses the same notation and language, wherever possible.

I produce quarterly distribution keys for four contract types, just as the Postal Service does (Inter-BMC, Intra-BMC, Inter-SCF, and Intra-SCF). The data are expanded in a five-step process, incorporating two stages of distribution key calculations, to obtain cubic foot miles by mail category for each contract type.

The formulas below are altered versions of those shown in USPS-LR-I-52, sections VII-2-3. Where equations have been changed, their number is now indicated with a prime, for the first stage, and a double prime, for the second stage. Thus, in section 2 below, Postal Service equation (11) becomes my equation (11'). Where new equations are included, their number is shown with a suffix as well as a prime. Thus, in section 4 below, equations (10a") and (10b") are replacements for Postal Service equation (10).

1. Expanding to Unloaded Truck Capacity

My first step is the same as that used by the Postal Service: test data are expanded to the unloaded truck capacity. I use the same formulas as the Postal Service for expanding mail to fill the enclosures (containers, pallets, loose items), as

described in USPS-LR-I-52, section VII-1. At the end of this step, one has determined the cubic feet of the mail which was loaded on the truck at origin o and unloaded at the test stop, $cuft_{iro}$, for all origins o, mail categories r, and tested vehicles i.

2. First Stage: Cubic Foot Mile Calculation

My method begins to differ from the Postal Service's method at the second and third steps, where I calculate a first-stage distribution key. This key differs from the final Postal Service key in two important ways. First, it does not expand the mail into any empty space; this is done in the fourth step. Second, it considers only the mail found on trucks whose capacity utilization lies above a certain threshold. The purpose of this first-stage key is to determine how to "fill" the empty space on the trucks.

The first-stage cubic foot miles are not expanded to fill empty space. When summed across all the origin facilities up to a specific leg, equation (9) from USPS-LR-I-52 produces the cubic foot estimates for the mail traveled on the leg:

$$cuft_{irs} = \sum_{o=1}^{s} cuft_{iro} \; . \qquad (10)$$

Each sample record contains a complete list of legs the mail item traveled on the vehicle. For each leg, the sample record also specifies its origin and destination facilities and the highway miles between the two. The cubic foot miles for each leg is the product of the cubic feet estimates and the highway miles for the leg. The cubic foot miles is the sum of such products across all legs:

$$cfm_{ir} = \sum_{s=1}^{S} cuft_{irs} \times mile_{is} \qquad (11')$$

where mile is assumed equal to 1 for legs within Intra-SCF contracts. No equation (12) or (12') is used.

3. First Stage: Distribution Key for Heavily Loaded Trucks

I expand the test level cubic foot miles obtained from equation (11') in the previous section to the stratum level and sum across strata, including only those tests where capacity utilization exceeds the pre-specified threshold T. The distribution key is a set of ratios of the unexpanded cubic foot miles for an individual mail category to the total unexpanded cubic foot miles summed across all the mail categories. I calculate one key for each contract type, regardless of stratum.

$$\breve{y}_r = \frac{\sum_{h=1}^{H}\left(\sum_{i=T}^{n_h} cfm_{ir} \times T\right) w_h}{\sum_{r \in R}\sum_{h=1}^{H}\left(\sum_{i=T}^{n_h} cfm_{ir} \times T\right) w_h} = \frac{cfm_r}{\sum_r cfm_r} = \frac{cfm_r}{cfm}, \qquad (13')$$

where the stratum weights

$$w_h = \frac{\sum_{I=1}^{N_h} Day_I \times Q}{n_h}, \qquad (14')$$

and where the dummy variable T takes the value one if

1 - %Empty$_i$ > 1 - 1/(average number of legs per trip within the contract type), and

zero otherwise.

4. Second Stage: Cubic Foot Mile Calculation

In my fourth step, I use the first-stage distribution key to "fill" the empty space in the trucks, by calculating the number of empty cubic foot miles to allocate to each mail category, based on the first-stage distribution key. My definition of empty space is only slightly altered from the Postal Service's definition. For the last, observed leg on a trip, it is the observed empty space on the vehicle. For earlier legs on the same trip, it is the average empty space on all vehicles in the same contract type; this measure differs from that used in the Postal Service's approach, which uses all vehicles in the same stratum.

Each sample record contains a complete list of legs the mail item traveled on the vehicle. For each leg, the sample record also specifies its origin and destination facilities and the highway miles between the two. The full, or occupied, cubic foot miles for each leg are the product of cubic feet and highway miles for the leg. The full cubic foot miles are the sum of such products across all legs:

$$fullcfm_{ir} = \sum_{s=1}^{S} cuft_{irs} \times mile_{is} \qquad (10a'')$$

The allocated empty cubic foot miles are determined by calculating total empty cubic foot miles, and then applying the first stage distribution key:

$$emptycfm_{ir} = \tilde{y}_r \times capacity_i \times \sum_{s=1}^{S} empty_{is} \times mile_{is} \qquad (10b'')$$

where

$$empty_{iS} = \%Empty_i \times \frac{\%Unloaded_i}{\%Unloaded_i + \%Remain_i} \quad \text{and}$$

$$empty_{is} = \frac{\sum_{i=1}^{n} \%Empty_i}{n} \times \frac{\sum_r cuft_{irs}}{capacity_i \times (\%Unloaded_i + \%Remain_i)} \quad for\ s < S,$$

mile is = 1 for legs within Intra-SCF contracts, and n is the number of tests within a contract type.

Summing actual cubic foot miles and expanded cubic foot miles yields total cubic foot miles by mail category:

$$totcfm_{ir} = fullcfm_{ir} + emptycfm_{ir} \qquad (11'').$$

Again, no equation (12) or (12") is used.

5. Second Stage: Distribution Key

My fifth step follows the same process as the Postal Service's third step. The test level cubic foot miles obtained from equations (11") in the previous section are expanded to the stratum level and summed across strata. The distribution key is a set of ratios of the expanded cubic foot miles for an individual mail category to the total expanded cubic foot miles summed across all the mail categories.

$$y_r = \frac{\sum_{h=1}^{H}\left(\sum_{i=1}^{n_h} totcfm_{ir}\right)w_h}{\sum_{r\in R}\sum_{h=1}^{H}\left(\sum_{i=1}^{n_h} totcfm_{ir}\right)w_h} = \frac{totcfm_r}{\sum_r totcfm_r} = \frac{totcfm_r}{totcfm}, \qquad (13'')$$

where the stratum weights are the same weights defined previously:

$$w_h = \frac{\sum_{I=1}^{N_h} Day_I \times Q}{n_h}. \qquad (14')$$

6. Zero-Volume Tests

Note that roughly 20 percent of the tests are zero-volume tests. In these cases, nothing was unloaded from the truck at the delivery point. In the Postal Service's calculations, the data from these tests have no impact on the distribution key calculation. Since all of the highway costs are distributed according to the calculated distribution keys, this lack of impact means that the costs of empty movements are attributed according to the average mix of mail (actually, the final distribution key mix, which is the average expanded mix of mail). In my version, the costs are also attributed according to the final distribution key mix, but the mix is the average empty-space-allocated expanded mix of mail.

7. Notation

The following notation, much of which is taken from USPS-LR-I-52, page 15, is used in this appendix to explain the expansion process:

h stratum. For Inter-SCF and Inter-BMC, h=1,2,3. For Intra-SCF and Intra-BMC, h=1,2,3,4,5;

n number of tests performed in a quarter;

1	i	test index within the stratum;
2	N	number of frame units for the quarter;
3	I	frame index;
4	Day	number of days in a week that a vehicle operates;
5	Capacity	vehicle capacity in cubic feet;
6	%Empty	percent of vehicle space that is empty;
7	%Remain	percent of vehicle space occupied by mail remaining on the truck;
8	%Unloaded	percent of vehicle space occupied by mail unloaded;
9	S	total legs traveled on this trip, up to the test stop;
10	s	segment index, or leg, on the trip {s=1,2,...,S};
11	o	origin index—the segment of the origin facility where the item was loaded
12		onto the vehicle {o$\in$1,2,...,S};
13	miles	segment mileage;
14	r	mail category, r$\in$R;
15	cuft	mail cubic feet;
16	cfm	mail cubic foot mile;
17	y	second-stage, or final, distribution key for the quarter;
18	$\check{y}$	first-stage distribution key for the quarter; and
19	Q	weeks in the quarter {Q=12 for Q1, Q2, Q3; Q=16 for Q4}.

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

MR. McKEEVER: Mr. Chairman, I apologize, I did not ask Dr. Neels to do that. I will do that now.

CHAIRMAN GLEIMAN: Certainly. I believe there are copies on the table.

[Pause.]

MR. McKEEVER: Dr. Neels has now examined that packet.

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

THE WITNESS: They would.

CHAIRMAN GLEIMAN: No corrections?

THE WITNESS: None.

CHAIRMAN GLEIMAN: That being the case, counsel, if you could provide the two packets of designated written cross examination to the court reporter, I'll direct that the material be transcribed into the record and received into evidence.

[Designated Written Cross Examination of Dr. Kevin Neels was received in evidence and transcribed in the record.]

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, DC 20268-0001

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

DESIGNATION OF WRITTEN CROSS-EXAMINATION
OF UNITED PARCEL SERVICE
WITNESS KEVIN NEELS
(UPS-T-3)

Party	Interrogatories
Association of Priority Mail Users, Inc.	APMU/UPS-T3-1-6
United States Postal Service	USPS/UPS-T3-1-18

Respectfully submitted,

Margaret P. Crenshaw

Margaret P. Crenshaw
Secretary

INTERROGATORY RESPONSES OF
UNITED PARCEL SERVICE
WITNESS KEVIN NEELS (T-3)
DESIGNATED AS WRITTEN CROSS-EXAMINATION

Interrogatory	Designating Parties
APMU/UPS-T3-1	APMU
APMU/UPS-T3-2	APMU
APMU/UPS-T3-3	APMU
APMU/UPS-T3-4	APMU
APMU/UPS-T3-5	APMU
APMU/UPS-T3-6	APMU
USPS/UPS-T3-1	USPS
USPS/UPS-T3-2	USPS
USPS/UPS-T3-3	USPS
USPS/UPS-T3-4	USPS
USPS/UPS-T3-5	USPS
USPS/UPS-T3-6	USPS
USPS/UPS-T3-7	USPS
USPS/UPS-T3-8	USPS
USPS/UPS-T3-9	USPS
USPS/UPS-T3-10	USPS
USPS/UPS-T3-11	USPS
USPS/UPS-T3-12	USPS
USPS/UPS-T3-13	USPS
USPS/UPS-T3-14	USPS
USPS/UPS-T3-15	USPS
USPS/UPS-T3-16	USPS
USPS/UPS-T3-17	USPS
USPS/UPS-T3-18	USPS

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS TO
INTERROGATORY AND REQUEST FOR PRODUCTION OF DOCUMENTS
OF THE ASSOCIATION OF PRIORITY MAIL USERS, INC.

APMU/UPS-T3-1.

At page 4 of your testimony you state that the Commission's "attribution [of dedicated air network premium costs solely to Express Mail in Docket No. R97-1] was based upon Postal Service witness Takis' statement that if Express Mail were eliminated, the Eagle network would be shut down and the Priority Mail and First Class Mail moving on that network would be diverted onto commercial flights with no degradation in service quality."

a. Would you agree that in Docket No. R97-1 witness Takis' testimony represented new evidence concerning the basic reason for the existence of the Eagle Network? Please explain fully any disagreement.

b. Please cite all testimony by any witness, including those of UPS, which offered in Docket No. R97-1 a refutation to the cited testimony of witness Takis.

c. Is your testimony in this docket offered as rebuttal to the testimony of witness Takis in Docket No. R97-1?

d. Is it your opinion that the Commission's acceptance of witness Takis' testimony in Docket No. R97-1 was in error? Please explain any affirmative answer.

Answer to APMU/UPS-T3-1.

(a) No. In his R97-1 testimony, Mr. Takis stated in footnote 6 on page 12 that "It is my understanding that Priority and First-Class Mail are 'filler' on the Eagle network,

and could meet their service standards if they traveled on standard commercial flights." He may have had evidence upon which to base his "understanding," but he did not present this evidence in his testimony.

(b) I am not aware of any testimony offered in R97-1 to refute the assertions of Mr. Takis.

(c) I am offering testimony in this proceeding in response to the testimony of Postal Service witnesses Pickett and Bradley. See my testimony, UPS-T-3, at page 4, lines 11-21.

(d) I have not evaluated the relevant evidence presented in R97-1 or formed any opinion regarding the appropriateness of the Commission's decision. My testimony addresses the decision the Commission will make in this case.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS TO
INTERROGATORY AND REQUEST FOR PRODUCTION OF DOCUMENTS
OF THE ASSOCIATION OF PRIORITY MAIL USERS, INC.

APMU/UPS-T3-2.

At page 10 of your testimony, lines 1-2, you refer to the DC-9-15 as having 2,808 cubic feet of available capacity, and at lines 7-8, you refer to the capacity of a 727-100, the smaller of the two versions used by the Postal Service, as having "a capacity of at most 4,850 cubic feet." You also mention, at lines 10-11, "Beechcraft 1900s with a capacity per aircraft of 819 cubic feet." Finally, at line 16, you discuss the possibility of "the smaller Metro III, which has a capacity of 625 cubic feet." For each of these four types of aircraft — *i.e.*, for the 727-11, the DC-9-15, the Beechcraft 1900, and the Metro III — please provide all data in the possession of yourself, your firm, or UPS concerning the cost of acquiring and operating these four different types of aircraft.

Answer to APMU/UPS-T3-2.

I am unaware of what data UPS may possess regarding the cost of acquiring and operating the four aircraft types cited in the interrogatory.

I have made inquiries among staff at my firm involved in transportation projects regarding data in their possession that falls within this request. In response they have produced a variety of different reports and computer printouts reflecting different dates, sources, and groupings of aircraft. A copy of this material is being made available as Library Reference UPS-LR-5.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS TO
INTERROGATORY AND REQUEST FOR PRODUCTION OF DOCUMENTS
OF THE ASSOCIATION OF PRIORITY MAIL USERS, INC.

APMU/UPS-T3-3.

At page 8, lines 10-11, of your testimony you state that "[s]maller aircraft are generally less expensive to operate than larger aircraft." Please provide all studies, reports, and other evidence on which you rely to support this statement.

Answer to APMU/UPS-T3-3.

See my response to interrogatories APMU/UPS-T3-2 and USPS/UPS-T3-10(a).

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS TO
INTERROGATORY AND REQUEST FOR PRODUCTION OF DOCUMENTS
OF THE ASSOCIATION OF PRIORITY MAIL USERS, INC.

APMU/UPS-T3-4.

Please provide all data in the possession of yourself, your firm, or UPS responsive to the following questions:

a. (i) How much more does it cost to acquire and operate a Beechcraft 1900, with a capacity of 819 cubic feet, in comparison to a Metro III, with a capacity of 625 cubic feet?

(ii) What is the incremental cost of acquiring and operating a Beechcraft, with a 819 cubic foot capacity, over the cost of acquiring and operating a Metro III; *i.e.*, what is the incremental cost of the additional 194 cubic feet (819 - 625) provided by the Beechcraft 1900 in comparison to the Metro III?

b. (i) How much more does it cost to acquire and operate a DC-9-15, with a capacity of 2,808 cubic feet, in comparison to a Beechcraft 1900, with capacity of 819 cubic feet?

(ii) What is the incremental cost of acquiring and operating a DC-9-15, with 2,808 cubic foot capacity, over the cost of acquiring and operating a Beechcraft 1900, *i.e.*, what is the incremental cost of the additional 1,989 cubic feet (2,808 - 819) provided by the DC-9-15 in comparison to the Beechcraft 1900?

c. (i) How much more does it cost to acquire and operate a 727-100, with a capacity of 4,850 cubic feet, in comparison to a DC-9-15, with capacity of 2,808 cubic feet?

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS TO
INTERROGATORY AND REQUEST FOR PRODUCTION OF DOCUMENTS
OF THE ASSOCIATION OF PRIORITY MAIL USERS, INC.

(ii) What is the incremental cost of acquiring and operating a 727-100, with 4,850 cubic foot capacity, over the cost of acquiring and operating a DC-9-15; *i.e.*, what is the incremental cost of the additional 2,042 cubic feet (4,850 - 2,808) provided by the 727-100 in comparison to the DC-9-15?

Answer to APMU/UPS-T3-4.

(a)-(c) See my response to interrogatory APMU/UPS-T3-2.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS TO
INTERROGATORY AND REQUEST FOR PRODUCTION OF DOCUMENTS
OF THE ASSOCIATION OF PRIORITY MAIL USERS, INC.

APMU/UPS-T3-5.

a. Is it your testimony that the incremental cost of acquiring additional capacity, via use of larger aircraft of the types discussed in your testimony, is greater than the Postal Service's cost when it uses commercial airlines?

b. If your answer is affirmative, please provide all studies, reports or other evidence in the possession of yourself, your firm, or UPS which can be used to make such comparisons and support your testimony.

c. If your answer is affirmative, but not supported by data, please explain the basis for any conclusion that sizing of the current fleet of aircraft on the Eagle and Western Networks is not economic and in the best interests of the Postal Service.

Answer to APMU/UPS-T3-5.

(a) I have not analyzed the relationship between the incremental cost of acquiring additional capacity via use of larger aircraft and the Postal Service's cost when it uses commercial airlines.

(b)-(c) Not applicable.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS TO
INTERROGATORY AND REQUEST FOR PRODUCTION OF DOCUMENTS
OF THE ASSOCIATION OF PRIORITY MAIL USERS, INC.

APMU/UPS-T3-6.

At page 3, lines 13-15, of your testimony, you state that "[t]he costing procedures for these dedicated air networks impute to each pound-mile of mail carried on them a cost equal to what it would have cost to transport the mail through the commercial air system." As a hypothetical, suppose it can be shown that the incremental cost of additional capacity via the use of larger aircraft of the type discussed in your testimony is less than the cost of using commercial airlines for the same amount of capacity.

a. Would you support charging First-Class and Priority Mail the lower incremental cost, as opposed to the imputed costs now charged?

b. Please explain why you would or would not support such an approach.

Answer to APMU/UPS-T3-6.

(a) No.

(b) As I explain on pages 3-11 of my testimony, I believe that the dedicated air networks have been sized to meet the needs of Priority Mail. I do not believe it is the case that Priority Mail is being carried on an incremental basis, and hence I do not think it would be appropriate to assign only incremental costs to Priority Mail.

However, I also believe it would be appropriate to charge to incremental mail a cost equal to what it would cost to transport this mail on the commercial air system, even if this cost were higher than the incremental cost of using larger aircraft.

To explain my reasoning in a way independent of any disagreements over why the dedicated air networks exist, let me define the "base" mail as the mail for which the

dedicated air networks exist, and the "incremental" mail as the mail carried on these networks either as a "filler" on a space available basis, ***or*** because on an incremental basis it may be less expensive to lease slightly larger aircraft than to carry the mail on the commercial air network. To determine what costs should be assigned to the base mail, one must consider the conceptual "experiment" of removing the base mail from the system entirely, and calculating what costs would then disappear from the system. Without the base mail, the dedicated air networks would not exist. All of the incremental mail would have to travel on the commercial air network. Thus, the cost savings from elimination of the base mail would be the difference between the total cost of the dedicated air network, and the cost of moving incremental mail carried on that network on the commercial system instead.

Under the hypothetical situation posed in the interrogatory, the Postal Service as a whole does realize some savings from the expansion of the dedicated air networks to accommodate incremental mail. However, the possibility for those savings exists only because of the existence of the base mail.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

USPS/UPS-T3-1. On page 28, lines 13-15 of your testimony, you state: "I would expect emergency contract and exceptional service movements to contain, on average, a mail mix with higher proportions of Express Mail, Priority Mail, and First Class Mail than do regular movements". Do you have any data to support your expectation? If so, please provide copies of all such data.

Response to USPS/UPS-T3-1.

We requested such data, but it has not been produced. Had the Postal Service produced data on these movements, I would have evaluated that data.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

USPS/UPS-T3-2. Please refer to page 29, line 19 and page 30, lines 1-2, of your testimony. You state: "As noted in the A.T. Kearney Data Quality Study, published TRACS procedures provide inspectors with too much discretion in how they select items for testing and thereby allow operational pressures to bias the sample". Please confirm that you are referring to the sentence on page 86 of the Data Quality Study Summary Report, which states "In particular, the item selection procedures in TRACS appear to involve significant data collector's discretion". If you do not confirm, please provide the specific quotation to which you are referring from the Data Quality Study.

Response to USPS/UPS-T3-2.

Confirmed.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

USPS/UPS-T3-3. Please refer to your discussion of the TRACS sample design on page 35, lines 16-20 of your testimony. Please confirm that by 'mail mix', you are referring to the cubic-foot-miles by mail category. If not confirmed, please provide a precise definition for your usage of the term 'mail mix'.

Response to USPS/UPS-T3-3.

Not confirmed. I am referring to the proportion of cubic-foot-miles by mail category, where the sum of the proportions for all of the mail categories equals 1 or 100%.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

USPS/UPS-T3-4. On page 7, lines 1-3, of your testimony you state:

"...the upgrading of capacity that occurred was the result of a Postal Service decision made in advance of the request for bids, and not in response to low bids received for higher capacity aircraft."

(a) Is it your understanding that the Postal Service did not know that 727s were likely to produce low bids when it solicited service for the WNET? Please explain.

(b) Is it your testimony that the Postal Service did not have the experience to understand the market for cargo aircraft in 1999? Please explain.

Response to USPS/UPS-T3-4.

(a) The point I was making in the quoted section is that the Postal Service structured the bid specifications for WNET in such a way that a prospective contractor could respond only by offering 727s. My basis for this understanding is the response of Postal Service witness Bradley to UPS/USPS-T22-9(b) (Tr. 8/3268):

> The requirements for the Western Network solicitation did not specify the type of aircraft. Rather, I was told that it required containers that were compatible with the "A-2" container. DC-9s are not compatible with this type of container as they apparently carry "A-6" containers.

This decision was made before bids were actually received, and hence before the Postal Service knew with certainty what those bids would be. My testimony does not address the Postal Service's understanding or expectations regarding what bids it may have received in response to alternatively structured bid specifications, or the accuracy of those expectations.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

(b) I have not testified as to the extent of the Postal Service's experience with, or understanding of, the market for cargo aircraft.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

USPS/UPS-T3-5. When discussing the premium associated with the Western network, is it your understanding that the premium is associated with the cost of overnight operations only? Please explain any answer other than an unqualified "yes".

Response to USPS/UPS-T3-5.

Yes. However, that makes no difference to my testimony.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

USPS/UPS-T3-6. On page 7, beginning at line 4, you discuss a document from 1995 provided by witness Pickett.

(a) Is it your understanding that the matters which might have given rise to the "concerns" expressed in that document were unaffected by events between 1995 and 1999? Please explain.

(b) Please state all events from 1995 to 1999 that you understand may have affected the decision to "expand and upgrade the network".

(c) Is it your understanding that the discussions in the document relate to overnight WNET operations alone, daytime WNET operations alone, or both overnight and daytime WNET operations? Please explain.

(d) Please confirm that the document in question refers only to WNET operations and not to Eagle operations. If not confirmed, please explain.

Response to USPS/UPS-T3-6.

(a) The document in question, dated November 24, 1995, states that "The primary purpose of the new WNET is to improve the performance of Priority Mail." In response to UPS/USPS-T19-4(c)-(e) (Tr. 6/2548-54), which asked why the Postal Service added a number of new points to WNET on May 27, 1997, Postal Service witness Pickett states that one of the reasons for this change in the network was "to provide improved service for Priority Mail." His response implies that the concerns expressed in the November, 1995, document continued at least into 1997.

(b) See my response to USPS/UPS-T3-6(a).

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

(c) The document does not specify the types of operations to which it refers.

(d) Confirmed.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

USPS/UPS-T3-7. In one of the documents cited on page 7 of your testimony, the author twice mentions "later departure times" for aircraft in a new WNET. Is it your understanding that later departure times must have occurred solely within the scope of overnight WNET operations? Please explain fully.

Response to USPS/UPS-T3-7.

See my response to USPS/UPS-T3-6(c).

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

USPS/UPS-T3-8. With regard to WNET, you conclude on page 7, "the network was not sized primarily...for Express Mail." You further note that "the Western network as it is presently configured exists to accommodate Priority Mail as much as to accommodate Express Mail."

(a) Are you referring to

(1) the overnight WNET?

(2) the daytime WNET?

(3) both the overnight and daytime WNET?

(b) In your opinion, is an overnight air network needed to "accommodate" a product with an overnight delivery guarantee? Please explain fully.

(c) Is an overnight network needed to "accommodate" a non-guaranteed product with a two-day intercity service commitment? Please explain fully.

Response to USPS/UPS-T3-8.

(a) The overnight WNET. However, that makes no difference to my testimony.

(b) That depends. For some combinations of origins and destinations it would be possible to provide overnight service using surface transportation. If, however, the service were offered between points sufficiently distant, an overnight air network would be needed.

(c) It may be needed if the network is necessary to meet that product's service standard. Over certain distances it would be difficult to provide delivery reliably

and economically using only surface transportation. Whether a daytime air network could meet delivery needs in such situations would depend upon the frequency and departure times of the daytime air service, the priority the product received in dispatch, and both the magnitude and variability of other demands on the available cargo space. The question cannot be answered in general, but only in the context of the specific facts of the situation. An overnight network might not be "needed" if the provider of the service interpreted the absence of a guarantee as an authorization to ignore its published delivery standards.

In any event, whether or not an overnight network is "needed" to meet a two-day product's service commitment, if the network is configured in a certain way in order to provide transportation for a non-guaranteed two day product, that product should share in the cost of the network with any other product whose needs also contributed to the network's configuration.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

USPS/UPS-T3-9. Please refer to the "Executive Summary" document provided by witness Pickett. At the bottom of the first page of that document, it says that the capacity to move First Class and Express Mail "must be retained under the expanded WNET." Is it your testimony that the capacity of the WNET was not sized, as you use the term, for First-Class Mail? Please explain.

Response to USPS/UPS-T3-9.

I noted the statement cited in the text of this interrogatory. I also noted that the figures contained in USPS-T-1, Tables 8 and 9, indicate that First Class Mail constitutes a significant fraction of the volume carried on both the Eagle and the Western networks. However, I thought it likely that these networks would carry some mail on an incremental, as-space-is-available basis, if only because random fluctuations in volumes would be likely at times to make extra space available. Collectively, Priority, Express, and First Class account for a very large majority of the volume carried on the Western network, leaving little mail in this incremental role. For this reason, I thought it unlikely that the network was sized to carry the combination of Priority, Express and First Class.

It is my view that the capacity of WNET was sized for Priority and Express rather than for Priority, Express, and First Class, both for the reason cited above, as well as because of the fact that the former position was conservative in the sense that it represented less of a departure from the Commission's decision in R97-1.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

USPS/UPS-T3-10. On page 8 of your testimony you state that:

"Smaller aircraft are generally less expensive to operate than larger aircraft."

(a) To what specific expenses are you referring?

(b) Are smaller aircraft faster than larger aircraft?

(c) If a smaller aircraft is substantially slower than a larger aircraft, is it your opinion that such a shortcoming is irrelevant in the operation of an overnight network? Please explain.

Response to USPS/UPS-T3-10.

(a) In a general sense, I am referring to all costs of operation and ownership. In a broad sense, the efficiency of an aircraft can be measured by its cost per units of capacity. Smaller aircraft generally have less useable capacity than larger aircraft. If they also have higher costs, operators could substitute larger aircraft for smaller aircraft, simultaneously enjoying increased capacity and reduced cost. For this reason, high cost, low capacity aircraft will tend to be eliminated from the fleet. Among the remaining aircraft, there will be a tendency for cost to increase with size.

Focusing more narrowly on operating expenses, there is also a positive association between size and cost. Larger aircraft tend to burn more fuel. They tend also to have higher crew costs. In passenger operations, for example, crew size increases with aircraft size. Pilot wages also tend to increase with aircraft size. Maintenance costs will tend to be higher simply because there is more to maintain. A

three or four engine aircraft is likely, for example, to incur higher engine maintenance expenses than a two engine aircraft.

Having noted these general tendencies, however, I agree that there may well be circumstances in which specific smaller aircraft may be more costly than larger aircraft. A spike in fuel prices could raise the operating cost of a smaller and less efficient aircraft above those of a larger and more efficient aircraft. Nonetheless, an operator might retain the smaller aircraft in its fleet in anticipation of a later decline in fuel prices. Differences in stage length, crew seniority, or maintenance requirements might create situations in small aircraft block hour costs reported by one operator to exceed the large aircraft costs reported by a different operator, or even by the same operator.

(b) It depends upon the specific aircraft models being compared. In an effort to be responsive, however, I will note that among aircraft types in general commercial use, jet aircraft are generally larger and faster than turboprop aircraft. The expansion of the regional jet fleet is currently narrowing the size gap between the two categories, however.

(c) The relevance of a smaller aircraft's possible slower speed would depend upon the routing over which it is used. Obviously, the longer the flight, the more significant any difference in the speed of the aircraft will be. Given a sufficiently long haul and a sufficiently slow aircraft, it might not be possible for the aircraft to arrive in time for the next day's dispatch. In such a case, the "shortcoming" cited above would be relevant.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

USPS/UPS-T3-11. Please refer to your discussion of the Eagle network beginning on page 9, line 15.

(a) Is it your understanding that Express Mail always constitutes 24 percent of the load on the Eagle network? Please explain.

(b) Is it your understanding that the overnight Eagle network is sized for the average percentage of volume of Express Mail on the network as a whole? Please explain.

(c) If Express Mail constituted 50 percent of the load on an inbound Eagle 727-200 flight 50 percent of the time, would you recommend using a DC9-15? Please explain.

(d) If Express Mail constituted 50 percent of the load on an outbound Eagle 727-200 flight 50 percent of the time, would you recommend using a DC9-15? Please explain.

Response to USPS/UPS-T3-11.

(a) No. I understand that Express Mail constituted 24 percent of the load on the Eagle network in Base Year 1998.

(b) No. As I state in my testimony, I believe that the size of the overnight Eagle network reflects the volume both of Express Mail and of Priority Mail. I am unsure what is meant by "sized for the average percentage of volume." The absolute size of the aircraft has to be sufficient to carry the absolute volume of mail. I do not understand how one would relate the size of the aircraft to a proportion or fraction.

(c) No. Witness Pickett states in his response to UPS/USPS-T19-6 (Tr. 6/2558) that the capacity of a 727-200 is 6,805 cubic feet, and that the capacity of a DC-

9-15 is 2,808 cubic feet. By this measure, a DC-9-15 would not have sufficient capacity to carry the Express Mail load, much less any Priority Mail that might also be on board.

(d) See my response to USPS/UPS-T3-11(c).

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

USPS/UPS-T3-12. Please refer to Table 1, on page 6 of your testimony, entitled "Base Year Eagle and Western Network Volume Percentages by Mail Class". Please confirm that these are pound-mile percentages and not volume (piece) percentages, by mail class. If not confirmed, please provide a detailed explanation of how volume (piece) percentages were obtained.

Response to USPS/UPS-T3-12.

Confirmed.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

USPS/UPS-T3-13. Please refer to Table 4 on page 23 of your testimony, to your workpaper CS14_NXW.XLS, and to the table attached to this interrogatory. Please confirm that the attached table provides an accurate summary of your development of the highway costs shown in Table 4. If you do not confirm, please provide a summary with the same level of detail as in the attachment.

If you do confirm, please attach the attachment to this question to your response.

Response to USPS/UPS-T3-13.

Confirmed.

Attachment to USPS/UPS-T3-13

	INTRASCF HIGHWAY	INTERSCF HIGHWAY	INTRABMC HIGHWAY	INTERBMC HIGHWAY	ALL OTHER HIGHWAY	TOTAL HIGHWAY
FIRST-CLASS MAIL:						
SINGLE-PIECE LETTERS	106,860	110,685	15,970	12,347	2,500	248,361
PRESORT LETTERS	32,159	48,877	9,054	5,179	1,284	96,552
SINGLE-PIECE CARDS	1,450	2,289	331	274	43	4,387
PRESORT CARDS	807	976	165	389	34	2,371
TOTAL FIRST-CLASS	141,276	162,828	25,519	18,188	3,860	351,671
PRIORITY MAIL	101,164	101,240	17,824	7,126	2,245	229,598
EXPRESS MAIL	10,495	5,917	1,184	35	151	17,781
MAILGRAMS	-	-	-	-	-	-
PERIODICALS:					-	
IN-COUNTY	58	-	-	-	1	59
OUTSIDE COUNTY:					-	
REGULAR	44,601	41,761	23,644	39,562	21,294	170,862
NON-PROFIT	10,225	9,518	5,451	9,075	2,186	36,454
CLASSROOM	412	373	220	368	22	1,395
TOTAL PERIODICALS	55,297	51,652	29,315	49,005	23,502	208,771
STANDARD MAIL (A):					-	
SINGLE-PIECE RATE	2,880	6,393	5,118	6,968	1,155	22,514
COMMERCIAL STANDARD:					-	
ENHANCED CARR RTE	20,621	5,395	7,870	8,376	1,236	43,499
REGULAR	57,972	31,760	48,933	60,650	13,673	212,988
TOTAL COMMERCIAL	78,594	37,155	56,803	69,026	14,909	256,487
AGGREGATE NONPROFIT:					-	
NONPROF ENH CARR RTE	1,573	1,338	682	1,355	239	5,187
NONPROFIT	9,588	5,632	9,040	9,401	1,944	35,605
TOTAL NONPROFIT	11,161	6,970	9,723	10,756	2,183	40,792
TOTAL STANDARD (A)	92,634	50,517	71,644	86,749	18,248	319,793
STANDARD MAIL (B):					-	
PARCELS ZONE RATE	71,788	21,056	86,982	62,019	5,406	247,251
BOUND PRINTED MATTER	13,086	3,724	16,574	11,791	5,085	50,260
SPECIAL STANDARD	7,934	2,720	13,830	18,028	2,019	44,531
LIBRARY MAIL	2,698	1,737	2,495	2,909	239	10,078
TOTAL STANDARD (B)	95,506	29,237	119,880	94,746	12,749	352,119
US POSTAL SERVICE	698	981	593	613	53	2,937
FREE MAIL	924	1,939	607	324	40	3,834
INTERNATIONAL MAIL	3,820	5,027	2,424	2,485	273	14,030
TOTAL VOLUME VARIABLE	501,814	409,337	268,989	259,271	61,121	1,500,532

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

USPS/UPS-T3-14. Please refer to page 21, lines 6-9 of your testimony where you state:

> "To determine the fraction of all segments to include in the calculation, I determine the average number of segments per trip. The inverse of this average determines the proportion of segments to include in determining the mail mix responsible for the total amount of capacity purchased."

a) Did you consider any other criteria for determining the mail mix responsible for the total amount of capacity purchased?

b) If the answer to part a) is yes,

i) Please describe the other criteria you considered.

ii) Please explain why you rejected these other analyses.

iii) Please provide all workpapers, programs, and documentation supported the analyses that you rejected in favor of the analysis you ultimately relied on in your testimony.

Response to USPS/UPS-T3-14.

(a) It was always my opinion that the capacity provided was determined in some sense by the maximum load to be carried on a route. I did consider explicitly or implicitly different methods of identifying that maximum load, along with the data available to implement those methods.

(b)(i) I considered methods for identifying the peak load point that focused on links in some top percentile of the capacity utilization distribution.

(ii) Although I believed that an approach based on trucks in some top percentile would give valid results, I rejected this approach because it required the judgmental selection of a specific cutoff point.

(iii) I have no workpapers, programs or documentation reflecting any other approach.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

USPS/UPS-T3-15. Please refer to Table 4 on page 23 of your testimony.

a) Please confirm that the cost figures listed within this table include *all* highway costs, and thus include highway plantload, terminal/van damage, Alaskan highway, area bus and empty equipment – in addition to those costs that accrue to the four major highway contract types (intra-BMC, etc.).

b) Please confirm that the cost figures listed under the "USPS" cost column correspond to costs that are reflected in the Cost Segment 14 B Workpapers and, as such, do *not* reflect the updated distribution keys provided by Witness Xie in her testimony (Tables 1-4, pp. 16-19).

Response to USPS/UPS-T3-15.

(a) Confirmed.

(b) Confirmed.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

USPS/UPS-T3-16. Please refer to your SAS program ZEXP98.Step3.

a. Please confirm that the calculated average amount of empty space for a contract type (found in the SAS data set EMPTYAVG) includes tests for which no mail was unloaded (i.e., UNLOADED=0).

b. Please confirm that in determining a representative mix of mail you did not use zero volume tests.

Response to USPS/UPS-T3-16.

(a) Confirmed.

(b) Confirmed.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

USPS/UPS-T3-17. On page 21 of your testimony, you "assume that each trip has *one segment* (emphasis added) that determines the total capacity provided on that trip, and that this segment is the segment with the highest capacity utilization." Is it possible that *more than one* segment on a particular trip jointly determined the total capacity provided on that trip? Please explain.

Response to USPS/UPS-T3-17.

In most cases, one segment will determine the total capacity provided. In a few cases, it is possible that multiple segments jointly determine the total capacity. This would occur when multiple segments are operated on average at equal capacity utilization.

It is important to note that this possibility does not create a difficulty for the empty space allocation formula I apply, since any of the multiple segments can be the segment sampled by TRACS. If, for example, there are a number of two-segment trips with equal capacity utilization across both segments, then the sampling process will tend to sample, on average, mail from both. Thus, the TRACS process will have sampled all of the mail on segments that determine total capacity provided.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

USPS/UPS-T3-18. Please refer to your response to USPS/UPS-T3-3 and your discussion of the TRACS sample design on page 35, lines 16-20 of your testimony. Consider the following hypothetical example of a sample in two strata. Two stop-days are sampled in each stratum with equal probabilities, and there are two subclasses of mail, Subclass X and Subclass Y. The total number of stop-days in each stratum is the same. The hypothetically observed cubic foot miles and mail mix proportions, by subclass, for these four stop-days are shown in the table below.

	Subclass X CFM	Subclass Y CFM	TOTAL CFM	Subclass X Proportion	Subclass Y Proportion
Stratum A					
Stop-Day 1	1500	150	1650	.909	.091
Stop-Day 2	1000	200	1200	.833	.167
Stratum B					
Stop-Day 3	100	10	110	.909	.091
Stop-Day 4	110	50	160	.688	.312
Strata A+B	2710	410	3120	.869	.131

a) Please confirm that the mail mix, as defined in your response to USPS/UPS-T3-3, for the two stop-days sampled in Stratum A, is more uniform than the mail mix for the two stop-days sampled in stratum B. If not confirmed, please explain fully.

b) Using a combined ratio estimator (as is used in TRACS-Highway estimation), please confirm that the proportion of CFM used by Subclass X is 0.869., and for Subclass Y is 0.131. If not confirmed, please explain fully.

c) Assume the cost per test is $100, regardless of strata, and you can afford to take 50 tests. Please determine and show the derivation of the optimum allocation of tests between strata, for the Subclass X proportion of CFM.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

d) Assume the cost per test is $100, regardless of strata, and you can afford to take 50 tests. Please determine and show the derivation of the optimum allocation of tests between strata, for the Subclass Y proportion of CFM.

e) Assume the cost per test is $100, regardless of strata, and you can afford to take 50 tests. Please determine and show the derivation of the multivariate allocation of tests between strata, giving equal importance to both subclasses proportion of CFM.

f) Please confirm, for subparts c), d), and e) above, that the optimum allocation results in more tests for Stratum A, the stratum with the more uniform mail mix. If not confirmed, please explain fully.

Response to USPS/UPS-T3-18.

(a) Confirmed.

(b) Confirmed.

(c) The general form of the combined ratio estimator is[1]:

$$\hat{R}_{CX} = \frac{\sum_h N_h \bar{X}_h}{\sum_h N_h \bar{T}_h} \qquad (1)$$

where h is an index of strata, N_h is the number of population units (in this case, stop-days) for stratum h, $\bar{X}_h$ is the average CFM per stop-day for class X in stratum h, and $\bar{T}_h$ is average total CFM per stop-day for stratum h.

1. William G. Cochrane, Sampling Techniques, 3rd Edition, John Wiley & Sons, 1977, p. 165.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

In the example there are two strata, each with the same sized population. Under these assumptions, the combined ratio estimator for the class X share of total CFM reduces to:

$$\hat{R}_{CX} = \frac{\overline{X}_A + \overline{X}_B}{\overline{T}_A + \overline{T}_B} \qquad (2)$$

The optimal allocation of sample is that allocation that minimizes the variance of $\hat{R}_{CX}$. To derive this optimum allocation one must first express this variance as a function of the sample sizes. To develop the required variance function I first linearize the equation above by taking a first-order Taylor series expansion. Define the function:

$$g(\overline{X}_A, \overline{X}_B, \overline{T}_A, \overline{T}_B) = \frac{\overline{X}_A + \overline{X}_B}{\overline{T}_A + \overline{T}_B} \qquad (3)$$

Taking a Taylor series expansion then yields:

$$\hat{R}_{CX} \approx g^* + g'_{XA} \cdot (\overline{X}_A - \overline{X}_A^*) + g'_{XB} \cdot (\overline{X}_B - \overline{X}_B^*) + g'_{TA} \cdot (\overline{T}_A - \overline{T}_A^*) + g'_{TB} \cdot (\overline{T}_B - \overline{T}_B^*) \quad (4)$$

where:

$(\overline{X}_A^*, \overline{X}_B^*, \overline{T}_A^*, \overline{T}_B^*)$ is the point around which the expansion is taken,

$$g^* = g(\overline{X}_A, \overline{X}_B, \overline{T}_A, \overline{T}_B)$$

$$g'_{XA} = \frac{\partial g}{\partial \overline{X}_A} = \frac{1}{\overline{T}_A + \overline{T}_B}$$

$$g'_{XB} = \frac{\partial g}{\partial \overline{X}_B} = \frac{1}{\overline{T}_A + \overline{T}_B}$$

$$g'_{TA} = \frac{\partial g}{\partial \overline{T}_A} = -\frac{\overline{X}_A + \overline{X}_B}{(\overline{T}_A + \overline{T}_B)^2}$$

$$g'_{TB} = \frac{\partial g}{\partial \overline{T}_B} = -\frac{\overline{X}_A + \overline{X}_B}{(\overline{T}_A + \overline{T}_B)^2}$$

Rearranging equation (4) yields:

$$\hat{R}_{CX} \approx C + g'_{XA}\overline{X}_A + g'_{XB}\overline{X}_B + g'_{TA}\overline{T}_A + g'_{TB}\overline{T}_B \quad (5)$$

where C is a constant containing no random variables.

Application of the standard formula for the variance of a linear combination of random variables yields:

$$Var(\hat{R}_{CX}) \approx (g'_{XA})^2 Var(\overline{X}_A) + (g'_{XB})^2 Var(\overline{X}_B) + (g'_{TA})^2 Var(\overline{T}_A) + (g'_{TB})^2 Var(\overline{T}_B)$$

$$+ 2g'_{XA}g'_{XB}Cov(\overline{X}_A, \overline{X}_B) + 2g'_{XA}g'_{TA}Cov(\overline{X}_A, \overline{T}_A) + 2g'_{XA}g'_{TB}Cov(\overline{X}_A, \overline{T}_B) \quad (6)$$

$$+ 2g'_{XB}g'_{TA}Cov(\overline{X}_B, \overline{T}_A) + 2g'_{XB}g'_{TB}Cov(\overline{X}_B, \overline{T}_B) + 2g'_{TA}g'_{TB}Cov(\overline{T}_A, \overline{T}_B)$$

Independence of the samples in the two strata implies that:

$$Cov(\overline{X}_A, \overline{X}_B) = Cov(\overline{X}_A, \overline{T}_B) = Cov(\overline{T}_A, \overline{T}_B) = 0 \quad (7)$$

The sample mean variances and covariances are given by:

$$Var(\overline{X}_A) = S_{X_A^2} \cdot \frac{N - n_A}{N n_A}$$

$$Var(\overline{T}_A) = S_{T_A^2} \cdot \frac{N - n_A}{N n_A} \quad (8)$$

$$Cov(\overline{X}_A, \overline{T}_A) = S_{XT_A} \cdot \frac{N - n_A}{N n_A}$$

where N is the population size (the same for both strata) and $S_{X_A^2}, S_{T_A^2}$ and S_{XT_A} are the population variances and covariance. The formulas for stratum B, of course, are analogous.

ANSWER OF UNITED PARCEL SERVICE WITNESS NEELS
TO INTERROGATORY OF THE UNITED STATES POSTAL SERVICE

The question specifies that the sample size for the two strata must sum to 50. Thus:

$$n_B = 50 - n_A \quad (9)$$

Substituting (7), (8) and (9) into (6) yields:

$$Var(\hat{R}_{CX}) \approx ((g'_{XA})^2 S_{X_A^2} + (g'_{TA})^2 S_{T_A^2} + 2g'_{XA}g'_{TA}S_{XT_A})\frac{N-n_A}{Nn_A}$$

$$+((g'_{XB})^2 S_{X_B^2} + (g'_{TB})^2 S_{T_B^2} + 2g'_{XB}g'_{TB}S_{XT_B})\frac{N-(50-n_A)}{N(50-n_A)} \quad (10)$$

or,

$$Var(\hat{R}_{CX}) \approx A_1\frac{N-n_A}{Nn_A} + A_2\frac{N-(50-n_A)}{N(50-n_A)} \quad (11)$$

where:

$$A_1 = (g'_{XA})^2 S_{X_A^2} + (g'_{TA})^2 S_{T_A^2} + 2g'_{XA}g'_{TA}S_{XT_A} \quad (12)$$

$$A_2 = (g'_{XB})^2 S_{X_B^2} + (g'_{TB})^2 S_{T_B^2} + 2g'_{XB}g'_{TB}S_{XT_B} \quad (13)$$

Dropping the finite population correction simplifies (11) further to:

$$Var(\hat{R}_{CX}) \approx \frac{A_1}{n_A} + \frac{A_2}{50-n_A} \quad (14)$$

To determine the optimal allocation of sample I then calculate:

$$\frac{\partial Var(\hat{R}_{CX})}{\partial n_A} = \frac{-A_1}{n_A^2} + \frac{A_2}{(50-n_A)^2} = 0 \quad (15)$$

Rearranging (15) yields a quadratic expression for n_A:

$$(A_1 - A_2)n_A^2 - 100A_1n_A + 2500A_1 = 0 \quad (16)$$

From the information presented in the table I calculate the following quantities:

$\overline{X}_A = 1250$

$\overline{T}_A = 1425$

$\overline{X}_B = 105$

$\overline{T}_B = 135$

$S_{X_A^2} = 125000$

$S_{T_A^2} = 101250$

$S_{X_B^2} = 50$

$S_{T_B^2} = 1250$

$S_{XT_A} = 112500$

$S_{XT_B} = 250$

Inserting these quantities into equation (16) I calculate that the optimal allocation assigns 38 of the 50 samples to stratum A.

(d) Since $\hat{R}_{CY} = 1 - \hat{R}_{CX}$, $Var(\hat{R}_{CY}) = Var(\hat{R}_{CX})$. Hence, the allocation that minimizes one variance will also minimize the other.

(e) Since the sample allocation derived in part c) minimizes the variance of both ratio estimates, that same allocation would be optimal here.

(f) Confirmed.

CHAIRMAN GLEIMAN: Is there any additional designation of written cross examination for this witness?

If not, that brings us to oral cross. Two parties have requested oral cross examination: the Association of Priority Mail Users and the United States Postal Service. Is there any other party that wishes to cross examine?

Mr. Olson, if you're prepared, begin your cross examination.

CROSS EXAMINATION

BY MR. OLSON:

Q Dr. Neels, William Olson representing the Association of Priority Mail Users.

Let me ask you to start with your response to our APMU-2. Do you have that?

A I have it.

Q Okay. We asked you in this question and some other questions about the contention in your testimony that discussed the relative costs of operating planes of various size, correct?

A That's correct.

Q And we asked you specifically whether you had information or UPS had information about the cost of acquiring and operating four different types of aircraft, correct?

A That's correct.

Q And in response to that, you said you made inquiries among your staff, and you have a variety of reports and computer printouts which were made available as Library Reference UPS-LR-5, correct?

A That's correct.

Q Okay. And I thank you or your counsel for actually furnishing us a copy of that. We didn't have to go down and get it. I have looked through it, and I wonder if it is your understanding that an answer to our question is contained in the documents that are in the library reference?

A We're talking about your interrogatory 2 here?

Q Yes.

A Well, these were all the data in possession of myself or my firm to the extent I was able to ascertain that, you know, responsive to your request. So in that sense, yes.

As I say, I don't know what data UPS may have and I didn't have access to those data.

Q Did you ask UPS to provide you with information so that you could provide a better response to this interrogatory?

A I didn't.

Q Okay. And our interrogatory 3 asks about this issue as well, and there you refer to your response to 2 as

well as another interrogatory, and by the reference to 2, you mean the library reference basically, right?

A That's correct.

Q Okay. And then 4, where we asked you to make certain specific comparisons of operating costs, acquisition costs and operating costs for Beechcraft 1900 and Metro 3's and other planes, you again referred to your response to this interrogatory 2, which references the library reference we're discussing, correct?

A That's correct.

Q Okay. Is it your understanding that I could develop from this library reference a response to let's say question 4(a)?

A I don't think that you could based on that information.

Q 4(b) or (c) or (d)?

A I don't think that there's really enough information to allow to you ascertain that.

Q Okay. To your knowledge, is there information in here that allows you to conclude whether, to quote your testimony -- page 8, lines 10 through 11 -- that smaller aircraft are generally less expensive to operate than larger aircraft?

A Information contained in the library reference?

Q Yes.

A The -- I think if you were limited to only the information contained in library reference 5, you would be hard put to come to definitive conclusions. There are -- the sources contained therein, they talk about both passenger operations and cargo operations. When you get down to cargo operations, you're typically talking about small number of operators and relatively small numbers of aircraft, and when I looked at that information, my impression was that it was -- the numbers jumped around a lot. They were highly variable from carrier to carrier and year to year.

I suspect that's because you're talking about really a very small number of aircraft, and the averages that are reported there could be greatly influenced by very specific circumstances that we don't have information on.

Some carriers may have short-haul routes, which would tend to raise costs per hour, as is contained in most of those reports. Some would have longer routes, which would lower costs.

You're talking about pretty old aircraft as a rule, so that if you had a concentration of aircraft that came due for a D check or that was suddenly hit by an airworthiness directive, that could raise maintenance costs for a particular carrier or a particular period of time.

So I think that the numbers that are in there are

pretty variable and there isn't enough information to characterize them to allow you to come to very firm conclusions based only on the information contained in that library reference.

Q I am not sure. I don't want to ask you to give away any client confidences, but generally what's the source of the information?

Most of the pages are unidentified as to source. They give hours and costs and such, but they don't, in most cases, reference the source of the information.

A In, I believe -- most of the ones that don't have sources come from Back Associates, which is a commercial aviation data vendor, and they resell information that's reported by carriers to the FAA.

I believe most of these are Form 41 cost figures, or at least, if not Form 41, one of the sets of cost figures that air carriers report to the FAA, and that are publicly available.

There are also, I think -- and there's maybe an FAA Reporter, too, which is a compilation, I believe, of the same information.

Q And you didn't get additional information to respond to our interrogatory, from what I understand of your response, I think, to 2, but rather pulled this from the files, basically, correct?

A Well, some of the -- this was pulled from the files. At one point earlier in the preparation of my testimony, I had looked into the operating cost data for some of these cargo aircraft types, and I think that was the source of some of the computer printouts that are in that collection.

And looking at it an seeing how unstable the numbers were from carrier to carrier and year to year, I decided that these could not -- I couldn't do anything with them without a whole lot more work trying to interpret what's going on.

So some of those were done in connection -- or some of this information was collected in connection with the preparation of my testimony.

Q You speak in your testimony about the B-727-200; do you not?

A Yes.

Q Okay. Are you familiar with that plane?

A Generally.

Q Okay. Are you familiar with the B-727-100?

A I mean, it's certainly two different variants on the 727 family, yes.

Q And do you know the difference between those two planes, generally, in terms of size?

A The 727-200 is somewhat larger. The 200 is newer

than the older. I don't know --

There are some differences in reported cruise speed for them. I'm not familiar with all of the differences, but certainly the 200 is the larger of the two.

Q Okay. Let me -- do you have the Library Reference with you?

A Not in front of me.

Q I can hand you the one I have, and I'm going to turn to -- these pages are not numbered, but I'm going to turn to the sixth page in the Library Reference, one, two, three, four, five, six.

And it's a sheet that appears sideways, and it has Passenger, Carriers, and Cargo, and I'll ask you if you can look at that.

It's indicated that some of the data is for passenger carriers and some was for cargo, so I guess the bottom part of the chart is for cargo?

A That appears to be correct, yes.

Q And can you tell me what a cost-per-block hour is?

A Block hour is, as I understand this -- you know, the denominator in that calculation is the number of hours the aircraft is flown, and the costs are the variable costs -- well, variable and fixed costs for the aircraft type in that year by a particular carrier.

And so this is cost per hour flown.

Q Okay, could you look to the next to the right-hand column entitled Total Costs, and is it your understanding that that includes both total variable costs and total fixed costs?

A It appears to.

Q And that's in the general category called cost-per-block hour, correct?

A That's correct.

Q And can you compare for us, the cost of operating the B727-200 with the B727-100?

A In the case of the passenger carriers --

Q In terms of cargo. I'm sorry.

A Well, reading from the Library Reference here, the total cost per block hour shown for the B727-200 is $2,927.30, and the cost for a B727-100 is $4,813.50.

Q Okay. Does that indicate that the smaller plane, the 100, is more costly to operate, at least in this data, than the larger 200, for cargo?

A This indicates that in this year, you know, for the particular carriers that are flying them, given, you know, the way in which they were being used, which includes things like the fixed costs will be spread over more hours if the aircraft is flow a lot, and fewer hours if it's flown much less.

And also there is a relationship to distance,

there's a relationship to load carried. So there are a lot of operational factors there.

Taking all of this into account, this says that, on average -- and also taking into account, the sort of high-cost maintenance that would be associated with particular maintenance cycles on particular aircraft or the need to deal with aging aircraft problems, that in 1997, for cargo carriers reporting here, the 727-100 was more expensive per block hour than a 727-200.

Q Okay, and my research, as limited as it was -- and I ask you if this refreshes you recollection that a 727-100 came online in '62; the 727-200 in '67, and that the 200 is 20 feet longer than the 100; does that refresh your recollection at all?

A Well, I can't say that I remember all of those specifics. That's consistent with my general impressions about the two aircraft types.

MR. OLSON: That's all I have, Mr. Chairman.

CHAIRMAN GLEIMAN: Postal Service?

MS. DUCHEK: Thank you.

CROSS EXAMINATION

BY MS. DUCHEK:

Q Hello again, Dr. Neels.

A Good morning.

Q Would you please turn to your response to Postal

Service Interrogatory 4, Subpart (a), please?

[Pause.]

A Yes?

Q There you indicate your belief that the WNET bid specifications were structured so that a prospective contractor could only respond by offering 727s; is that correct?

A That's correct.

Q So is it your testimony that no other types of aircraft could have been offered?

A No. My testimony was -- well, let me clarify.

It was certainly the case that in this context we were talking about, and in most of my testimony we were talking about the difference between DC-9s and 727s.

Now, in the passage of Dr. Bradley's testimony that I cite here, it says that DC-9s are not compatible with A-2 containers, which is a requirement for responding to the bid.

So what I meant to say here was that of the two types, you could respond only with 727s and not with DC-9s. It is my understanding that the A-2 container can be carried by other kinds of aircraft, and I wasn't -- I didn't include them because in context, we were talking about the choice between 727s and DC-9s.

Q Understood. So, aircraft such as possibly a DC-8,

757s, 737s, might have been responsive to the WNET solicitation?

A Some other aircraft could have been, yes.

Q Would you please turn to your response now to Postal Service Interrogatory 6, Subpart (b)?

A Six-B?

Q B, that's correct, B as in boy.

A Yes, I have it.

Q Is it a fair reading of your response to say that it is your belief that there were no other events that may have affected the WNET discussions?

A I think that's probably not a fair reading of it. The interrogatory asked for all events that I understand may have affected the decision to expand and upgrade the network.

And I could have interpreted that to be anything I could have thought of, which could have gone on for quite a long time, speculating about all possible factors that might have affected it, or I could have interpreted it by saying what did I know of that happened?

And the information about the specifics that I had are fairly limited, so I identified that which I knew of, rather than trying to start a long dissertation about the history of the air cargo industry and the Postal Service's operations.

Q Thank you.

While you're on Number 6, would you look at Subpart (c), please?

A I have it.

Q And I think your response there indicates that you cannot tell whether the document that you're referring to is referencing daytime or nighttime operations, correct?

A That's correct.

Q Okay. But is the essence of your testimony that Priority Mail is causally responsible for the overnight operation?

A There is some confusion in the record on sort of daytime versus nighttime operations, and some confusion that I have.

At various times, the WNET has been referred to as an overnight operation. At other times, there are references made to daytime operations.

I note that in the context of the Eagle Network, where there are also discussions of daytime operations, there's an adjustment made by Witness Pickett in the calculation of the network premium to take those daytime costs out.

And there is no comparable adjustment made to the Western Network. And I have been assuming, therefore, that the calculation of the network premium is limited to

overnight operations, but I think the information is a little bit unclear.

It seems to me that there are -- if it is -- my testimony is that the overnight network is based, in part -- you know, is based on the need to meet service commitments, both for Express Mail and Priority Mail.

And that would be my testimony, even if the Western Network were limited to overnight operations.

I think that if the Western Network figures that are reported and attributed to Express Mail actually contain a mixture of overnight and daytime operations, my testimony remains the same, and I would strengthen it a bit, because I think that Express Mail is an overnight product, and you'll have a pattern, typically, where it's collected during the day, moved during the night to its destination, and then delivered the following day.

And in that typical operation, you wouldn't expect to see much Express Mail on daytime flights at all. So, to the extent that there are daytime and nighttime flights in the Western Network, I think that the daytime flights would be even more likely to be carrying Priority Mail than the overnight.

Q Is there a premium for the daytime network?

A My understanding is that -- well, when we talk about the daytime network, are we talking about the daytime

portion of the Eagle Network or are we talking about daytime operations within the Western Network?

Q Both.

A Both. My understanding is certainly in the base year that there is an adjustment made to the Eagle Net costs to take out of the calculation of the network premium the costs associated with daytime operations. I believe those costs are attributed to Priority Mail, and that it is only the cost of the nighttime operations that goes into the calculation of the dedicated network premium that is charged to Express Mail.

In the Western Network, as I understand it, there is no similar adjustment, and so, you know, the costs -- there is no separate breakout of the daytime operations.

Q Okay. Do you know when Priority Mail is available to be dispatched?

A It varies from, I would imagine, from place to place, station to station.

Q Do you know if it tends even with that variance to be nearer to midnight or more in the early morning hours?

A I know that in some of the documents that we were discussing earlier, there are references made to difficulties in picking up much Priority Mail volume because departure times were too early. That suggests to me that it may be arriving later, but I don't have more specific

information.

Q Would you turn now to your response to Postal Service Interrogatory 8, please? And, in particular, I would like you to focus on subparts (b) and (c).

A I have it.

Q I think the response to both subparts indicates your belief that there is a prospect of using surface transportation in certain circumstances, is that correct?

A That's correct.

Q Would surface transportation work between Los Angeles and Seattle in the instance of a product with an overnight delivery guarantee?

A I would think that would be difficult. From Los Angeles to Seattle, you would be talking about a movement of about a thousand miles. I think you would be talking about a minimum 12-15 hours of driving time. I think that would be -- you would have to have quite a driver to make that overnight.

Q And, obviously, that same situation would hold between other city pairs that were 900, 1,000, 1,200 miles distant?

A That's correct.

Q Would you please turn to page 10, lines 15 to 16, of your testimony?

A I have it.

Q You suggest there that a Beechcraft 1900 or Metro 3 airplane could be used for transporting Express Mail on the WNET, is that correct?

A I said that they could certainly -- they could provide the capacity needed to carry the Express Mail.

Q Do you know whether mail traveling on one of those types of planes would be bed-loaded or containerized?

A Well, I think the mail on a 727 200 would be containerized. We were discussing earlier the use of the A-2 containers. I don't know what containers are available for a Beechcraft 1900 or a Metro 3, it may well be bed-loaded in those models.

Q If it were bed-loaded, would the fact that the mail was bed-loaded add substantially to the time and, therefore, the cost of loading the plane at the origin?

A I would expect it would add to the time. Whether it would add to the cost, I don't know. I mean you may be able to load containers on a plane more quickly, but you still have to load the mail into the containers, so I don't know whether the overall costs would be lower.

Q And would you also agree that it would add time to the -- I'm sorry -- time to unload the plane at the destination?

A That would probably be the case.

Q Or at an interim hub?

A If mail were being offloaded at the interim point, yes.

Q You spoke with Mr. Olson about the 727 aircraft, for a Boeing 727, could you generally describe that for me, type of aircraft, number of engines, sort of thing?

A A 727 is a triple engine aircraft, it is a stage two aircraft, so it is using older models of engine with higher fuel burn. It is -- the engines are tail-mounted. I think in a passenger configuration, it carries something in the neighborhood of 150 or 160 passengers.

Mr. Pickett, Witness Pickett indicated that there were 6,000-plus cubic feet of cargo capacity. I understand, too, that there are some weight limitations associated with structural considerations. Some of the cargo modifications to the 727 were such that the FAA has limited the loads on certain portions of it.

Q Do you know what the approximate cruising speed of a Boeing 727 would be?

A A Boeing 727 approximately would be in the neighborhood of 600 miles an hour.

Q And do you know what the approximate range of a Boeing 727 would be?

A Not off the top of my head. Several thousand miles.

Q And would you generally describe for me a Metro 3?

A A Metro 3 is a turbo-prop aircraft. It believe it is a twin engine wing-mounted turbo props. It is obviously much smaller than a 727.

Q Do you know what the approximate cruising speed of a Metro 3 is?

A I don't know exactly, I think it is closer to 300 miles an hour.

Q So if you were traveling approximately 600 miles, it would take about twice as long in a Metro 3 as a 727, correct?

A Approximately, based on the speeds, as I recollect them.

Q Could you describe the Beechcraft 1900 for me, please?

A The Beechcraft 1900, as I recall, also is a two engine turbo-prop, again, smaller than a 727.

Q And do you know what the approximate cruising speed of a Beechcraft 1900 is?

A I don't remember exactly, my recollection is it is in the neighborhood of 300 miles an hour, give or take.

Q And, again, do you know what the approximately range of a Beechcraft 1900 is?

A I am not certain.

Q Would around 800-850 -- 60 miles sound about right?

A I wouldn't be surprised by that number.

Q Would you use a Metro 3 on an overnight network with a delivery guarantee between Phoenix, Arizona and Mather, California, which is the WNET hub?

A I am not sure. Obviously, there are some distances where you wouldn't be able to use the aircraft because of speed and range considerations. You know, you would, for a long enough distance, you would be adding a lot of time to the schedule and cutting into processing windows, and you would be extending the time even more if the range were such that it required a refueling stop. So I think you would tend to use turbo-prop aircraft on shorter legs rather than longer legs. I couldn't say, based on the numbers I have in my head, what I would say about Phoenix to Sacramento.

Q Is it also the case that turbo-prop planes, such as the Metro 3 and the Beechcraft 19, if fully loaded, sometimes have problems getting enough lift to clear mountains?

A I am not familiar with those particular aircraft, so I couldn't say.

Q Would you now turn to your response to Postal Service Interrogatory Number 11, subpart (b)?

A Okay. I have it.

Q I'd like to follow up a little bit on that

response. Would you agree that Express Mail volume carried on the Eagle network exceeds the capacity of a DC-9 on a fairly routine basis?

A I'm not sure. The average percentage of -- the Express Mail percentage of total on the Eagle network is, I believe, 24 percent. Now, I think to answer that, there's a couple of things that would come into play. First is whether you're talking about larger 727 and a smaller DC-9 or a smaller 727 and a larger DC-9.

There's also the issue of how fully loaded the planes are. Twenty-four percent of the total could be 24 percent of the capacity of plane or it could be 12 percent if the planes on average are only 50 percent loaded. That would need to be taken into account. And then there would also be -- you would need to know the variability of the load, that, you know, 24 percent -- whatever volume that 24 represents on average will fluctuate from day to day, and generally you would need to provide enough capacity to be able to handle most of what was likely to be tendered. I think there's too many variables involved in that calculation for me to be able to say that with confidence.

Q Would you look now, Dr. Neels, at your response to APMU interrogatory number 1.

A I have it.

Q And there's some discussion there of Witness

Takis' testimony from Docket Number R97-1. I'm curious whether you read any materials from Docket Number R90-1 concerning the Eagle premium.

A I didn't.

Q Dr. Neels, I would now like you to turn to page 23, table 4 of your testimony.

A I have that.

Q Would it be a fair summary of table 4 to say that all of the changes in highway costs under your empty space reallocation methodology are single digit except for Express Mail?

A That would be fair to say.

Q And Express Mail highway costs decrease by about 55 percent in that table; is that correct?

A That's correct.

Q Can you explain why this should be the case?

A I haven't been able to dig into the details of why this would be so. One possible explanation would be that there were dedicated fleets of trucks carrying Express Mail and that those trucks tended to be lightly loaded because they were carrying only Express Mail. In that case, the procedure I've outlined would tend to miss them because they were lightly loaded.

Q Could another possible explanation be that there are more trips made for Express Mail to achieve service and

that those trips tended to occur on emptier trucks?

A That could be, or that could be another way of stating what I just stated.

Q I would like you now to turn to pages 26 through 28 of your testimony, and that's your entire section that discusses emergency contracts and exceptional service movements with regard to the TRACS sample.

A I have it.

Q Is it fair to say that it's your expectation that emergency contracts and exceptional service movements would contain a mail mix with higher proportions of Express Mail, priority mail, and first class mail than regular contracts?

A Based on the reasoning that I have laid out here on page 28, that would be my expectation. I think that the argument applies most clearly in the case of exceptional movements, which, as I understand it, are movements that are dispatched when some part of the normal network breaks down. So I say there, you know, in such circumstances, there's always -- there's a choice between holding the mail for the next truck to come in or trying to do something to move it right away, and I would expect that those decisions would be tilted in favor of dispatching another movement when that had time-sensitive mail in front of you. I think the same argument applies, although with less force, to emergency contracts because there apparently the time horizon is a bit

longer. But for that reason, yes, I would expect those movements to contain higher proportions of time sensitive mail.

Q And it's also your testimony, is it not, that both categories of those movements represent what you termed departures from business as usual? And I believe the specific citation there is page 27, lines 5 to 6 of your testimony.

A That's correct.

Q And again, on the same page at lines 11 to 13 where you're citing the Postal Service response to UPS interrogatory T-18-9(c), you indicate that the Postal Service's -- you accept the Postal Service's explanation that both categories of movements are used to offset the impact of unexpected mail volumes or operating delays, correct?

A I accept that is part of the explanation for it, certainly. Let me refer back to that.

Q Okay.

A I'm getting so many interrogatories here. Excuse me.

Q Take your time.

MR. McKEEVER: Mr. Chairman, I do have a copy of the Postal Service's response to UPS-USPS-T-18-9. I think that's what Dr. Neels is looking for. If it would expedite

things, I would be happy to provide that.

CHAIRMAN GLEIMAN: It appears as though it might. If you could provide it, we would appreciate that.

THE WITNESS: Thank you.

Okay. Could you repeat your question, please?

BY MS. DUCHEK:

Q Certainly. I asked if at lines 11 to 13 of your testimony, page 27, where you're referring to that response, you're citing the Postal Service's response that both categories of movement are used to offset the impact of unexpected mail volumes or operating delays, and I'm asking if you accept that explanation.

A I do.

Q Okay. Then on page 28 of your testimony, the entire paragraph, lines 14 through 18, you're discussing what you think happens when a normal highway movement fails, and I would like you to make this a little bit more concrete, if you would. Do you need a moment to refer to that explanation?

A It's on lines 14 through 18 on page 28?

Q I'm sorry, 4 to 18 on page 28.

A I have that.

Q Are you referring there to inter-BMC movements, intra-BMC movements, inter-SCF, intra-SCF, or all of the above?

A I think I was referring to all of the above, although I think that the nature of the trade-off would probably vary quite a bit from one to another. Really, the issue of whether you would wait for the next movement to dispatch the mail would depend on how much mail was being delayed, how long a time it was until the next opportunity, next regular opportunity for transportation came up. I would expect that the different movements would present very, very different situations. You may have some where, you know, relatively short period of time, you could expect another truck to come in; in others, it might be a lot more time and there could be a significant delay involved.

So even though the terms of the trade-off might differ, I think still the same issues arise in all.

Q So according to your last explanation, are you saying that there could be situations where an unexpected delay to less time-sensitive mail would still result in an exceptional service movement?

A I wouldn't exclude that possibility.

Q Dr. Neels, do you have any idea, for example, for inter-BMC movements what proportion of those movements have exclusively time-sensitive mail on them?

A For inter-BMC are we talking about highway movements in this context?

Q Yes.

A I would expect for many inter-BMC movements you would be talking about fairly long distances and a lot of that would be dispatched by air, so it may well be that the proportions would be relatively small.

Q What about intra-BMC?

A I don't have specific information. I mean intra-BMC I would expect to be shorter hauls on average than inter-BMC and more likely I would expect under those circumstances you would see more time-sensitive mail traveling on the surface, but I don't have specific numbers.

Q And is it true you also would not have specific numbers for inter-SCF and intra-SCF?

A What -- now these are numbers on what proportion of the mail was time-sensitive?

Q It would be what proportion of those movements had exclusively time-sensitive mail on them.

A Exclusively time-sensitive mail? I don't have specific information on that.

Q And so it would also be the case, would it not, that you would not have information on the proportions of inter-BMC, intra-BMC, inter-SCF, and intra-SCF that had exclusively less sensitive, less time-sensitive mail on them?

A Yes, that is the implication of my last answer. If I don't have one, I don't have the other either.

Q Would you focus on page 28, lines 11 to 13 of your testimony, please?

A I have it.

Q And it is not clear to me how you have apparently made the logical leap from your idea of what might be on exceptional service movements to what appears to be your expectation about the mail mix not only on exceptional service movements but also on emergency contracts.

Could you clarify that?

A As I said, the argument applies most clearly in connection with exceptional service movements. We were looking not too long ago on the Postal Service's response to Interrogatory UPS-T18-9(c) where we asked about emergency contracting and the response indicated that there are similar considerations that come into play both for exceptional and emergency contracts.

I know that the decision horizon for emergency contracts is different, so it is -- again, the tradeoff would be different, but certainly in that response the Postal Service has indicated that similar considerations come into play.

I think it would -- you know, obviously to really -- you know, you would need to get down into specific circumstances in which emergency contracts are used and how much time pressure and for what reason and which mode of

response to Postal Service officials use.

Q I am still on page 28 of your testimony, Dr. Neels, now on lines 8 to 10, and you indicate there that the decision to incur the additional costs of an exceptional service movement, and I think I am quoting, "in any particular instance depends on the mix of mail whose timely delivery is at stake."

Do you see that?

A I see that.

Q Is the mail mix the only thing that that might depend upon?

A No. I wouldn't expect that would be the only thing. I think that just some other factors that would come into play, some we have already talked about here. You would need to think about what the next opportunity was. If you are waiting, how long do you have to wait? What is the likelihood that there will be extra capacity available on that vehicle? Also, the cost of bringing someone in on an exceptional basis would be a consideration as well. This is a ceterus paribus statement here -- all else equal, you would expect to find greater use of exceptional and emergency contracts when you have a lot of time-sensitive mail whose delivery is at stake.

Q You were going through your list of other things that it could also depend upon. Could it also depend upon

things such as the workload needs at the destination facility -- that is, staff waiting to process the mail, space needed for staging the mail?

A It could.

Q One of the other things that was referenced in the Postal Service response to UPS Interrogatory T18-9(c) was that the categories of movements, and again we are referring to exceptional service movements and emergency contracts, are used to offset the impact of unexpected mail volumes or operating delays.

When you talk in your testimony on page 28, line 4 of a normal highway movement failing, is this intended to be an example of an operating delay?

A That would be an example of an operating delay.

Q And what exactly do you mean by a normal highway movement failing? Can you give me an example?

A An example -- okay, we would be talking about a movement that was a part of the normal contracted highway transportation service and we would be talking about a situation perhaps where a truck broke down and didn't arrive at a destination in time or a driver became ill and the contractor wasn't able to find a replacement driver.

Q And would there be other types of operating delays that might also result in an exceptional service movement?

A There could well be. You could have -- I think on

the surface transportation as in the air weather can cause widespread delays sometimes and hold up the movement of trucks, so you could have trucks that are held up because of snowstorms or traffic backups or accidents along the way, I would imagine.

Q Do you have any idea what proportion of the operating delays are due to what you have defined as highway movement failures and what proportion are due to other causes?

A Are we talking -- what delays are we speaking of here? Are we talking about delays within the highway system?

Q Yes, operating delays.

A Well, I would think that in some sense if you have, if a truck doesn't show up in time you could say that by definition it's a breakdown of the normal highway movement, and now I would qualify that by saying that, you know, there's always some variability in arrival times but if you are expecting a truck to show up for a movement and it is not there, and you don't anticipate it being there within an acceptable amount of time, then I would say by definition you have a breakdown of the normal highway movement regardless of the cause.

Q But you don't have any way to have proportions of all these types of delays, what causes -- the proportions by

any particular type of delay?

A Okay, now if -- to define some terms here, let's take out the delays that are within the normal course of business, that fall within what you would call the variability of normal arrival times.

I think I just said outside of that 100 percent would represent service failures and then if I asked of those can I parse them out according to breakdowns, drivers being ill, snowstorms, traffic, or whatever -- strikes, I could not do that.

Q Now one of the other things we have been talking about is the us of exceptional service movements or emergency contracts to offset the impact of unexpected mail volumes, correct?

A That's correct.

Q Do you have any reason to believe that these unexpected volumes would consist predominantly of time sensitive mail?

A I wouldn't expect that they would consist primarily of time-sensitive mail, but I could expect that the reaction to them might depend upon whether or not they were time-sensitive mail.

If you have extra mail ready for dispatch that can't be accommodated on the existing truck, once again you face a decision do you hold it until the next truck or do

you try and do something to move it, and I think again, all else being equal, if the mail that is in excess has a high proportion of time-sensitive mail then I think you would be more likely to dispatch an exceptional or emergency movement to handle it.

That being said too, it is also clear that in a situation where you have an excess of volume, you have got some discretion as to what you load first, so if you had stuff left over, it would be -- I mean if you are doing it the right way to meet service commitment you should load the time-sensitive stuff first and leave the less time-sensitive to worry about later.

Q What if there were a situation where the Postal Service got a new large account, for example, an Internet company that is not very good at logistics which has a truck of parcels needing quick delivery?

A Needing quick delivery? Are you saying that these are like Priority Mail parcels or --

Q No, Parcel Post.

A Parcel Post.

Q It's Christmastime and the Internet company has taken all sort of orders and it is anxious to get its packages out to its customers but it hasn't planned its logistics very well, and it comes to the Postal Service and says help me out.

A And so the Postal Service would certainly in that circumstance try and get all the packages to where they need to be so that people could have them for Christmas.

I think in the circumstance, even though the mail class is not labelled as time-sensitive, you have created a situation in which for other reasons, for nonclassification reasons, the Postal Service regards this as being a time-sensitive delivery.

Q One final question, Dr. Neels, or maybe two final questions.

CHAIRMAN GLEIMAN: We would settle for one final question with two parts. That works better.

[Laughter.]

MS. DUCHEK: Well, I'll say that that's what it is, but you're going to be amazed about how entirely unrelated the two parts of the same question are.

CHAIRMAN GLEIMAN: There can't be two final questions.

[Laughter.]

BY MS. DUCHEK:

Q I want to go back to your discussion of the premiums. Are you basing your understanding of the premiums largely on the treatment in Base Year '98?

A I am basing it largely on the treatment in Base Year '98, though my understanding is that there is a similar

treatment in the test year.

Q Now, one final question, and I think it does have two parts, maybe three.

Did your assumptions concerning emergency contracts and exceptional service movements get translated into UPS's proposed revised cost allocations?

A No, I don't believe that they did. We followed the Postal Service's practice, and applied the same treatment to the costs embodied in emergency and exceptional contracts as were applied to the regular contracts.

MS. DUCHEK: Thank you very much, Dr. Neels. Because of that answer, it really was one final question with only one subpart. Thank you very much.

THE WITNESS: Thank you.

CHAIRMAN GLEIMAN: Thank you, Ms. Duchek. Is there any followup?

[No response.]

CHAIRMAN GLEIMAN: Are there questions from the Bench?

[No response.]

CHAIRMAN GLEIMAN: Would you like some time with your witness to prepare for redirect?

MR. McKEEVER: I would, Mr. Chairman, and five minutes will do.

CHAIRMAN GLEIMAN: All right, thank you.

[Recess.]

CHAIRMAN GLEIMAN: Mr. McKeever?

MR. McKEEVER: Mr. Chairman, we do have several questions.

CHAIRMAN GLEIMAN: If you would please proceed.

REDIRECT EXAMINATION

BY MR. McKEEVER:

Q Dr. Neels, Ms. Duchek asked you about the ability of certain aircraft, in particular, the Metro-3 and the Beechcraft, to make certain movements.

And I think the movements she used were Los Angeles to Seattle and Phoenix to Mather; do you recall that?

A I recall it.

Q Dr. Neels, are there smaller capacity planes, smaller than 727s, for example, other than the Metro-3 and the Beechcraft, which are capable of handling the Express Mail volumes with which we are dealing that have the range to go from Phoenix to Mather Airport near Sacramento?

A There are certainly smaller jet aircraft that have both higher speeds and longer range, and, you know, have the ability to carry a fair amount of cargo.

There are older -- you could conceivably use older model business jets, or now there are a lot of regional jets coming into passenger operation. They could be conceivably

configured for cargo use.

Q Is it possible to use more than one type of plane for movements within the same network?

A It certainly is. There are obviously economies associated with using a single type of aircraft throughout the network, but there are also economies associated with sizing the aircraft to the requirements of the particular movement.

And typically, fleet decisions involve a balance of those two. Certainly, in passenger operations, you see a variety of different aircraft being used to serve passenger movements of varying sizes, and you'd expect to see the same thing -- you could see the same thing, certainly, in a cargo network.

MR. McKEEVER: That's all we have, Mr. Chairman.

CHAIRMAN GLEIMAN: Is there any recross?

[No response.]

CHAIRMAN GLEIMAN: If there's no recross, Dr. Neels, that completes your testimony here today. We appreciate your appearance, your contributions to the record, and we thank you and you are excused.

[Witness Neels excused.]

We're going to break for lunch now and come back at 1:30. Thank you.

[Whereupon, at 12:23 p.m., the hearing was

adjourned for luncheon, to be reconvened this same day at 1:30 p.m.]

AFTERNOON SESSION

[1:31 p.m.]

CHAIRMAN GLEIMAN: Mr. McLaughlin, whenever you're ready.

MR. McLAUGHLIN: Thank you, Mr. Chairman.

MR. COOPER: Mr. Chairman, may I interject with a procedural matter?

CHAIRMAN GLEIMAN: Certainly.

MR. COOPER: This is Rick Cooper for the Postal Service.

Presiding Officer's Ruling 92 issued on July 18th required the Postal Service to prepare and provide a declaration concerning library references 310, 386 and 398. This was supposed to be done before Witness Crowder took the stand; that's why I raise it at this time.

CHAIRMAN GLEIMAN: Good timing.

MR. COOPER: We have prepared the declaration. It states: I, Donald M. Baron, declare under penalty of perjury that I am the sponsor of Postal Service Library References USPS-LR-I-310, 386 and 398. I further declare that these library references were prepared by me or under my direct supervision, and they are true and correct to the best of my knowledge, information and belief.

I will hand this declaration to the reporter and I believe that discharges my duties in this regard.

CHAIRMAN GLEIMAN: If you do hand it to the reporter, I'll direct that that declaration be transcribed into the record and treated as evidence since it's associated with Category 2 library references.

[Declaration of Donald M. Baron was received into evidence and transcribed into the record.]

DECLARATION

I, Donald M. Baron, declare under penalty of perjury that I am the sponsor of Postal Service Library References USPS-LR-I-310, 386 and 398. I further declare that these library references were prepared by me or under my direct supervision, and that they are true and correct to the best of my knowledge, information, and belief.

Donald M. Baron

Date: 7/20/00

MR. COOPER: I had one other procedure matter. I wanted to bring to the listening audience's attention and to the Commission's attention that some of my cross examination will involve library reference 352, which is covered by protective conditions under Ruling 27. If there are any listeners who may wish to be involved in this portion of the cross examination which I believe will be under closed session, they should execute the proper certifications.

CHAIRMAN GLEIMAN: Yes. We will proceed with cross examination once Mr. McLaughlin has a chance to introduce his witnesses and his witness's testimony. To the extent that there is cross examination and deals with sealed material, and as you indicated there is apparently going to be some, we will end our public session, we will turn off our broadcast of the proceedings, we will ask parties who have not signed a certification to leave the room, and we will have a closed session with a separate transcript that will contain materials which are related to a matter that is under seal or under protective conditions.

So that is the manner in which we will proceed this afternoon, and I appreciate your comments up front in giving everyone a heads-up. I can't imagine that anyone out there who is listening is going to rush over to the docket room and sign a certification at this point just so that they can sit in here this afternoon, but maybe it's a slow

day in Washington, I don't know.

Let's try again, Mr. McLaughlin.

MR. McLAUGHLIN: Okay. Mr. Chairman, I'm appearing today on behalf of a number of parties: the Magazine Publishers of America, Advo, Alliance of Nonprofit Mailers, Association for Postal Commerce, Association of American Publishers, Direct Marketing Association, Dow Jones & Company, Mail Order Association of America, McGraw-Hill Companies, National Newspaper Association, Parcel Shippers Association, and Time-Werner.

We call as our witness Antoinette Crowder.

Whereupon,

ANTOINETTE CROWDER,

a witness, was called for examination by counsel on behalf of the Magazine Publishers of America, Advo, Alliance of Nonprofit Mailers, Association for Postal Commerce, Association of American Publishers, Direct Marketing Association, Dow Jones & Company, Mail Order Association of America, McGraw-Hill Companies, National Newspaper Association, Parcel Shippers Association, and Time-Werner, and, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. McLAUGHLIN:

Q Ms. Crowder, I'm handing you two copies of a

document captioned Direct Testimony of Antoinette Crowder on Behalf of Magazine Publishers of America, Inc. as well as the other parties identified earlier in my appearance, and it's captioned MPA-T-5.

Was this testimony prepared by you or under your direction and supervision?

A Yes, it was.

Q Is it true and correct to the best of your knowledge and belief?

A Yes, it is.

Q Do you have any changes?

A No, sir.

Q Mr. Chairman, we would request that this testimony, MPA-T-5, be received into evidence and transcribed into the record.

CHAIRMAN GLEIMAN: Is there an objection?

Yes, sir?

MR. McLAUGHLIN: One other thing.

BY MR. McLAUGHLIN:

Q Ms. Crowder, do you also sponsor two library references associated with this testimony, MPA-LR-6 and MPA-LR-7?

A Yes, I do.

MR. McLAUGHLIN: Mr. Chairman, those are Category 2 library references that are associated with her testimony,

and we would ask that those likewise be received into evidence although not transcribed into the record.

CHAIRMAN GLEIMAN: Is there an objection?

[No response.]

CHAIRMAN GLEIMAN: Hearing none, counsel, if you would please provide two copies of the testimony of this witness to the court reporter, I'll direct that the material be received into evidence and transcribed into the record.

[Direct Testimony of Antoinette Crowder, MPA-T-5, was received in evidence and transcribed in the record.]

MPA-T-5

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

POSTAL RATE AND FEE CHANGES, 2000	:	Docket No. R2000-1

DIRECT TESTIMONY OF

ANTOINETTE CROWDER

ON BEHALF OF

MAGAZINE PUBLISHERS OF AMERICA, INC.
ADVO, INC.
ALLIANCE OF NONPROFIT MAILERS
ASSOCIATION FOR POSTAL COMMERCE
ASSOCIATION OF AMERICAN PUBLISHERS
DIRECT MARKETING ASSOCIATION, INC.
DOW JONES & COMPANY, INC.
MAIL ORDER ASSOCIATION OF AMERICA
THE McGRAW-HILL COMPANIES, INC.
NATIONAL NEWSPAPER ASSOCIATION
PARCEL SHIPPERS ASSOCIATION
AND
TIME WARNER INC.

CONCERNING

CITY DELIVERY CARRIER STREET TIME COSTS

June 1, 2000

TABLE OF CONTENTS

Page

PURPOSE OF TESTIMONY

I am Antoinette Crowder, a senior consultant with TRANSCOMM, Inc. in Falls Church, Virginia. My autobiographical sketch is set forth in Attachment A.

My testimony addresses the costing of city delivery carrier out-of-office (or street) costs. I focus primarily on the testimony of Postal Service witness Lloyd Raymond, USPS-T-13, which presents the results of a work sampling study of delivery carrier street activities conducted as part of the Postal Service's Engineered Standards/Delivery Redesign (ES) project. The Postal Service uses data from this study to develop delivery carrier street time proportions, in place of proportions derived from the Street Time Survey (STS) used in previous rate cases. This study implies a very large change in the time spent by carriers loading mail, and results in a substantial increase in total accrued and attributable load time costs. For 1998, use of the ES time proportions in place of those from the STS results in a $970 million increase in accrued load time, a 52% increase.

My testimony explains why these new out-of-office time proportions are unreliable, greatly overstate load time costs, and are not acceptable for postal ratemaking purposes. I evaluate Mr. Raymond's work sampling study and explain why its data are unrepresentative of the Postal Service system of routes and unreliable for postal ratemaking purposes. I also present the results of my analyses of the ES data, including: (1) ES videotape data collected at the same time as the ES work sampling data, (2) a regression analysis of the ES data, and (3) an assessment of the Postal Service's LR-I-310 regression analysis of that same data. The two regression analyses, based on the ES data, demonstrate a large overstatement of true load time. Finally, I explain why, if the ES data are used to estimate load time, then the matching ES variability model must also be used to develop load time volume variability. Otherwise, there will be a large and irrational overstatement of volume variable load time cost.

I. SUMMARY OF RESULTS AND CONCLUSIONS

During this proceeding, in an effort to fully evaluate their proposals, I have extensively reviewed the data and participated in discovery on USPS witnesses Raymond and Baron. The intent was to acquire enough information to independently (1) assess the processes by which the ES data were collected and used for ratemaking purposes, (2) evaluate their reliability for postal costing purposes, (3) determine whether the large increases in load time costs implied by the ES results were consistent with the Postal Service's explanations of operational changes in city carrier delivery, and (4) assess how well the ES load time results fit with the volume variabilities developed by Witness Baron from other data sources.[1] The following are my conclusions:

(1) The ES data are from a work sampling study conducted as part of the Delivery Redesign/Engineered Standards project. Unfortunately, although they may have been adequate for the purpose they were intended to serve, they are clearly unreliable for ratemaking purposes. The data collectors were given no consistent definitions of carrier activities and, in fact, were deliberately given latitude in interpreting and recording the codes for those observed activities. Many of the study codes are exceedingly vague and generalized and could be interpreted in a number of ways. And, most importantly, the ES observers were unaware of the activity breakpoints critical to ratemaking costing purposes. Consequently, there is no way to determine what the various categories of tallies (i.e., observations of instants of carrier activity) actually represent or whether they are even internally consistent. It is virtually unimaginable, therefore, that the various categories of ES tallies -- collected without any knowledge they would be used for ratemaking purposes -- could be

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1 In this testimony, true load time is as defined in the Load Time Variability (LTV) study.

consistent with the precise definitions of carrier out-of-office activities that are used for ratemaking (i.e., load time, run time, street support time).

(2) My attempts to validate the ES data for purposes of accurately measuring load time have all indicated that those data are unreliable and considerably overstate the amount of true load time. From the ES data, I have developed a regression model of route-level ES load time vs. possible deliveries and delivery mode, which indicates that the ES load time estimate substantially overstates true load time (as defined for ratemaking purposes). My results are consistent with the results of a separate route-level ES model (of load time vs. volumes and possible deliveries) provided by the Postal Service in this case. Both models indicate overstatement of true load time.

(3) I have reviewed a sample of ES videotapes of carrier activities on residential park & loop routes, recorded on the same day the ES observers were collecting their work sampling data. This analysis shows that the observation codes recorded by the ES data collectors and allocated by witness Raymond to the load time category are not consistent with the load time definition used for ratemaking, and generally measure a time that is considerably greater than true load time.

(4) The sample of routes from which the ES data were collected is exceptionally small, considering the diversity of routes in the postal system. Further, the sample was not randomly selected. Indeed, it is biased toward large metropolitan areas and areas with relatively higher delivery point growth rates. Compared to the USPS system of letter carrier routes, the weighted sample routes over-represent residential curbline routes and high-load time centralized delivery points on residential park & loop routes. There is a clear bias toward geographic areas and deliveries with higher-than-system-average load time characteristics.

(5) My analysis of the Postal Service's explanations of operational changes in the delivery system since 1988 shows that they do not explain the magnitude of the large increase in load time implied by the ES data, and the corresponding large

decrease in run time. Although there have been changes, the large differences between the STS and ES load and run times are far more the result of (i) the biased ES sample, and (ii) the manner in which the ES data collectors recorded their observations and Mr. Raymond allocated them among load, run, and support categories.

(6) From the above, it is clear that the ES estimates of load, run and support time are not consistent with the definitions used for ratemaking. Because they do not match the variabilities derived from models that are consistent with those ratemaking definitions, the resulting volume variable costs are meaningless. Accordingly, witness Baron (USPS-T-12) was wrong in applying variabilities from the Load Time Variability (LTV) models, which measure the true amount of load time, to the greatly overstated load time developed from the ES data. His approach causes an extreme overstatement of variable load time and inaccuracy in all the variable out-of-office costs.

On the other hand, when the variability from the Postal Service's LR I-310 variability model (derived from the ES data) is applied to the ES estimate of total load time, the estimate of variable load costs is substantially less than that developed by witness Baron. That, of course, is because the ES load time variability is developed from a model that recognizes that a portion of the ES load time is not true load time. The ES estimate of load time and the matching ES variability produce a far more reasonable estimate of variable load time than that now offered by witness Baron.

(7) For both the stop-level LTV load time model and the route-level ES load time model, the Postal Service proposes to attribute the load time effect from the possible deliveries variables included in the models. This reflects a basic misunderstanding as to how load time varies with deliveries coverage (i.e., proportion of deliveries that receive volume). In each model, the volume variables measure the full extent of the effect of volume on load time. The effect of possible deliveries on load time is not caused by volume and should not be attributed to volume.

(8) Finally, because of the lateness of some data, I have not had time to review them, much less incorporate them into my analyses. A substantial amount of information that should have been presented at the time the Postal Service filed this case was not made available until much later. This includes information on route-days omitted from the LR I-163 data base used by witness Baron to develop the out-of-office time proportions, correct and full information on the ES observers, electronic versions of volume data, and certain recently received interrogatory responses from witness Raymond. Additionally, I have had a very short time to review the videotapes and associated written data that the Postal Service recently provided. Nevertheless, I have seen sufficient information to know, without any doubt, that the ES data are not appropriate for the use to which the Postal Service has put them.

Based on the above evaluation, I recommend that the Commission reject the use of the ES data for ratemaking purposes. However, if it decides to use these data to develop out-of-office time proportions, it should also use the ES model variability that is consistent with them. Otherwise, variable load time costs will be severely overstated.

The rest of my testimony is organized in five sections. Section II describes why the ES work sampling data are unreliable for purposes of rate making. Section III describes the biased ES sample design. Section IV addresses the Postal Service's explanations for the large difference between the STS and ES load and run time estimates. Section V explains the analyses that demonstrate that the ES work sampling data overstate load time and, accordingly, that the ES measure of load time is completely mis-matched with the load variability derived from the LTV models. Section VI explains why the effect of possible deliveries on either stop-level or route-level load time should not be considered volume-variable. An Appendix describes my ES load time model. Workpapers and a description of the videotape analysis are being filed as library references.

II. THE ES WORK SAMPLING STUDY IS NOT RELIABLE FOR COSTING PURPOSES

Mr. Raymond's work sampling study was only one part of the large Engineered Standards/Delivery Redesign project that had multiple but interrelated objectives, including development of at least two sets of time standards for delivery carrier activities, identification of preferred work methods, development of a route adjustment and workload management system, and validation of the workload management system. *Costing was not an objective*. The data collection portion of this project was likewise large, multi-faceted and complex, requiring data collectors to employ a number of simultaneous data collection techniques (time studies, videotaping, work sampling, and other tasks) to gather information. This total effort is what Mr. Raymond and the Postal Service call the Engineered Standards (ES) project.[2]

Mr. Raymond's work sampling study was not designed for ratemaking costing purposes and was conducted prior to any thought that it be used in ratemaking.[3] While this, standing alone, does not automatically invalidate use of the data for costing, it does raise a warning flag. As MPA witness Keith Hay explains (MPA-T-4), the purpose, nature, design, and execution of a study can have a huge impact on its usefulness and reliability for a different purpose other that for which it was originally designed.

A costing study should be designed to focus directly and clearly on the costing question at issue. In particular, a study of carrier costs:

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2 There has been some confusion in the use of the term "ES data" because the ES project collected more work sampling data than was presented by Mr. Raymond and provided to witness Baron for developing carrier street costs. In my testimony, I generally use the term "ES data" to refer to that portion of the work sampling data that was provided to Mr. Baron.

3 MPA/USPS-T13-1, 2, Tr. 7607-08; OCA/USPS-T13-8, Tr. 7816.

(1) Should be carefully designed to ensure a random sampling of routes that are representative of the universe of carrier routes.

(2) Should have clear systematic instruction and training of data collectors focused on the precise cost-related demarcations of the specific carrier activities to be observed, to ensure uniformity of interpretation and application by all data collectors.

(3) Should have clearly defined terms to minimize confusion or subjective interpretations by data collectors.

(4) Should employ a relatively simple, focused data collection procedure, without a lot of other data collection responsibilities to distract or interfere with the central costing objective.

By these standards, as I explain below, the ES work sampling study is unreliable for costing purposes, even though it may have been appropriate for the different purposes for which it was designed.

A. Factors That Adversely Affect The Reliability Of The Work Sample Tallies For Costing Purposes

1. The Work Sampling Study Was Not A Central Focus Of The ES Project

A work sampling project design should be geared toward the purpose it is to serve. In the case of Mr. Raymond's work sampling, its purpose was to provide ancillary support for the main focus of the Engineered Standards project: to develop engineered time standards and work methods for management. The primary tools employed to develop time standards were the time studies, a predetermined time system, and videotape analyses, not work sampling. Mr. Raymond explained that the work sampling data were intended to provide the following:[4]

- A measure of the portion of the carrier's day during which delays were experienced which could then be used as an input in developing the time standards,

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4 USPS-T-13 at 5; ADVO/USPS-T13-1, Tr. 7368; NAA/USPS-T13-3, 7776-81; cross-examination at Tr. 8050-53.

- An estimate of the proportion of delivery receptacles by type (e.g., a #1 box vs. a one-handed slot), which could then be used to develop overall estimates of delivery workload from the standards, and

- A general indication of where carriers were spending their time, so that the Project could prioritize parts of the carrier's work day that might yield the largest productivity gains, if improvements in work methods were made.

The only information from the work sampling that was needed as a direct input in developing the time standards was a "delay factor." Tr. 8052-53. This focus on identifying a delay factor is evident in the design and layout of the barcode sheets. Nearly one-third of the barcodes for outside activities and details (21 of 66 barcodes) are related to "delay" activities. USPS-T-13, Appendix C at 23.

The other aspect of the work sampling data that Raymond was interested in was receptacle types, because the time standards vary by receptacle type and frequency of receptacle types was important for his route adjusted workload management system. Because information on receptacle types was not captured in the time studies, the work sampling was the only source for this information. Tr. 8050-51. This focus also is evident from the barcode layout. More than one-fourth of the barcodes for outside activities and details (17 of 66) are for receptacle type. The importance of receptacle type is also seen in the "details" arrow on the barcode sheet, which directs the entering of a receptacle type. See also Tr. 7581. Moreover, data collectors recorded receptacle types even when there was no delivery activity, for example, when the carrier was walking or traveling between deliveries. Data collectors were to record the receptacle type that was "near" the carrier.[5]

Indeed, it appears that the time studies, conducted at the same time as the work sampling, were a more important part of the project. The time studies were

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[5] MPA/USPS-T13-80; Tr. 7701. This focus on collecting receptacle-type information may have caused some data collectors to pay more attention to the kind of receptacle than to the precise location of the carrier when nearing the delivery point.

originally intended to be used to develop engineered time standards (although Mr. Raymond ultimately used a "predetermined" system for time standards). The greater importance placed on the time studies is evident from many factors. In determining the sample size for his project, Mr. Raymond focused on the number of time studies needed, rather than on the size of the work sampling. OCA/USPS-T13-1; ADVO/USPS-T13-23(b); Tr. 7797-801, 7407. The training of data collectors also apparently focused on the time studies. They were given specific instruction on such things as how to operate the equipment and how to identify different receptacle types, but were given no written instructions on how to identify the locations and activities in the work sampling. Moreover, time studies interrupted and took precedence over the work sampling, requiring data collectors to remember and later record intervening observations.

2. The Heavy Workload Of The Data Collectors

The ambitious multiple-method scope of the ES data collection effort was probably necessary for Mr. Raymond's purposes. However, even with two-person teams, the data collectors were required to perform numerous, often overlapping tasks for long hours. The team arrived up to an hour before the beginning of the route to collect quantitative information concerning the route, such as daily volumes and types of deliveries. They then followed the carrier throughout the day collecting data on carrier activities and other carrier/route conditions until the carrier's day was completed, following the carrier throughout the day. The team had numerous overlapping and sometimes simultaneous responsibilities: the time studies, the work sampling data collection, the videotaping of carrier activities, and driving/walking behind the carrier. Clearly, there was a lot of work to perform:

> "Every six minutes, when the scanner beep went off, they typically performed the work [activity] sampling. They would take time studies of the various outside activities counting the appropriate items such as: number of paces walked, number of delivery points served, number of doors and gates, number of weighted or un-weighted bends made, number of trays/tubs handled, distance in tenths of miles, final odometer reading. The team also had a daily comments log for making notes about any special events, and corrections to scans. They would also videotape outside activities for approximately 1/2 hour. The video would be shot at various times throughout the street time." ADVO/USPS-T13-11, Tr. 7384-85.

In addition, the data collectors had to refer to a Postal Service Form 3999X (listing addresses, delivery points, and other important route information) and make manual notes and corrections on the form. After the carrier had finished for the day, the data collectors had to review their data, print out reports, consult their daily comments log, mark up their records, and arrange for their data to be sent to the central ES data processing location. *Id.* The typical workday for a data collector was ten to twelve hours, and some days were much longer.[6]

This heavy workload over long hours, with many responsibilities beyond just the work sampling, raises questions about the reliability of the observations for costing purposes. This is a lesser concern for some of the other data collection activities such as the time studies, videotaping, and counting of various items which

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6 ADVO/USPS-T13-47, Tr. 7487, and cross-examination at Tr. 8046-47. On a given day, as many as 45 time study observations could have been completed, each requiring between ten and 22 scans and manual counts of various observed items related to the activity being timed. The first half of a time study required 5 scans and, after the counts were made, the second half of a time study required between 5 and 17 additional event quantities scanned. As many as 100 or more work sample tallies could occur during the day, at 6-minute intervals, each requiring 6 barcode scans. Additional scans were made to record weather conditions, satchel weight, and other items. Typically at the end of the day, there could be up to 53 additional study quantities scanned. ADVO/USPS-T13-34.

did not require much interpretation and judgment, but it is a real concern with respect to the work sampling.[7]

3. The Limited Instruction And Training Of Data Collectors

The most troubling aspect of the instruction and training of data collectors is the absence of any written instructions or definitions of terms about how to interpret and record the work sampling observations.

Phase 1 data collectors were given orientation classes but no written instructional material. Tr. 7411. Formal instruction appeared to concentrate on time study requirements, equipment familiarity (i.e., the video camera and the scanner), identification of receptacle types and postal forms, and role-playing situations. Id. The many subsequent data collectors were trained almost entirely on-the-job. Apparently, no individual acted as the common instructor for all new data collectors. With no written instructions, this created the clear potential for differing instructions and interpretations depending on the on-the-job training matchups.

Mr. Raymond, in fact, specifically sought out data collectors who had no prior knowledge of postal operations and intentionally simplified their training so they would "simply record what was happening":

> "We determined that the best means to collect data would be one that was easy for the data collector to learn. In this way, the data collectors could stay focused on the activities they were observing, rather than on how to record them. The pool of data collectors was selected from a non-Postal environment so as to minimize the

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[7] Unlike the work sampling, the time studies were designed in a way to minimize the need for definitions of terms and subjective judgments about how to categorize and record observations. A good example is the time study for "Basic Delivery," which tracked a carrier during a segment of deliveries. The data collector entered the start and stop times for the study by simply scanning at a time of his choosing, and then count the number of occurrences of items or activities (such as the number of deliveries made, paces walked, and parcels delivered) during that time period. The work sampling, by contrast, required the data collector to identify, at the instant a beep sounded, where the carrier was and what he was doing, and then to properly record the observation from among numerous ill-defined barcode choices.

> potential role of preconceptions. It was our goal for the observers to simply record what was happening, not what 'should' happen. . . ."
>
> "The teams would be better off comprised of knowledgeable non-postal people in order to record what is/was and not what may look good, and to freshly evaluate all aspects of the city carrier operation. People from a wide variety of occupations, with diverse experience levels, and different educational backgrounds using technology-supported processes would contribute the most." . . . .
>
> "I made the decision that the way to document 'What happens in the day of a life of a carrier' would be best accomplished by on the job training." NAA/USPS-T13-3

Accordingly, although the data collectors were instructed on how to use the equipment and interact with the public and the observed carriers, they were given no systematic oral or written instruction on what the work sample barcodes meant, and appeared to be deliberately left to their own devices to determine and categorize (via the barcode scans) what they were observing.[8] As Mr. Raymond stated:

> "Once the observers were made familiar with the materials they would use, the observers were simply instructed to record what they saw." ADVO/USPS- T13-82, Tr. 7560.

Again, for Mr. Raymond's purposes, this may have been adequate. But for costing purposes, it is imperative to have clear and precise definitions of terms that equate to the costing distinctions intended to be measured. Simply instructing the data collectors to "record what they saw" is not adequate unless they are also given precise definitions telling them *how* to interpret and record what they saw. For familiar, well-defined activities such as counting the number of paces the carrier walked during a time study, "recording what they saw" may not be a problem, since even someone unfamiliar with postal operations or costing concepts can make those objective determinations. That is not the case with the interpretation of more specialized terms such as "point of delivery," which may mean different things to

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8 MPA/USPS-T13-61, 62, 64, 67, 68, 70, 71 and 79; Tr. 7677-78, 7680, 7683-85, 7687-88, 7700.

different people, particularly if they are unfamiliar with postal operations or the precise definitions used for postal costing purposes.

4. Turnover of Data Collectors

Although the total is not entirely clear, at least 52 data collectors were employed at different stages over the course of the project. Tr. 7551. Eight were used in Phase 1, although two left near the end of that phase. During Phase 2, at least three groups of newly-hired data collectors were hired and given varied training. One group included three of the original Phase 1 data collectors plus six new hires. The second group consisted of 18 new data collectors. Of these 24 new data collectors hired near the beginning of Phase 2, 16 left the project or accepted different responsibilities. ADVO/USPS-T13-28, Tr. 7448. Approximately 20 additional data collectors were brought in to fill vacancies as they occurred. Over the course of Phase 2, a total of 47 data collectors were employed at one time or another to fill 24 positions.

Obviously, there was difficulty retaining data collectors. Whatever the reasons, this high turnover and the recurring need to train new data collectors on-the-job raises concerns about the reliability and consistency of data tallies. This concern is particularly pronounced because of the lack of written instructions and definitions of terms, the reliance on on-the-job training of the newly-hired data collectors by other data collectors, and the lack of a centralized system of instruction.

5. The Lack Of Precise Definitions Of Terms

A survey being conducted for costing purposes should start with clearly defined terms that correspond to the costing categories to be measured. Moreover, the meanings of key terms should be conveyed to the data collectors precisely and consistently. This is not something that should be left up to the data collector's interpretations, with the vague instruction to just "record what you see."

For the purpose of determining precise costing measures, the work sampling project falls short on both scores. Many of the key barcode terms are vague and overlapping, and subject to differing interpretations. The lack of precision in the barcode terms might have been less of a concern had the data collectors been given precise, consistent written definitions and centralized instruction on how to interpret and apply the terms. But no written definitions or instructions were given to the data collectors, and most of the training was decentralized on-the-job training by other data collectors. This lack of precision in the barcode terms heightens the probability of misrecording of carrier activities.

A good example is the critical term "point of delivery," which accounted for the vast majority of tallies Mr. Raymond assigned to load. To the average person with no familiarity with carrier operations or the costing definitions of "load time," this term can mean many different things. Is the carrier at the "point of delivery" when he enters a building? When he is standing by his vehicle near a centralized or NDCBU receptacle? When he is approaching the doorstep in preparation for delivery? If the data collector is not given precise definitions and instructions on what "point of delivery" means, the resulting tallies can represent a hodge-podge of activities extending beyond the precise costing definition of load time.

This confusion over "point of delivery" is evident in tallies Mr. Raymond assigned to load that show the carrier's activity as walking or traveling between deliveries while supposedly at the "point of delivery."[9] These demonstrate that some data collectors interpreted point of delivery broadly to include instances where the

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[9] Another example are point of delivery tallies for dismount deliveries with an LLV (vehicle) activity code, which he assigned to load, explaining that the carrier "is delivering to a Dismount type delivery, to a residential outside delivery point *from the LLV*." (emphasis added). Aside from the impossibility of being at a dismount delivery point when inside the vehicle, this suggests that, for some ES data collectors, the delivery point began at the vehicle parking point.

carrier was at another location or was approaching but not physically at the mail receptacle.[10]

Other location terms in the survey are likewise imprecise. Mr. Raymond's post-survey definition of the location "on route" is when the "carrier is between the 1st delivery point and the last delivery and has not deviated from his route *and is not at another listed location*." MPA/USPS-T13-39, Tr. 7654 (emphasis added). By this definition, "on route" means that the carrier is *not* at the "point of delivery," yet he assigned a number of "on route" tallies to load.[11] Likewise, the location "vehicle" overlaps with other locations, such as "point of delivery" on curbline deliveries. Moreover, the "vehicle" location was apparently interpreted to apply when the carrier was only near the vehicle, and not necessarily physically in the vehicle. This is similar to the interpretation of when to enter receptacle types, which Mr. Raymond stated was to represent the receptacle type "near" the carrier.

A similar problem occurs with the activity "delivery/collect." Mr. Raymond's survey identifies two types of activities that are purportedly associated with loading mail: "fingering at delivery" and "delivery/collect." The first term, fingering at delivery, conveys a specific activity which even a non-postal-expert can comprehend -- the activity of handling and sorting the mail in preparation for inserting into the mailbox. But the second term, delivery/collect, is a generic term which, by itself, does not convey a specific activity.

The problem with the generic "delivery/collect" term is that, like "point of delivery," it could be construed to cover activities going beyond the technical Load

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[10] These ambiguities about "point of delivery" might have been resolved by a more precise term that is less subject to interpretation, such as "at the mail receptacle" which conveys a specific physical location.

[11] Some of these tallies list the Activity as walking, while others list the Activity as Delivery/Collection but indicate that the carrier was walking at the time -- neither of which is consistent with the STS/LTV concept of load.

function. If one asked a non-expert what a carrier is doing as he approaches the doorstep of a house, the answer might well be that he is "delivering the mail." After all, that is the carrier's job -- delivering and collecting mail.

A related problem with this generic term is that for load operations which occur quickly (e.g., only a few seconds), data collectors probably had difficulty discerning whether a "beep" that occurred around that time actually coincided with the quick load, or shortly before or after that load, which should have been access time.[12] A busy data collector, even though he may be instructed to observe what is occurring the instant the six-minute beep sounds, may not have been quite so focused on such a difficult activity/location breakpoint -- particularly since they were not made aware of the critical need for precision due to the then-unforeseen use of this data for postal costing purposes. The absence of precise definitions and the other demands on the data collectors' time increased the likelihood that the observations recorded by the data collectors and converted to load tallies by Raymond were not observations of true load time.[13] "Delivery/Collect" would be the convenient entry, particularly since the data collectors were not aware at the time of the critical importance of precision for costing purposes.[14]

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[12] My review of the ES videotapes indicates that, in many single delivery situations, the physical acts of fingering mail, inserting it into a mail receptacle, and/or removing collection mail from a mail receptacle can often occur so quickly that one has to be exceptionally watchful and precise in order to determine when it begins and ends vis-a-vis run time.

[13] Based on my limited review of the ES videotapes, there do appear to be examples where the data collectors recorded activities that were not true load time activities with codes that Mr. Raymond ultimately assigned to load time.

[14] A better, more precise term for costing purposes might have been something like "depositing/collecting mail," which conveys a specific activity of placing mail into or retrieving mail from a receptacle.

B. The LR-I-163 Data -- The Black Box

I have spent much time reviewing the general categories of work sampling tallies within Mr. Raymond's LR-I-163 ES data set. My first activities were to review a distribution of tallies by tally type, comparable to his LR-I-281 distribution of tally types, and attempt to identify the types of carrier activities described by those tallies to see if they matched the STS categories to which he had assigned them. After an extensive review of these data, but still having a number of outstanding questions about them, I have concluded the following:

(1) The ES code definitions were broad, imprecise, and contained no specified breakpoints (i.e., between driving a vehicle, parking it, getting out and moving around it, moving to or away from it; between accessing a mail receptacle and loading it; between actually loading a vehicle and moving containers to it). The data collectors had no consistent guidelines as to how to apply the codes. The potential for misinterpretation expands when one recognizes that two of the three codes (the Activity and Activity Detail codes) were often linked.[15] It thus seems virtually impossible that all the data collectors could have applied the codes consistently, or that anyone could identify from the ES tallies what the carrier was actually doing when he was observed.

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[15] An example is the focus on collecting information on receptacle types (needed for the important time standards and route restructuring aspects of the ES project) and the linkage in the survey between the receptacle type activity detail codes and the delivery/collect activity code. Data collectors were instructed to enter receptacle types in conjunction with delivery/collect activity tallies. Yet a receptacle tally does not necessarily mean that the carrier was delivering mail or was even at the point of delivery -- only that the carrier was "near" the receptacle. In addition to the potential that this predisposed data collectors to capture receptacle information by overusing the delivery/collect-receptacle type tally combination, it also inhibited the entry of other activity detail codes, such as walking codes, that might have more accurately described what the carrier was doing at that instant.

(2) Mr. Raymond cannot possibly explain precisely what carrier activities were being observed when each tally was taken because the codes are too general and their application too inconsistent. However, his judgmental interpretation of the mix of codes in each tally, and his subsequent assignment to an STS category, depend critically upon consistently applied definitions among all his ES data collectors and himself. Otherwise, how can he really know what was occurring when the tally was taken? In his response to POIR No. 8, he makes a number of assumptions about what he thinks the codes mean and what he thinks the STS definitions mean. For example, he assumes "delivery point" is defined in precisely the same way for both. Thus, all Point of Delivery tallies are allocated to the STS Load category. This appears to be the only way he could claim that he experienced no problems in allocating the ES data to the STS categories. MPA/USPS-T13-52, Tr. 7667. In some cases, however, he admitted that he needed to reference the data collector comments log or the USPS Form 3999X. But, in most cases, I suspect even referring back to those items cannot be sufficient.

(3) Many of the most numerous tally groupings have the superficial appearance of being indisputable and precise, "neatly falling" into STS categories without any difficulty. This appearance is deceptive. The key codes to look at are the Location and Activity codes, and there is little variation here. With the exception of the Personal (PBL) tallies, all the tallies described in the first 3-1/2 pages of Mr. Raymond's POIR No. 8 Attachment A are combinations and permutations of three vague and interchangeable Location codes (Point of Delivery, Vehicle, On Route) and five Activity codes (Delivery/Collection, Finger @ Delivery, Travel Between Delivery, Travel Between Delivery with Sort, and Setup), which could have been interpreted by the data collectors in any number of inconsistent ways.

(4) Despite all the effort I have made to understand these data, neither I nor any other analyst could possibly identify with sufficient precision (to satisfy the

required STS/FAT/CAT/LTV requirements) what carrier activities are represented by the various tally groupings. And, because of the potential diversity of interpretations among the various ES data collectors, the general nature of the codes themselves, and the brief STS definitions given to Mr. Raymond, I believe such precise interpretation would be difficult even for someone who had participated in his study.

III. THE ES SAMPLE DESIGN IS NOT REPRESENTATIVE OF THE SYSTEM OF CARRIER ROUTES AND IS BIASED TOWARD HIGHER-LOAD ROUTES

In a properly structured costing study, the sample of zip codes and routes selected would have been chosen entirely randomly and with the assurance that all route types were adequately represented (i.e., with, perhaps, some sample stratification to ensure adequate sampling of rarer route types and a representative mix of large and small zip codes). Mr. Raymond's sample is not representative of the entire system of USPS letter routes and, in fact, is biased toward routes with a larger proportion of in-office and load time.

A. The Non-Random Sample Design And Clustering Of Sites

The ES database (LR-I-163) from which the Postal Service has developed time proportions for its entire system of city delivery carrier routes was derived from an activity sampling study of only 340 routes, most of which were clearly not selected on a random basis. The approach was to choose cities from which a variable number of routes would be sampled, apparently based on time and budget constraints. Other than ensuring that cities were chosen in each of the Postal Service's eleven regions, there was no apparent sample design for the work sampling project. As the project progressed, cities and routes appear to have been sampled on a relatively ad hoc basis. Although this may be appropriate for industrial engineering projects, it does not meet ratemaking costing standards, where the objective of the cost study is specified first and the sample is designed in a representative manner to meet that objective.[16]

For the LR-I-163 set of routes, 53 cities were sampled. Most of the cities were selected by Postal Service regional management, with Headquarters' direction that the selected cities have relatively high DPS volumes, at least three delivery units (with

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[16] See, for example, the standards applied to selected Postal Service data collection systems in the A.T. Kearney Data Quality Study, Technical Report #2: "Statistical Analysis of Data Quality Issues," April 16, 1999.

Delivery Unit Computers), and a mix of route types (mounted, park & loop, and business and residential; no rural carriers). Within each city, the routes were apparently randomly selected.[17] The following table summarizes the sample in LR-I-163.

SUMMARY OF USPS- AND RANDOMLY-SELECTED SITES

	USPS Selected	Randomly Selected	Total
Regions	11	8	11
States	22	9	26
City Codes (CYs)	43	10	53
Zip Codes	58	18	76
Routes	254	86	340
Route Days	744	101	845

The total number of 53 City Codes (CYs), however, disguises the fact that a large number of these CY codes were actually geographically very close to each other, with many even in the same metropolitan area, as shown in the table below:

METROPOLITAN AREAS WITH MULTIPLE OBSERVED SITES

Metropolitan Area	USPS Selected CY Codes	Random Selected CY Codes	Total CY Codes
Cincinnati, OH	3		3
Dallas/Ft. Worth, TX	4	1	5
Detroit, MI	2	1	3
Los Angeles, CA	2		2
Milwaukee, WI	3		3
Bay Area, CA	2		2
Seattle, WA	4		2
Springfield/Worcester, MA	2	1	2
Tampa, FL	3		3
Trenton, NJ	3		3
Washington, DC Metro	3		3
Subtotal 11 Metro Areas	31	3	33
Total CY's in Database	43	10	53
% from 11 Metro Areas	**72.1%**	**30.0%**	**62.3%**

[17] ADVO/USPS-T13-2, Tr. 7369. However, questions remain about the true "randomness" of the random-selected sites, as discussed later.

Remarkably, just these 11 metropolitan areas account for 33 of the 53 City Codes in LR-I-163 -- 62% of the total CY codes in the survey. Moreover, these 11 areas account for 54% of both the total Zip Codes (42 of 76) and total carrier routes (182 of 340) in the database. This table also shows that three of the ten randomly-selected sites were in metropolitan areas that already had at least two USPS-selected sites. Another 14 CY codes were in cities with populations well over 100,000, with a median of 300,000.[18] Thus, the CY sites are not only highly clustered but skewed toward large metropolitan areas.[19]

B. The Exclusion Of Data From The LR-I-163 Data Set

Another problem discovered shortly before Mr. Raymond's appearance is that the LR-I-163 database excluded a large number of carrier routes and route-day observations that were collected over the same period as the LR-I-163 data. The ES project collected activity sampling data from at least six other cities, an unknown number of other zip codes and routes, and 175 other route-days.[20] Based on those figures, approximately 10% of the cities and 17% of the route-days were excluded from the data the Postal Service used to develop the ES time proportions. Recently, in response to ADVO/USPS-T13-63, Mr. Raymond briefly explained why six cities were excluded from the LR-I-163 data set (including one randomly selected city). Those excluded cities, however, apparently accounted for only about 14 of the missing 175 route-days (based on information in Raymond's response to ADVO/USPS-T13-61). Moreover, for some CYs in LR-I-163, there are observed routes that are not included

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18 New York, Chicago, San Antonio, Virginia Beach, Greensboro, Tallahassee, Little Rock, Omaha, Wichita, Ponce, PR, St. Charles, MO, Jackson, MI, Columbus, GA, and Jackson, MS.

19 Even the total of 845 route-days of observations is misleading. Just four cities accounted for 55% of those total observations (465 of 845).

20 LR-I-293, response to ADVO/USPS-T13-23(b).

in the data set. Also, for some routes in LR-I-163, there are some excluded route-days. Unfortunately, full identification and evaluation of excluded data was apparently not conducted by Mr. Raymond and could not be independently performed.[21]

In any type of study presented in rate proceedings or elsewhere, it is assumed (unless otherwise stated) that the filed database includes the entire data set encompassed by the study. If portions of the data have been purged from the data set for whatever reason (e.g., deletion of outliers, data scrubbing, problems with the data collection), this information is customarily divulged at the outset along with explanations.[22] Such information is obviously of critical importance in assessing the reliability of the data being presented, for a number of reasons. First, purged data may have a bearing on the study's sample design and the representativeness of the remaining data. Second, elimination of any data should be based on well-designed decision rules that should be carefully explored and tested. Third, it may be that, upon investigation, some or all of the omitted data should have been included in the database and were improperly omitted. Fourth, and conversely, disclosure and explanation concerning the purged data may, upon investigation, reveal that additional portions of the filed dataset should also be purged for similar reasons. Fifth, if the quantity of purged data is large (as is clearly the case here), exploration of the reasons for large-scale purging may indicate that the study was poorly designed or implemented, or that the results are unreliable. In short, independent review and validation of a study requires an assessment of both the excluded data and the

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21 Less than three weeks ago, we finally received a diskette containing information on the missing route-days. However, in the press of preparing testimony and reviewing many other just-received discovery responses, including ES videotapes, I have not had time to look at the missing route information, much less analyze it.

22 Mr. Raymond's written testimony and his response to an early interrogatory that no route days were purged from the data (ADVO/USPS-T13-16, Tr. 7393) led me to believe initially that LR-I-163 contained the entire data set.

reasons for their exclusion. This has not been possible due to the extreme lateness of the disclosure of these problems and the inadequacy of Raymond's explanations.

C. The Lack Of Statistical Support

Although statistical validity and representation of the universe of carrier routes should be a prime concern in ratemaking, Mr. Raymond conducted no analysis of the LR-I-163 data to determine whether it was representative of the USPS system of routes on an annual basis.[23] In response to questions concerning the representativeness of his sample, he has instead provided LR-I-293. This library reference includes three items: (a) a summary comparison of the unweighted results from all of his USPS-selected routes versus those of his randomly selected routes, (b) a comparison of age and gender of his sampled carriers to all carriers in the system, and (c) a spreadsheet, with some data missing, that purports to calculate the sampling requirements for the ES time studies (but not for the work sample study).

Despite his assertions to the contrary,[24] none of these demonstrate statistically that his sample is representative of the Postal Service system of letter carrier routes on an annual basis.[25] His only analysis of sampling requirements was based on statistical requirements for the time studies. As Dr. Hay explains, there is a

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[23] Response to ADVO/USPS-T13-56, Tr. 7497. Apparently, the Postal Service did not either. In a response redirected from Mr. Raymond, Mr. Baron attempts to support the ES data by segmenting the data into route types and then calculating confidence intervals for the weighted sample results by route type. As Dr. Hay explains, because the data were not collected in a statistically valid random manner, Mr. Baron's attempt is simply a mechanistic exercise having no real meaning. MPA-T-4 at 7-8.

[24] OCA/USPS-T13-1, MPA/USPS-T-13-13; Tr. 7797-7801, 7615.

[25] His comparisons of unweighted volumes and tallies for the random v. USPS-selected routes (LR-I-293, "ADVO23lr1Tbl.xls") is particularly unpersuasive. The unweighted totals skew the results by giving too much weight to routes that were heavily sampled over multiple days. More importantly, the "random" routes are not representative of the system. They share the same skew toward zip codes with substantially-above-average numbers of carrier routes as do the USPS-selected routes.

considerable difference between (1) quantifying the number of sufficient time and motion segments for purposes of time studies and (2) quantifying the appropriate number of routes, by route type, for purposes of determining a statistically valid sample of routes for purposes of ratemaking. MPA-T-4 at 13-14. Mr. Raymond has not demonstrated that his sample is representative of the entire system of letter carrier routes.

Further, his comparison of the results from routes in random and USPS-selected cities satisfies no statistical requirements.[26] For each route type, the number of routes from the randomly selected cities is quite small and cannot be considered to be either reliable or representative of the entire system.

RANDOM ROUTES BY ROUTE TYPE

Randomly Selected Sites	Number of Routes	Number of Regions
Residential Curb	56	8
Residential Park & Loop	19	7
Mixed Park & Loop	3	2
Foot	3	2
Mixed Curb	2	1
Business Motorized	1	1
Unknown	2	1

Mr. Raymond does not quibble with the fact that the random routes cannot be considered representative:

> "The randomly observed routes are a respectable sample but is [sic] not large enough to represent the total population of routes. It does not include the demographics of: carrier classification mix, route type mix, delivery point mix, age and gender mix for the ES study." OCA/USPS-T13-6, Tr. 7807.

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26 Surprisingly, although he excluded six cities and 175 route days from the LR-I-163 database, they are included in LR-I-292 which he proffers as evidence of the representativeness of the data in LR-I-163. And, although his sampling approach clearly involves a cluster sample, he did not sample weight any of his data. This is because he had no rigorous sampling plan related to route-level data..

This obviously and strangely conflicts with the response he gave to OCA/USPS-T13-1: "Based on the comparison of the data we collected from the random routes to the Postal selected routes we feel the all data [sic] should be considered as random and representative of the population." Tr. 7801. If the random routes are not representative of the system, then they obviously cannot be used as a benchmark to claim that the USPS-selected routes are representative. The number of routes from the randomly-selected cities could not possibly be large enough to validate the representativeness of the routes, by route type, which the Postal Service selected in a very deliberate manner.

Moreover, it is not clear how "random" those routes from the randomly-selected cities were. Mr. Raymond describes the selection of the random cities:

> "We used Excel® to generate a random number list for the Postal Service to use in the selection of the random sites. The Postal Service picked the sites in my presence from a listing of finance numbers." OCA/USPS-T13-6, Tr. 7807.

Yet three of the ten randomly selected sites were from metropolitan areas that had at least two USPS-selected sites. In addition, the zip codes in both the random sites and the USPS-selected sites have a substantially larger-than-system-average number of city delivery carrier routes -- an average of 26 routes per zip code for the USPS-selected sites and 24 for the random sites, compared to the system average of only 14. Tr. 7262-68.

This raises questions about whether the routes from the randomly-selected cities were truly random. Were all finance numbers in the country on the USPS list, or only finance numbers for a subset of cities or regions? Once a city was randomly selected, how were the sampled zip codes chosen from among multiple zips within the city? Did the selection of a finance number lead, in a truly random manner, to the selection of specific random zip codes and routes? These questions arise because of (a) the geographical proximity of some random cities to selected cities, (b) the high

routes-per-zip code skew of both the random and selected cities, and (3) differences in the mix of city delivery offices and zip codes among the randomly selected cities.[27] A non-random selection of delivery offices or zip codes within a randomly-selected city does not produce a random result.

D. The Small Sampling Ratios And Sample Bias

To determine the representativeness of the ES routes, I have compared them to available information on the total system of letter routes. Sampling ratios were among the first items checked. Two of the more obvious problems are that: (1) the sample is extremely small, and (2) the sample appears biased as a result of Postal Service Headquarters' directives and the need of the ES project to cluster sample cities and routes.

1. Sample Size

For each individual route type, all the ES unweighted sampling ratios are less than 0.5% of system total routes of that route type. For the three most populous route types, the ES foot and residential park & loop routes have a sampling ratio of less than 0.2% while the ES residential curb routes have a sampling ratio of little over 0.3%. In total, the ES routes are approximately 0.2% of total routes in the system. On a regional basis, the sampling ratios range from 0.04% for the Northeast region to 0.39% for the Pacific region. The business and mixed routes do not have a sufficient sample size to even attempt to claim randomness. Given the size and diversity of the Postal Service's system of routes, these unweighted sampling ratios are extremely small.

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[27] A city finance number can encompass a large number of zip codes served from different delivery stations. Yet for some random sites with a large number of city-wide zip codes, the selected zip codes are all served out of the same delivery office, while for others the selected zip codes are served out of different delivery offices.

Although Mr. Raymond has dismissed the concern about diversity within the Postal Service system of routes,[28] it is an important and recognized consideration. In order to adequately collect a statistically valid and representative sample of overall activity time proportions on routes, by route type, one would have to design a sample that would account for the variation in, for example, the following route/carrier characteristics:

- General geographic and climate conditions;
- Residential and commercial delivery point conditions (i.e., mode of delivery, type of receptacle, type of delivery point, customer types, distances between delivery points, coverage percentages);
- Daily, weekly and seasonal volume effects (both in quantity and mix);
- In-office work space and methods;
- Out-of-office travel accommodation, traffic and walking conditions, type of vehicle used, parking point availability;
- Local supervision and union considerations.

I do not believe the ES sample of 340 routes with an unweighted sampling ratio of 0.2% of total Postal Service routes is adequate to fully represent the above conditions -- particularly given the non-random, clustered nature of the chosen sites. This non-randomness is further illustrated by the fact that 44% of the routes in LR-I-163 (148 of 340) were observed during the peak season of October, November, and December.

2. Sample Bias

Sample bias is indicated by the fact that there are noticeable differences in the mix of route types between (a) the weighted sample routes and (b)

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[28] In response to NAA/USPS-T13-4 (Tr. 7788), Mr. Raymond stated: "My experience with sampling populations is that when the population gets very large, no matter what criteria the company uses to pick a sample, the results are very close to a random sample." I disagree completely. To ensure adequate representation, a sampling plan becomes especially important when a population is very large and very diverse.

total routes in the Postal Service system, a difference which also occurs by postal region. In particular, the weighted ES sample has a substantially greater proportion of residential curb routes and a substantially lesser proportion of residential park & loop routes than exist in the total system.

SYSTEM v. ES SAMPLE – DISTRIBUTION OF ROUTE TYPES

Route Type	Total System Routes	Distribution of Total Routes	Un-Weighted ES Routes	Weighted ES Routes	Distrib. of Wghtd. ES Routes
Foot	19,115	11.5%	36	223	13.8%
Resident. Loop	82,908	49.9%	110	670	41.7%
Resident. Curb	51,486	31.0%	159	680	42.2%
Mixed Loop	5,220	3.1%	8	10	0.6%
Mixed Curb	4,056	2.4%	20	26	1.6%
Business Motor.	3,332	2.0%	3	3	0.2%
Total	166,107	100.0%	336	1,612	100.0%

As residential loop and residential curb are the two principal route types in the system, the disparity between the ES sample and the universe is particularly indicative of sample bias. That bias is toward cities and zip codes with a greater-than-average number of residential curbline routes and more densely populated delivery areas.

In addition, the sampled zip codes differ significantly from the system in terms of the average number of routes per zip code. The ES sampled zip codes averaged 26 routes while the national average for zip codes with letter carrier routes is only 14. Of the 76 zip codes sampled, only 11 (14.5%) had less than the national average number of routes, 65 (84.5%) had more than average, and 28 (36.9%) had more than twice the national average number of routes. This disparity extends to the regional level as well. In each Postal Service region, the sampled zips averaged more routes per zip code than the average for that region. For example, in the Allegheny region, the

sampled zips averaged 30 routes per zip compared to the region average of only 13 routes.[29]

This bias toward larger zip codes (i.e., more densely populated areas) is not surprising since the Postal Service Headquarters' directive to its Regions was to identify cities with multiple delivery units having a mix of both business and residential curbline, loop, and foot routes. Given the increased Postal Service reliance on curbline and dismount delivery modes over the past 20 years, this likely creates bias toward cities in high-delivery point growth areas.[30] And, in order to sample foot and business/mixed routes, relatively dense delivery areas would have likely been selected.

In addition, the sampled distribution of routes by route type among the regions differs from the distribution of the total. For example, regions in the north and east (the Northeast, New York Metro, Allegheny, Capital Metro, Mid-Atlantic, and Great Lakes regions) account for 51.7% of the systemwide residential park & loop routes, but only 42.6% of the ES sample. Conversely, regions in the south and west (the Southeast, Midwest, Southwest, Western, and Pacific regions) account for only 48.8% of the systemwide residential park & loop routes, but 57.4% of the ES sample A representative sample would be expected to have a distribution among regions more in line with the distribution of total system residential park & loop routes. Instead, it appears that residential park & loop routes in the north and east are under-represented while those in the south and west are over-represented. The under-

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29 All calculations are presented in my workpapers.

30 One way to see this is to consider the four high-growth regions of the country: the Southwest, Southeast, Pacific and West. About 60% of the ES weighted residential curbline routes were from those four regions while only about 40% of the ES weighted residential park & loop routes were from those regions. Obviously, the older, lower-growth regions of the country have a greater concentration of park & loop routes.

represented north and east likely have a greater proportion of lower-population growth areas or older delivery areas that are more likely to be served by park & loop routes., whereas the south and west likely have a greater proportion of higher-population growth areas or newer delivery areas. Similar situations occur for the other route types as well.

Results from the ES foot routes provide a clear demonstration of how unrepresentative (biased) sampling can affect results. Almost 85% of the ES foot routes come from the New York Metro, Pacific and Great Lakes regions while only 48% of total system foot routes are in those regions. The results of a single, extreme ES foot route in the New York Metro region (out of only four foot routes sampled in that region), after sample weighting, accounts for approximately half of the weighted load time proportion calculated for foot routes. Tr. 7239-55. Even Mr. Baron was "somewhat troubled" by that result. Id. at 7255.

Another indication of non-representativeness and bias of the ES sample compared to the Postal Service system is the disparity in the number and mix of delivery types for residential park & loop routes, the most numerous route type. The ES weighted sample clearly has more residential NDCBU and central deliveries and fewer residential other/loop deliveries than do all such routes in the system. The ES sample also has more possible deliveries.

RESIDENTIAL PARK & LOOP ROUTES -- DELIVERY TYPES

Residential Park & Loop Route Delivery Types	ES Weighted Sample Average Per Route	ES Weighted Sample Distribution	Total System Average Per Route	Total System Distribution
Resident. Curbline	31	6.3%	38	7.9%
Resident. NDCBU	35	7.1%	29	6.0%
Resident. Central	131	26.2%	88	18.3%
Resident. Other/Loop	274	54.8%	298	61.8%
Business	28	5.7%	29	6.0%
Total	500	100.0%	482	100.0%

NDCBU/central deliveries constitute one-third of the total ES park & loop route deliveries, compared to less than one-fourth in the system. Moreover, the average ES park & loop route has 42% more NDCBU/centralized deliveries than the average system park & loop route.

This bias toward NDCBU and centralized deliveries results in an overstatement of average load time on park & loop routes. When compared on a regional basis, the ES sample characteristics (mix of delivery types and total number of possible deliveries) differ considerably from those for the total residential park & loop routes in the same region. In particular, residential park & loop routes in the Allegheny region are severely under-represented and those routes, on average, have a low proportion of NDCBU/centralized delivery points. This is further evidence that the ES sampled zips are biased toward more densely-populated and/or higher delivery-point growth areas. In any case, greater load time, as a proportion of total out-of-office time, is expected with NDCBU/centralized delivery points, and the ES park & loop sample is biased toward delivery points requiring high load times.

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The kinds of problems I have found with the ES data collection, described above and in Section II, are the very kinds of survey design and execution problems that the Data Quality Study, prepared by A.T. Kearney, Inc., cautions about:

"Bias includes three components:

1. Bias due to survey design errors (e.g., incomplete lists from which to sample) includes data collection errors and errors in analysis. In each case, the appropriate quantity was estimated, but it was estimated incorrectly or incompletely.

2. Bias due to failures during implementation (e.g., data recording errors, missing data, failure to follow sampling procedures).

3. 'Definitional bias' is estimating the wrong quantity or using the wrong data source for the relevant economic issue (e.g., using the wrong distribution key)."[31]

As the Data Quality Report observes, "[s]implicity is important for implementation by geographically dispersed data collectors." Id. at 13. It also notes that "[i]ncreasing the sample size of a survey may not increase accuracy appreciably if the survey is subject to bias." Id. at 11. For these and the other reasons I have described, the ES work sampling, while perhaps appropriate for its original purposes, is not appropriate for postal costing purposes.

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[31] Technical Report #2: "Statistical Analysis of Data Quality Issues" at page 11, A.T. Kearney Data Quality Study, April 16, 1999.

IV. THE POSTAL SERVICE'S OPERATIONAL EXPLANATIONS DO NOT EXPLAIN OR VALIDATE THE HUGE INCREASE IN LOAD TIME IMPLIED BY THE ES WORK SAMPLING RESULTS

The ES time proportions for letter carrier out-of-office time are dramatically different from the 1986 STS proportions. System-wide, the changes for the major categories are as follows:[32]

	STS	ES
Load Time	25.15%	38.15%
Foot Run Time (FAT)	41.59%	29.49%
Curbline Run Time (CAT)	9.14%	3.92%
Drive Time	7.20%	11.01%
Sum of Load, FAT, CAT, and Drive	83.08%	82.57%

The ES data imply a large, unexplained shift away from both CAT and FAT run time and toward load and drive time, as shown by the following load and run time per stop comparisons.[33]

Load Time

	1986 Load Time Per Actual Stop (STS)	1998 Load Time Per Actual Stop (ES)	Change
SDR	11.79 sec.	17.04 sec.	44.6%
MDR	75.56	114.35	51.3%
B&M	21.67	36.21	67.1%
Wtd. Avg.	17.37	26.01	49.7%

Run Time

	1986 Run Time Per Actual Stop (STS)	1998 Run Time Per Actual Stop (ES)	Change
CAT runtime	5.47 sec.	2.66 sec.	- 51.4%
FAT runtime	25.09	20.11	- 19.8%
CAT + FAT	30.56	22.77	- 25.5%

32 STS is based on 1998 accrued costs by route type. This table excludes street support which, on a system-wide basis, has remained relatively unchanged. All data and calculations are in my workpapers.

33 Averages represent total accrued load, CAT, and FAT times converted to minutes and divided by CCS total actual stops.

These are enormous changes. Even if the ES proportions were assumed to be representative and reliable (which they are not), average accrued load time per actual stop would have had to increase 50% since 1986 while average run time would have had to decline by 26%. This implies that the proportion of route time (excluding street support) spent by carriers loading mail has increased from 30% to 50%. The obvious question is how could the system have changed so much?

Postal Service witness Kingsley offered several explanations why load costs have increased since 1988. She cited increases in cluster boxes and other centralized delivery points, motorization and curbline, delivery point coverage, and volume per delivery. She also cited changes in mail mix and DPS implementation. USPS-T-10 at 27-28.

Upon closer examination, however, her explanations fall far short of explaining the magnitude of the changes implied by the ES data. I believe this is principally because the ES data, for the reasons I have described earlier, do not provide a representative or reliable indication of true cost proportions conforming to ratemaking costing criteria or standards. Ms. Kingsley's specific points are addressed below.

Growth in Cluster Boxes. While there has been a growth in centralized and NDCBU receptacles since 1988, this growth has undoubtedly been concentrated in new housing developments and outlying suburban areas. It should not have had much impact on foot and park & loop routes in established neighborhoods.[34] Moreover, data from the USPS Carrier Cost System (CCS) indicate that this growth in cluster boxes has not had as much impact on the system as implied:

- The proportion of actual Multiple Delivery Residential (MDR) stops (which include all residential NDCBU and centralized stops) has

[34] The vast majority of the possible stops in existence in 1998 were in existence and embedded in the system in 1986 (e.g., 16.4 billion CCS stops in 1998 compared to 14.7 billion in 1986).

remained virtually unchanged since 1986 -- from 7.49% of total system stops in 1986 to 7.55% in 1998.

- The proportion of actual Single Residential Delivery (SDR) stops has declined by less than 0.5% (from 84.44% to 83.99%) while the proportion of actual Business and Mixed (B&M) stops has increased by less than 0.4% (from 8.07% to 8.46%).

- Coverage ratios (actual stops to possible stops) for SDR and MDR stops have increased only slightly, while that for B&M has actually decreased slightly between 1986 and 1998.

	1986 CCS Coverage	1998 CCS Coverage
SDR stops	92.1%	92.9%
MDR stops	97.3%	97.4%
B&M stops	91.1%	89.9%

Since MDR stops represent only 7.6% of the total CCS stops in the system, this change cannot possibly explain the huge differences between the STS and ES time proportions.

Replacement of Foot Routes and Increased Motorization. Foot route costs have declined from 20% to 11% of total letter carrier costs since 1986. However, the proportion of foot *plus* park & loop accrued costs has actually increased from 82.1% to 82.4%, indicating that most replaced foot routes (which are generally in more urbanized areas) have been converted to park & loop routes. Such conversions should save some walking-related "travel time," but would not likely change the actual geographic delivery conditions of those areas (i.e., location of delivery unit, delivery density, and walking conditions). Accordingly, the motorization of foot routes would likely save some FAT walking time related to traveling between groupings of deliveries in urbanized areas, but would be partially offset by added drive time traveling between parking points.

The motorization of some foot routes, however, cannot explain the extremely large decrease in the systemwide proportion of FAT walking time -- from 42% to 29% -- implied by the ES data. First, converted foot routes appear to account for only

roughly 10% of all routes. Second, the total of foot plus park & loop routes, which account for the great majority of FAT walking time, has not changed since 1986. Third, because foot routes are concentrated in relatively dense areas with shorter distances between delivery points, the amount of FAT walking time saved by conversion to park & loop routes would not be large.[35]

Changes in curbline routes likewise cannot explain the ES results. The proportion of curbline routes in the system appears to have actually declined slightly since 1986 -- from 17.0% to 16.1%. While this does not necessarily mean that the proportion of curbline stops in the system has declined, it clearly does not support the Postal Service's suggestion that curbline stops have increased substantially. In fact, the ES data appear to be inconsistent with such an increase. Those data imply not only that total run time (CAT curbline plus FAT walking time) has declined sharply since 1986, but that the CAT proportion of total run time has also declined sharply, from 18% to less than 12%.[36] For this to be believed, there would have to be dramatic declines either in the proportion of curbline stops or the average distances between curbline stops. Yet if, as the Postal Service implies, curbline stops have increased

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[35] Average drive time likely has increased somewhat due to an increase in dismount stops to serve centralized and NDCBU delivery points. MPA/USPS-T10-8, Tr. 1710. However, dismounts are operationally comparable to small loops and should also have FAT run time associated with them. Although it is not surprising that the ES data show an increase in drive time relative to the STS, that increase is likely overstated because the sampled ES routes have a substantially greater-than-system-average proportion of centralized and NDCBU deliveries. Further, the under-representation of residential single delivery points and over-representation of multiple delivery points in the ES sample, especially in more urban/suburban areas, may help explain why the ES FAT and CAT run time proportions are substantially less than those from the STS. Another contributing explanation is the misrecording of some FAT access time as load time.

[36] Total system CAT and FAT proportions. This ES-implied reduction in the CAT proportion of total run time occurs also within the two major categories of routes, residential curbline and residential park & loop.

substantially since 1986, then one would expect to see an increase in the proportion of CAT run time and a reduction in FAT run time. The ES data imply just the opposite.

Ms. Kingsley could not explain these seemingly anomalous FAT/CAT run time results, and redirected questions to Mr. Baron. See MPA/USPS-T10-21, Tr. 7181-83. Baron's attempt at explanation was not illuminating. When asked to provide an "opinion and rationale" why average access times have declined so dramatically since 1988, he simply said the reason was the "substitution into the BY98 worksheets of the new street-time percentages presented" in Mr. Raymond's testimony. MPA/USPS-T10-21 (redirected from Kingsley), Tr. 7183. In follow-up to that response, when asked to "provide your explanation or opinion of why" access time "has declined so much in nine years," he again merely repeated that the reason was the "substitution of the new street-time proportions derived from the ES database for the proportions derived from the 1986 STS study." ADVO/USPS-T12-12, Tr. 7095. *The Postal Service's inability to explain these results suggests that the "substitution of the ES proportions" is the problem, not the explanation.*

Introduction of DPS. DPS letters are obviously new since 1986. However, their effect on load costs is not fully apparent. Kingsley herself stated that carriers do not spend more time at the delivery point "fingering" DPS mail because the fingering activity occurs as they walk between deliveries. Tr. 1774, 2110-11. Further, using the USPS estimate of the total increase in carrier time due to DPS, and assuming that all letters are DPS and that all additional cost is load cost (clearly extreme assumptions), the increased time would not come close to explaining the large ES-estimated accrued load time per stop.[37]

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[37] See USPS-T-10 at 27, where Ms. Kingsley states that the additional handling cost for DPS is estimated at approximately one hour per 5000 pieces, including all in-office and out-of-office additional time associated with DPS.

Increases in Deliveries Coverage, Volume Per Delivery, and Mail Mix. Ms. Kingsley implied that the large change in average load time is caused by large increases in volume per delivery and changes in mail mix since 1988. However, she overstated the effect of volume growth on load costs by focusing on pieces per *possible* delivery, rather than pieces per *actual* delivery which have likely grown by only roughly 3% since 1988. Tr. 1948-52, 2107. Even compared to 1986, the changes have not been large. For Single Delivery Residential stops which represent 84% of total stops, volume per stop has increased only 8.2% and the mix of volume has changed only slightly since 1986.[38]

SDR Stops	1986	1998
Total Volume per Stop	5.03	5.44
Proportion of Letters	75.4%	73.2%
Proportion of Flats	23.5%	25.5%
Proportion of Accountables	0.2%	0.1%
Proportion of Parcels	0.9%	1.2%

In contrast to these relatively small changes in volume and mix since 1986, the ES time proportions imply that accrued load time per SDR stop has increased 44.5% -- from 11.8 to 17.0 seconds! By comparison, the SDR Load Time Variability (LTV) model indicates that these volume changes since 1986 should have caused only a 6.6% increase in stop time.[39] The extremely large increase in accrued SDR load time implied by the ES data is implausible and unexplained.

Such large disparities raise substantial questions. Although the LTV models do not reflect DPS handling, they have been the best available means for determining how system-wide changes in volume, mail mix, and possible deliveries per stop

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38 Following Ms. Kingsley's appearance, the Postal Service acknowledged that "there have not been any substantial changes in the proportion of residential delivery volumes which were flats." ADVO/USPS-9, Tr. ___.

39 This disparity between ES implied load time and LTV modeled time occurs for MDR and B&M stops as well.

impact load time per stop. They also were constructed using a clear and reliable definition of load time, while the same cannot be said for the ES data. Certainly they provide a reasonable general indication of how much true load time should have changed since 1986, and cast serious doubt on the validity of the ES load time estimates.

In short, while there have been operational changes since 1988, the Postal Service's explanations could not account for the enormity of the increased load time implied by Raymond's data and analyses. To the contrary, some of the explanations seem inconsistent with the ES results, casting further doubt on their reliability for postal costing purposes.

V. ES VIDEOTAPES AND OTHER ES DATA DEMONSTRATE THAT THE WORK SAMPLING TALLIES SUBSTANTIALLY OVERSTATE TRUE LOAD TIME

For the reasons discussed in previous sections, it became apparent to me that Mr. Raymond's results substantially overstate the proportion of true load time costs in the Postal Service's city delivery carrier system. This overstatement is due to a combination of two factors: sampling errors due to a non-representative sample design, and misrecording errors due to data collectors not always interpreting and recording observations of carrier activities in accordance with the costing definitions used for rate case purposes. To test this second factor, I analyzed some ES videotapes and regression models of ES data as described below. These analyses confirm that the ES load tallies include a portion of time that does not represent true load time, as defined for postal costing purposes.

A. The ES Videotapes and Time Studies

ES data collectors following a particular carrier not only recorded work sample observations of the carrier's activities at six-minute intervals, but also videotaped portions of the carrier's route and conducted time studies of delivery segments, recording information on when the time study began and ended, the number of deliveries the carrier made, the total paces the carrier walked during that time, and other information. From my earlier investigation of the ES data, it had become apparent that (1) the proportion of load time tallies was overstated, and (2) at least part of this overstatement was likely due to ES data collectors recording non-load activities with codes that Raymond ultimately allocated to load time. Moreover, the extremely large increase in the load time proportion on park & loop routes led me to suspect that these routes were one source of overstatement. In April, when we finally were allowed to obtain restricted access to confidential materials, I decided to review some of the videotapes to see if they might be useful in analyzing load time proportions. The results of my review are provided below.

Videotape Analysis. My analysis of ES videotapes focused on a selection of park & loop routes that have relatively consistent delivery characteristics throughout the day, and sufficient videotape data to obtain a reasonable understanding of route conditions and load-run time characteristics.[40] Due to time constraints and tape quality limitations, I have been able to fully review and process the videotape data for 11 the 29 routes initially viewed at the Postal Service's Merrifield office.[41] The videotapes for each of these routes were carefully reviewed and timed to determine the amount of load time for each delivery and the elapsed loop times for the segment, as described in more detail in MPA-LR-7. The following table summarizes the results of my analyses of these routes:[42]

[40] I focused on park & loop routes with consistent delivery-type characteristics for several reasons. First, because of the limited time provided for initial review of videotapes at Merrifield, the lateness in receiving tapes for further analysis, and the substantial time required for proper analysis of the tapes, I simply did not have time to analyze all of the tapes. I had to focus on those that were easiest to analyze. Second, it quickly became apparent that many of the tapes (especially for non-park & loop routes) were not particularly useful for my analysis, because they either show choppy, incomplete segments of activities or involve complex routes with a mix of different delivery types that are difficult to analyze. Third, the videos of park & loop routes tended to have longer segments of multiple load-run time cycles that were easier to interpret (e.g., where the breaks between load and run time activities could be more easily identified). These aspects are discussed more fully in MPA-LR-7.

[41] A twelfth route was fully analyzed but is not included in my summary of results because of the limited time span of the videotaped segments. Although the taped portions showed a low percentage of load time (about 20% of loop time), the tape spanned only about a one hour period in the morning.

[42] In all cases, the tally data and the videotape data are from a day included within LR-I-163. (Routes 1913, 8212, 611, and 6410 had tape for two days; routes 415 and 820 had tape for three days.) The ES ratio has been adjusted to match the same time period as observed in the videotapes.

CY and Route	Number of Stops Observed in Videotape	Amount of Videotape Time Observed (Minutes)	Average Stop Time (Seconds)	Comparable ES Proportion of Load vs. Load plus FAT Run Time	MPA Proportion of Load vs. Load plus FAT Run Time
CY04 4233	68	27.1	3.6	35.5%	15.2%
CY05 2822	49	23.4	3.2	30.0	11.3
CY27 1428	23	16.2	10.6	46.2	25.1
CY37 0321	28	14.8	5.4	40.7	17.1
CY51 6410	128	53.5	7.3	57.5	29.2
CY55 0611	147	104.1	4.2	32.3	9.8
CY58 8212	50	25.1	4.6	56.0	15.2
CY60 1913	51	23.5	3.6	48.7	13.1
CY62 0415	172	86.1	3.6	33.3	11.9
CY63 0806	27	11.9	6.5	45.0	24.7
CY63 0820	90	45.5	6.6	30.5	21.7

The videotape results for these routes show a significantly lower proportion of load-time-to-loop-time than indicated by the ES work sample tallies. This strongly suggests that on walking sections of park & loop routes, the ES tallies overstate true load time by a significant amount. This overstatement is most likely due to ES data collectors recording non-load activities with codes that Raymond ultimately allocated to load time.

While my analysis was necessarily limited due to time constraints, it does provide clear evidence of overstatement of true load time proportions. Although it is not possible to extrapolate these results to quantitatively estimate the amount of load time overstatement in the ES database, this analysis does demonstrate why the ES results cannot be deemed to be a reliable indication of true load time costs in the USPS city delivery carrier system.

B. The Postal Service and MPA Regression Analyses of ES Load Time v. Possible Deliveries Indicate A Substantial Overstatement Of True Load Time

To investigate the relationship of the ES load time data to the expected structure of load time activities (using the standard ratemaking-costing definition) and

to the results of the LTV models, MPA developed a route-level regression model of ES load tallies with possible deliveries and other variables.[43] Separately, the Postal Service also developed a route level regression model of ES load time with volumes, possible deliveries, and other variables (USPS-LR-I-310). Not surprisingly, the results of both analyses are exceptionally consistent and demonstrate that the ES data overstate true load time.

The MPA ES regression model explains route-level ES load tallies as a function of (a) number of possible deliveries by delivery type and (b) dummy variables identifying delivery mode of the route. Based on a qualitative analysis of the ES data, I hypothesized that if there were any overestimates of true load time in the ES data, they would likely vary by the delivery mode employed on the route. (There are five delivery modes: curb, park & loop, dismount, central, and other.) The delivery mode dummy variables were included to test this hypothesis.

Separately, the USPS ES regression model explains ES load time by route-day as a function of (a) volume by shape, (b) proportion of possible deliveries by delivery type, (c) number of total possible deliveries, (d) volume/possible deliveries interaction terms, and (d) shape related dummy variables related to high per-piece ES load time observations.

In both the MPA and USPS ES models, the intercept and intercept-related terms are large and statistically significant. As explained below, these values demonstrate that the ES load tallies include activities which are not true load time. In the MPA ES model, the intercept applies to the park & loop mode of delivery. The related terms are the dismount and "other" delivery mode dummy variables which add to or subtract from the load time effect included in the park & loop intercept value. In the USPS ES

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[43] The possible deliveries variable was used as a proxy for volume and actual deliveries. Apparently, actual delivery data are not available in summary form and volume data were provided only recently. Appendix B provides a more detailed examination and explanation of both the MPA and USPS ES models.

model, the proportion of possible deliveries by delivery type and the high-load shape-related dummy variables are the intercept-related terms. Coefficient values for these terms are also large and statistically significant.

The key point is that the intercept and intercept-related terms in both models represent relatively "fixed" time in the ES load time data (i.e., time that does not vary directly with number of possible deliveries). If the activities encompassed by the ES load time data only included true load time, then the intercept value and the coefficients for the other related terms would be close to zero and statistically insignificant. This result is expected for true load time, since zero possible deliveries should produce zero load time. Thus, this fixed time identified in the regressions should be considered non-load time that belongs in another out-of-office time component. This non-load time is the result of data collectors recording non-load carrier activities with codes which Mr. Raymond allocated to load time.

Both the MPA and USPS ES models demonstrate why the ES estimate of accrued load time is 92.3% greater than the LTV estimate of load time, but the USPS ES model variability generates a variable cost that is only 35.8% greater than that for LTV. The lower LTV estimate of accrued load time is associated with 64.0% variability while the substantially higher ES estimate is associated with a 45.2% variability. This is precisely what is expected when the load time estimate being used contains a high proportion of fixed time that cannot be true load time. If the ES time proportions are used to disaggregate out-of-office costs, then there is no question that the variability estimate from the USPS ES model produces a more reasonable estimate of variable load time.

This latter point -- the necessity to match accrued costs and variability models in order to avoid severe errors and distortions in estimation of volume variable costs -- is extremely important. The STS estimates of accrued load time, themselves, are 47.4% greater than the Load Time Variability (LTV) model estimates. ES-based

estimates, however, show an even much greater disparity -- 92.3% greater than the LTV modeled estimates. The disparity between modeled and STS accrued estimates was troubling enough, but now it is enormously greater with the ES accrued estimates. This indicates at least one of two problems: (a) inaccuracy or unreliability in either the LTV or the STS/ES results, or (b) a severe mismatch between the functions represented by the LTV models and those reflected in the STS/ ES load time proportions.

In either case, this presents the Commission with a serious ratemaking problem. When variability is derived from a functional model that only explains approximately half of the estimated accrued time for that function, there is an extremely high probability that the estimated accrued time includes much more than what was modeled. In that event, applying the modeled variability to the estimated accrued time would produce a result that not only cannot be explained but has no meaning. Moreover, doing so would clearly produce a greatly overstated estimate of variable functional costs.

VI. THE POSTAL SERVICE'S INCORRECT ATTRIBUTION OF THE POSSIBLE DELIVERIES EFFECT ON LOAD TIME

In USPS-T-12, Mr. Baron continues to assert that the effect of possible deliveries on MDR and B&M stop load time, as measured in the LTV stop-level load models, should be attributed to the subclasses.[44] He believes that, if he replaces the number of possible deliveries in the LTV stop-level models with the number of actual deliveries, then he can measure the extent to which average stop load time varies with actual deliveries, which in turn vary with volume. He attributes this "volume-variable" actual deliveries load time among the subclasses. However, that attribution is

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[44] Multiple Delivery Residential (MDR) and Business and Mixed (B&M) stops typically have more than one delivery per stop. Thus, the LTV MDR and B&M models reflect the fact that volume may be distributed among multiple deliveries at the average stop.

incorrect. All volume-related stop load effects are already captured by the volume coefficients in the models. Thus, his approach amounts to attributing some of the stop load time twice and is clearly excessive and inappropriate.

What Mr. Baron ignores is that volume affects average stop load time in two ways. Greater stop volume increases average stop load time directly through an increase in volume per delivery, when actual deliveries stay constant. And, when there are scale economies at the delivery level, greater stop volume also indirectly increases stop load time. The indirect effect may include the increase in actual deliveries per stop (e.g., increases in delivery-related fixed costs) and the increase in average unit time (from a reduction in pieces per delivery). Both the direct and indirect effects from a volume change are necessarily captured by the statistically significant volume coefficients in the LTV models. The possible deliveries variable in the model does not reflect any volume effects, instead it is a control variable so that the LTV volume coefficients properly measure the entire volume effect on stop-level load time.[45]

Comparable to the MDR and B&M stop-level load time models, the USPS ES model discussed in LR I-310 is a route-level model with multiple possible deliveries. And that discussion makes a suggestion similar to the one made by Mr. Baron in USPS-T-12: the possible deliveries effect in the route-level USPS ES model should be attributed among the subclasses. This, of course, is also incorrect and for the same reason. The possible deliveries variable in the route-level load time model

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45 The number of possible deliveries affects stop-level load time by affecting the number of actual deliveries, independently of volume. Leaving volume constant, an increase in possible deliveries increases the number of actual deliveries. This is because the volume-coverage function will distribute the constant level of volume among more actual deliveries when there are more possible deliveries. Further, the presence of possible deliveries variables in the models is appropriate. If the possible deliveries variables are excluded from the models, it would artificially inflate the coefficient values for the volume variables and lead to an overstatement of load time variability.

serves the same control purpose as in the stop-level load time models. Just as in the stop-level models, the volume coefficients reflect the entire volume effect on route-level load time model. When volume on a route increases and there is less than 100% delivery coverage on the stop, then some of the volume goes to newly covered stops/deliveries (causing whatever fixed stop/delivery time is appropriate) and average volume for all covered stops/deliveries on the route decreases. [46] This entire effect is measured in the volume coefficients. Just as in the stop-level B&M and MDR models, possible deliveries in the ES route-level model is simply a control variable.

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46 Apparently the USPS is confused about how coverage changes average stop/delivery and average per piece load time. (See, e.g. the discussion in LR-I-310, page 20.) When there is less than 100% coverage, a volume increase causes an increase in coverage which reduces average volume per stop on the route. If there are stop/delivery-level load time scale economies (i.e., elemental load time variability is less than 100%), then average per piece load time actually increases (coverage-related load time is positive). On the other hand, if there are no such scale economies (i.e., elemental load time variability is 100% and there is no fixed stop/delivery time), then average load time per piece does not change and changes in coverage have no effect on per piece load time (i.e., coverage-related load time is zero).

APPENDIX A

AUTOBIOGRAPHICAL SKETCH

My name is Antoinette Crowder and I am a senior consultant with TRANSCOMM, Inc., an engineering and economic consulting firm located in Falls Church, Virginia. I have been associated with TRANSCOMM for twenty-seven years and, during that time, have been involved in a variety of projects dealing with costing, pricing, market and demand studies, economic and financial analyses, survey design, and research on numerous regulatory and policy issues. These activities have concerned the electric power, gas, communications, and postal/publishing industries. I have prepared or assisted in preparing numerous filings at various federal and state regulatory agencies on behalf of numerous clients. In addition, I am involved in the firm's overseas consulting activities, providing financial, economic and regulatory assistance to multi-national organizations, international firms, and national governments.

I have been involved in analyses of postal ratemaking and policy issues since the beginning of the R77-1 rate case. My work has involved revenue requirement, cost attribution and distribution, subclass rate structure and discounts, institutional cost allocations, service-quality measurement, demand and market assessment, and mail classification issues. I am part of the TRANSCOMM team that provides economic/financial advice on postal matters and monitors costs, financial statements, volumes, service levels, and other aspects of Postal Service operations on behalf of several clients.

I have testified before the Postal Rate Commission in seven proceedings and have contributed to development of other testimony presented to the Commission. In Docket R84-1, I contributed to mail processing peak-load and second-class intra-SCF discount testimony. In Docket R87-1, I contributed to carrier-out-of-office and third-class/fourth-class Bound Printed Matter drop-ship discount testimony, and I also prepared and presented rebuttal testimony on third-class presort discounts. In

Dockets C89-3/MC89-1, I helped prepare and presented direct testimony on the proposed local saturation subclass. In Docket R90-1, I assisted in preparation of carrier-out-of-office cost and institutional cost coverage testimony and prepared and presented rebuttal testimony on third-class rates. In the R90-1 Remand, on behalf of a third-class mailer's group, I presented testimony concerning the attribution of city carrier coverage-related costs. I presented two pieces of rebuttal testimony in Docket R94-1 and a rebuttal testimony in MC95-1. In Docket R97-1, I presented testimony in response to Presiding Officer's Notice of Inquiry No. 3 on city delivery carrier load time costs, and rebuttal testimony on carrier costs and rate design issues.

Over the course of my 23-year involvement in postal ratemaking matters, I have had numerous opportunities to observe postal operations and have analyzed the cost aspects of those operations. I have also become familiar with economic costing and pricing concepts, both generally and as applied to postal ratemaking.

My education includes a B.S. in Biology from the University of Virginia, an M.S. in Biology from George Mason University, and additional course work in economics, mathematics and statistics.

Appendix B

COMPARISON OF MPA REGRESSION OF ES LOAD TIME TALLIES TO POSSIBLE DELIVERIES TO USPS REGRESSION OF ES LOAD TIME TO VOLUME AND POSSIBLE DELIVERIES

This appendix describes the MPA and USPS regressions of ES load time, and then compares and assesses results from the two models. It also demonstrates that both models exhibit the same ES load time attributes: the ES load time data, when investigated formally through regression technique, do not generate the expected route-level structure for load time. Instead, they both generate results that demonstrate that the ES data overstate true load time, as defined for the Load Time Variability (LTV) model, because they include observations of carrier activities that are not true load time.

A. MPA Model of ES Load Tallies vs. Possible Deliveries

1. MPA Model Description

An MPA route-level load model was developed to investigate the relationship of the ES load time data to: (a) the expected structure of load time activities (using the ratemaking-costing definition) and (b) the results of the LTV models. The model assumes route load time is explained by route possible deliveries by type and delivery modes. Coefficient estimates for the two sets of explanatory variables were developed by regressing route load tallies against the number of possible deliveries by delivery type by route, and a series of delivery mode related dummy variables.[1] The delivery mode variables were included in the analysis

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[1] Conceptually, true route-level load time is affected by two workload load variables - route volumes and number of actual deliveries. Ideally, regressing the ES load tallies against these two variables would allow the true load time contributions from each variable to be separately identified and assessed. However since these data were lacking, route-level possible deliveries by delivery type, provided by the USPS for ES sampled routes, were used in the regression model as proxy workload variables to explain the ES load tallies. The ES project apparently collected

(footnote continued)

based on a separate qualitative assessment of the ES data. It was clear from an examination of such data that any over-estimates of load time might be partially explained by the delivery mode employed on the route.

The model developed coefficient estimates for the following eight possible delivery types and five delivery modes:

Delivery Types	Delivery Modes
Residential and Business Other	Park& Loop
Residential and Business Curb	Dismount
Residential and Business NDCBU	Curb
Residential and Business Central	Foot
	Other

The residential and business other delivery type includes park & loop and foot deliveries.

Data from the 336 ES routes used to develop ES out-of-office time proportions were used to construct the model. The ES load tallies from the multiple-day routes represent averages of daily observations and each tally was assumed to represent six minutes of out-of-office time. The number of possible deliveries by delivery type and the delivery mode employed by route were provided by the USPS.[2]

The load time effect from the possible delivery and delivery mode related variables was tested through the following regression form:

(footnote continued from prior page)

information on actual deliveries but did not maintain summary records on them. (ADVO/USPS-T13-18) It also collected volume information and made a hard copy of such data available a few weeks ago and an electronic version of the volume data was made available within the past several weeks. Route volumes and actual deliveries can be expected to vary directly with route possible deliveries. Thus, possible deliveries should indirectly affect route-level load tallies through its relationship with volume and actual deliveries.

2 USPS LR I-219.

$$LT_i = \alpha + c_1*RCURB_i + c_2*RNDCBU_i + c_3*RCENT_i + c_4*ROTHER_i + c_5*BCURB_i + C_6*BNDCBU_i + C_7*BCENT_i + C_8*BOTHER_i + \sum d_j*DMODE_{ji} + \varepsilon_i,$$

where: LT_i = route (i) load tallies,

$RCURB_i$ = route (i) residential curb possible deliveries,

$RNDCBU_i$ = route (i) residential NDCBU possible deliveries,

$RCENT_i$ = route (i) residential central possible deliveries,

$ROTHER_i$ = route (i) residential other possible deliveries,

$BCURB_i$ = route (i) business curb possible deliveries,

$BNDCBU_i$ = route (i) business NDCBU possible deliveries,

$BCENT_i$ = route (i) business central possible deliveries,

$BOTHER_i$ = route (i) business other possible deliveries,

$\sum d_j*DMODE_{ji}$ = sum of load effects from delivery modes j = 2 through 5.

The DMODE variables are binary (dummy) variables, sequenced according to their order in the last table, beginning with the dismount mode (j=2). They are assigned a value of one (zero) if the route is (is not) of the specified mode. They represent the delivery modes in the sequence indicated in the last table starting with the dismount mode (j=2). The (c) coefficients represent the load tallies per possible delivery for the different delivery types. The intercept coefficient ( ) represents the quantity of ES load tallies that are relatively "fixed" on a per route basis on park&loop delivery mode routes (i.e., are not true load time). For the other delivery modes, the relatively "fixed" ES load is represented by the (d) coefficient values acting on the binary variables.

This MPA ES model tests the ES load time estimates in two ways. First, inclusion of the intercept and the modifying dummy variables determines whether the ES load tallies systematically include some relatively "fixed" time per route. If the ES load tallies have been classified correctly, then the regression intercept value and all

(d) values should be close to zero and statistically insignificant. This just validates the common sense expectation that zero possible deliveries should produce zero load time tallies. Second, the per delivery load times from the ES model (converted from the per delivery tally estimates) can be compared to per delivery estimates from the LTV models after the LTV estimates are adjusted to represent average possible delivery time. If the coefficient values for the possible delivery variables are significantly different from the LTV figures, then the comparison may suggest that either (a) the ES load tallies mis-state the true amount of load time at delivery points or (b) the LTV models are no longer representative of the current structure of load activities.

2. MPA Model Results

Coefficient values and the accompanying t statistics for the model are indicated below:

$$
\begin{aligned}
Lt_i = \; & \underset{(9.0575)}{10.4640} + \underset{(7.6483)}{.0233}*RCURB_i + \underset{(5.8359)}{.0168}*RNDCBU_i + \underset{(8.1055)}{.0192}*RCENT_i + \\
& \underset{(2.5421)}{.0074}*ROTHER_i + \underset{(.8080)}{.0289}*BCURB_i + \underset{(.7998)}{.0217}*BNDCBU_i + \\
& \underset{(1.9406)}{.0393}*BCENT_i - \underset{(-1.8094)}{.0111}*BOTHER_i + \underset{(3.0600)}{3.0588}*DMODE_{2i} + \\
& \underset{(.5809)}{.6920}*DMODE_{3i} + \underset{(.4327)}{.4830}*DMODE_{4i} - \underset{(-2.2941)}{9.4355}*DMODE_{5i}
\end{aligned}
$$

$R^2 = .4057.$

All residential possible delivery and the business central delivery coefficients are significant at the 5% level.

Intercept and Dummy Variables

The intercept and the coefficient for the $DMODE_2$ variable for dismount routes are also significant at the 5% level. The positive intercept value suggests that some portion of the ES load tallies is not true load time but, instead, represent some relatively "fixed" ES load time on park & loop routes. The positive coefficient for $DMODE_2$ indicates even more relatively "fixed" ES load time on dismount routes - about 33% more than compared to park&loop routes.[3] The coefficients for the curb and foot delivery mode dummy variables are statistically insignificant, suggesting about the same level of relatively "fixed" ES load time for those types of routes as on park & loop mode routes.[4]

Possible Delivery Coefficients

In order to compare the load time results from this MPA ES model to those of the LTV models, the coefficients for each of the possible delivery types were converted to seconds per delivery estimates (assuming each ES tally is six minutes). The estimates for residential curb and other (foot/loop) deliveries were then averaged to develop a single delivery residential (SDR) delivery estimate for comparison with the LTV SDR model estimate (using current CCS volume data). Similarly, the residential

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3 This could occur, for instance, if the some ES observers assumed that the carrier was at the point of delivery (and in the process of delivery/collect) after he had parked his vehicle for a dismount but had not yet reached the receptacle point. It is very easy to imagine an observer making this interpretation and, as discussed in the text, there are tallies which suggest that this interpretation did occur.

4 The fixed time in this model may not be strictly fixed in the same way as travel time to and from a route. One possible explanation is that ES observers systematically included some run or support time in their load time tallies and there are small variations in the number of actual stops (i.e., accesses) within one delivery mode type. Or, it may due to the inconsistency in the amount of run or support time the ES data collectors included in the observations that were ultimately allocated to load time.

NDCBU/central delivery and business delivery time estimates were averaged to develop multiple delivery residential (MDR) and business and mixed (B&M) delivery estimates for comparison with LTV MDR and B&M model estimates, respectively. The results are indicated below:

Delivery Type[5]	**Seconds/Delivery**
RCURB	8.37
ROTHER	2.66
Weighted Average SDR	5.33
RNDCBU	6.04
RCENT	6.91
Weighted Average MDR	6.50
BCENT/Weighted Average B&M	14.13

The seconds per delivery for the two multiple delivery categories are relatively close as might be expected. There should be little difference in carrier loading activities between these two delivery types. However, residential curb deliveries generally would be expected to have a greater load time than residential "other" deliveries (e.g., loop deliveries) because, unlike loading "other" deliveries, the carrier must stop and start his vehicle at each delivery point before preparing mail for subsequent delivery.

Separately, LTV based estimates for seconds per actual stop were converted to seconds per possible delivery for comparison with the MPA model derived estimates. Witness Baron has provided load time per actual stop figures for the three stop types using the LTV model in combination with CCS volumes per actual stop.[6] The figures derived by Witness Baron under the mean volume and mean load time approaches

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5 The SDR and MDR equivalent values represent possible delivery weighted averages of the seconds per delivery for the corresponding delivery types. Weights were calculated from the numbers of deliveries by type from the 336 ES routes.

6 USPS-T-12, page 21.

were converted to estimates per possible delivery by multiplying the actual stop figures by the actual stop coverages and then dividing these values by the average number of possible deliveries per possible stop.[7] A build-up and comparison of both sets of data are provided below:

	LTV Seconds Per Actual Stop	LTV Seconds Per Possible Stop	LTV Seconds Per Possible Delivery	MPA ES Model Seconds Per Possible Delivery
SDR				
Avg. Volume	8.63	8.02	8.02	5.33
Avg. Load Time	8.41	7.82	7.82	5.33
MDR				
Avg. Volume	61.71	60.09	7.74	6.50
Avg. Load Time	73.44	71.50	9.21	6.50
B&M				
Avg. Volume	19.08	17.16	13.32	14.13
Avg. Load Time	8.35	7.51	5.83	14.13

The SDR and MDR load seconds per delivery are somewhat lower for the MPA ES model. However, in general, the MPA ES model appears to depict load times per possible delivery in a manner comparable to the LTV model. Thus, the significantly higher load time percentages calculated from the ES data compared to the STS percentages, used in the previous rate cases, appear to relate to the relatively "fixed" time identified in the model.

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7 Coverage data are from Meehan base year workpapers (WS 7.0.4.1) and possible delivery per possible stop estimates are CCS data averages by stop type from LR-157.

B. USPS Regression of ES Load Time with Volumes and Possible Stops

1. Summary of Approach

The USPS recently submitted a draft report containing route-level regression analyses of the ES/USPS accrued load time as a function of shape volumes and possible deliveries.[8] The variables were the load tally data contained in USPS LR I-163 for 750 route days plus volume and possible deliveries information for those same route days but derived from other sources. Before conducting regressions, the route tally data were converted to load time estimates by separately identifying total out of office time by ES route day and then applying load tally ratios to those times.

The USPS conducted several regressions. The initial regression specification included several variables designed to test the separate effects of route volumes and possible deliveries on route load times. As indicated in page 7 of the report, these included: route-level shape volumes, the square of these volumes, the product of the paired combinations of the shape volumes (volume interaction terms), route-level possible deliveries, the square of possible deliveries, the product of possible deliveries and each of the shape volumes, and the fraction of total possible deliveries for each delivery type. Although results for this specification were not presented, the report indicated that the regression resulted in low (t) statistics for most variables and low coefficient values for the volume variables.

The problem was allegedly corrected by adding shape-related dummy variables related to high per piece ES load time observations. The report stated that "each such dummy variable was set equal to one for all observations for which the ES load time per piece (by shape, and for accountables) fell within the upper 10% of the

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8 USPS LR I-310, "Draft Report on Load Time Variability Provided in Response to ADVO/USPS-T12-11."

distribution of all observations of ES load time per piece." Statistics for this corrected regression, as presented in Table 3 of the report, show statistically significant (t) values for many of its volume and possible delivery variables. Table 4 presents elasticity estimates for the volume variables that the USPS considered within the range of acceptability. Although the USPS ran other regressions using different ceiling points for the high per piece load times, the USPS preferred regression is the one containing the 10% shape-related dummy variable specification.

2. Assessment of Regression Results and Evidence of Load Time Mis-Classification

Close examination of the Table 3 data for the preferred regression reveals a general consistency with the results achieved from the MPA ES load regression presented in the previous subsection and supports my conclusions derived from the latter. In the USPS model, the intercept variable and the variables that shift the intercept (the shape-related dummy variables and the fractions of total possible deliveries represented by each delivery type) collectively indicate the presence of relatively "fixed" load time per route and therefore load time overstatement. This is true for both normal and high load time observations. In both instances, the estimated load time is positive when all shape volumes are zero because the sum of the intercept and shift variables acting on their respective coefficients is positive. This result is clearly nonsensical at the route level because without volumes to deliver there are no delivery points to be accessed, and therefore there is no load time to be incurred anywhere along the route.

Consider what happens when route volume decreases. A loss of route volume decreases load time because (a) previously covered stops are now uncovered and (b) volume on the remaining covered stops is reduced. For the newly uncovered stops, the previously observed fixed and variable costs are gone since volume on those stops has been entirely eliminated. For the remaining stops, variable costs are

reduced but fixed costs are still incurred. Obviously, if a route's entire volume is eliminated, there is no fixed or variable load time since zero volume means zero covered/actual stops. Thus, it is clear that with per stop scale economies, the route load time-route volume relationship would be described by a positively sloped curve, passing through the origin and exhibiting declining marginal load times.[9]

Unfortunately, the non-volume related coefficient values from the USPS regression do not produce the required zero load time - zero volume result. And these results are not limited to the high per piece load time route days. The USPS's own regression results shows that the incidence of load time overstatement is pervasive to most if not all route days used in their analysis. The relevant coefficient values are reproduced below from Table 3 of LR I-310 for easy reference.

Variable	Coefficient Value
Intercept	-5.597.31
% of PD - Residential Other	6.132.81
% of PD - Residential Curb	9,152.67
% of PD - Residential Central	7,979.13
% of PD - Residential NDCBU	7,430.93
% of PD - Business Other	4,828.31
% of PD - Business Curb	1,692.19
% of PD - Business Curb	10,486.00
Load Time/Letters Dummy	2,777.49
Load Time/Flats Dummy	2,161.75
Load Time/Accountables Dummy	2,292.01
Load Time/Parcels Dummy	1,164.32

9 Note that there is a clear difference between this result and the volume- load time relationship observed at the stop level. At the stop level, the cost-volume curve does have a positive intercept, indicating fixed stop time. Assuming a covered stop remains covered after a drop in route volume, the related drop in stop volume would plot as a less than proportionate decrease in stop load time. Extending the plot to zero volume would indicate a positive intercept value, revealing the fixed stop load time. However, the stop level plot does not capture the fixed load time changes occurring at the same time on other stops that are also uncovered. The changes in all stop fixed load time associated with covering or uncovering stops should be correctly captured in a route level view.

For any normal (non-high load time) route day, zero volume produces a load time explained by the negative intercept value plus a weighted average of the positive percent of P.D. coefficient values for the different delivery types. The weights applied are the fractions of total deliveries by delivery type for that route. Note that all the positive P.D.-related coefficient values for residential delivery types are higher than the intercept in absolute value. Since these delivery types comprise the vast majority of all possible deliveries along routes, zero volumes for any normal route will produce positive load times at zero volume for most if not all of these routes. Of course, for high load time routes the overstatement is accentuated. One, several or all of the positive coefficient values for the shape related dummy variables must be added to the intercept and P.D.-related values to determine the extent of mis-classification for these routes.

3. The Effect of Possible Deliveries

In the report presented in LR I-310, the USPS continued to insist on a possible deliveries effect to be included as part of the load-related volume variable cost estimate. Prior to the ES load time analysis in LR I-310, the deliveries effect had been described as a stop level effect pertaining to MDR and B&M stops described by the LTV models. Now the effect has been elevated to the route level and, by implication, now applies to all stop types including SDR.

Regardless of which models are used, possible delivery elasticities calculated by the USPS should not be included as part of the volume variability calculation. These values are meaningless for use in calculating volume variable costs. Possible deliveries affect system level load time through effects on actual deliveries, independently of volume. Thus, possible deliveries must be recognized in any load time model as a control variable to ensure that the volume-related coefficients that subsequently become part of the volume variability calculation are not biased.

CHAIRMAN GLEIMAN: Per your request, those two library references, MPA-LR-6 and 7, will be received into evidence but not transcribed into the record.

[MPA-LR-6 and MPA-LR-7 were received in evidence.]

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

THE WITNESS: Yes.

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

THE WITNESS: Yes, sir.

CHAIRMAN GLEIMAN: That being the case, counsel, if I could enlist your assistance one more time to provide the two copies of the designated written cross examination of Witness Crowder to the court reporter, I'll direct that that material be transcribed into the record and received into evidence.

[Designated Written Cross Examination of Antoinette Crowder was received in evidence and transcribed into the record.]

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, DC 20268-0001

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

DESIGNATION OF WRITTEN CROSS-EXAMINATION
OF MAGAZINE PUBLISHERS OF AMERICA
WITNESS ANTOINETTE CROWDER
(MPA-T-5)

Party	Interrogatories
Newspaper Association of America	NAA/MPA-T5-1-4, 6-9 OCA/MPA-T5-2-5, 7-8 UPS/MPA-T5-1 USPS/MPA-T5-4, 6-18, 20-22, 30-31
United States Postal Service	USPS/MPA-T5-1-35

Respectfully submitted,

Margaret P. Crenshaw

Margaret P. Crenshaw
Secretary

INTERROGATORY RESPONSES OF
MAGAZINE PUBLISHERS OF AMERICA
WITNESS ANTOINETTE CROWDER (T-5)
DESIGNATED AS WRITTEN CROSS-EXAMINATION

Interrogatory	Designating Parties
NAA/MPA-T5-1	NAA
NAA/MPA-T5-2	NAA
NAA/MPA-T5-3	NAA
NAA/MPA-T5-4	NAA
NAA/MPA-T5-6	NAA
NAA/MPA-T5-7	NAA
NAA/MPA-T5-8	NAA
NAA/MPA-T5-9	NAA
OCA/MPA-T5-2	NAA
OCA/MPA-T5-3	NAA
OCA/MPA-T5-4	NAA
OCA/MPA-T5-5	NAA
OCA/MPA-T5-7	NAA
OCA/MPA-T5-8	NAA
UPS/MPA-T5-1	NAA
USPS/MPA-T5-1	USPS
USPS/MPA-T5-2	USPS
USPS/MPA-T5-3	USPS
USPS/MPA-T5-4	NAA, USPS
USPS/MPA-T5-5	USPS
USPS/MPA-T5-6	NAA, USPS
USPS/MPA-T5-7	NAA, USPS
USPS/MPA-T5-8	NAA, USPS
USPS/MPA-T5-9	NAA, USPS
USPS/MPA-T5-10	NAA, USPS
USPS/MPA-T5-11	NAA, USPS
USPS/MPA-T5-12	NAA, USPS
USPS/MPA-T5-13	NAA, USPS
USPS/MPA-T5-14	NAA, USPS
USPS/MPA-T5-15	NAA, USPS
USPS/MPA-T5-16	NAA, USPS
USPS/MPA-T5-17	NAA, USPS
USPS/MPA-T5-18	NAA, USPS

USPS/MPA-T5-19	USPS
USPS/MPA-T5-20	NAA, USPS
USPS/MPA-T5-21	NAA, USPS
USPS/MPA-T5-22	NAA, USPS
USPS/MPA-T5-23	USPS
USPS/MPA-T5-24	USPS
USPS/MPA-T5-25	USPS
USPS/MPA-T5-26	USPS
USPS/MPA-T5-27	USPS
USPS/MPA-T5-28	USPS
USPS/MPA-T5-29	USPS
USPS/MPA-T5-30	NAA, USPS
USPS/MPA-T5-31	NAA, USPS
USPS/MPA-T5-32	USPS
USPS/MPA-T5-33	USPS
USPS/MPA-T5-34	USPS
USPS/MPA-T5-35	USPS

NAA/MPA-T5-1. Please refer to your testimony at page 14, lines 19-21, where you state "[t]his confusion over 'point of delivery' is evident in tallies Mr. Raymond assigned to load that show the carrier's activity as walking or traveling between deliveries while supposedly at the 'point of delivery.'"

a. Please state the total number of such allegedly misassigned tallies.

b. Please provide, in electronic format, these tallies identified by route and individual scan.

RESPONSE:

a. and b. I have not made these analyses as specified, however, the tallies can be found in USPS LR I-163 and I-281; and examples can be found in Mr. Raymond's responses to MPA/USPS-T13-96 and 123. There are a number of tallies assigned to Load Time which have activity or activity detail codes which indicate walking or traveling between deliveries and apparently are not actually at "point of delivery" as defined by Mr. Raymond to mean: "The carrier had finished accessing/traveling to and was located at the point of delivery." The following is a listing:

For Point of Delivery Location tallies assigned to Load Time:

Activity Codes:
Finger @ Delivery (LLV detail and Dismount delivery type)
Travel b/t Delivery (LLV detail)
Parcel (walk flat detail)
Travel b/t Delivery (walk flat detail)
Travel b/t Delivery w/sort (walk flat detail)
Accountable (walking detail)
Travel b/t Delivery (#1 Box detail)
Walking (Central Inside detail)
Delivery/Collection (walking detail)
Walking (Central Outside detail)
Walking (walk flat detail)
No Access to Box (parking unavailable detail)
No Access to Box (#1 Box detail)
Travel b/t Delivery (Central Outside)
Finger @ Delivery (LLV detail for Dismount delivery type)
Accountable (walk flat detail)
No Access to Box (N/A detail)
Travel b/t Delivery (1 Hand Slam detail)
Hardship (LLV detail for Dismount delivery type)

No Access to Box (Central Inside detail)
Parcel (walking detail)
Travel b/t Delivery (Walk obstructed detail)
Travel b/t Delivery (Drop to customer detail)
No Access to Box (Multiple box type detail)
Delivery/Collect (LLV detail for Dismount delivery type)
Return to Unit (LLV detail)

For On Route Location tallies assigned to Load Time:

Activity Code: Delivery/Collection (walking detail)
Accountable (walk flat detail)
Finger @ Delivery (walk flat detail)
Parcel (walk flat detail)
Walking (walk flat detail)
Delivery/Collection (walk flat detail)

For Vehicle or Park Point Location tallies assigned to Load Time:

Activity Code: Finger @ Delivery (LLV detail for Central delivery type)
Delivery/Collection (various detail codes for Dismount delivery type)
Delivery/Collection (for various detail codes for Park & Loop delivery type)

The significance of these tallies goes beyond their number. Walking or traveling between deliveries are activities that are clearly inconsistent with load and are particularly inconsistent with Mr. Raymond's definition of the "Point of Delivery" location. For the "Point of Delivery" location tallies, these are clear examples that data collectors construed the terms "Point of Delivery," "Delivery/Collection," and "Finger at Delivery," in a broad manner that goes beyond the true load time definition. In many other instances, I suspect that this kind of activity is masked by the overuse of receptacle codes, as discussed in my testimony.

Despite this clear inconsistency, in response to MPA/USPS-T13-123(aa)-(mm), Mr. Raymond persists in assigning these types of "Point of Delivery" tallies to Load Time, with curt statements that "The activity of 'Travel B/t Dlvr' is ignored" or "The activity of walking is ignored."

The same problem occurs for load tallies with an "On Route," "Vehicle," or "Park Point" location and activity or activity detail codes indicating travel between delivery or walking. Mr. Raymond classified such tallies as Load Time even though other tally information (such as a dismount or inside delivery type, or an LLV vehicle code or "Travel B/t Delivery" code) is inconsistent with true load activity. In his response to MPA/USPS-T13-123(oo)-(tt), he simply "ignores" the other codes associated with "Vehicle" location tallies and presumes that a "Del/Coll" code is correct and controlling even when the other codes conflict with this conclusion. (In response to MPA/USPS-T13-123(d)-(r), he does admit that some, but not all, of the "On Route" tallies were mis-allocated to Load Time.) In essence, he presumed that a "Delivery/Collect" code is correct and controlling even when other information conflicts with this conclusion. These tallies again are evidence that data collectors construed "Delivery/Collect" in a manner broader than the true load definition, a problem that may extend to many of the seemingly unambiguous but numerous "Point of Delivery," "Vehicle," and "Delivery/Collect" tallies that are associated with mail receptacle activity detail codes.

The larger unquantifiable problem, of course, is the extent to which these kinds of non-load activities were ignored or overlooked by the data collectors in recording activities near the delivery point as being at the delivery point, with the "Delivery/ Collect" and receptacle code entries masking the true activity.

NAA/MPA-T5-2. Please refer to your testimony at page 14, footnote 9, where you state "[a]nother example are point of delivery tallies for dismount deliveries with an LLV (vehicle) activity which he assigned to load."

a. Please state the total number of such allegedly misassigned tallies.

b. Please provide, in electronic format, these tallies identified by route and individual scan.

RESPONSE:

I have not made these analyses as specified, however, the tallies can be found in USPS LR I-163 and I-281, and examples can be found in Mr. Raymond's response to MPA/USPS-T13-123. Please also see my response to NAA/MPA-T5-1.

The LLV vehicle code means that the carrier is presumably in his vehicle, inconsistent with his being at the "point of delivery" on a dismount which by definition requires that the carrier dismount the vehicle to make a delivery. Mr. Raymond simply ignores the LLV code, as well as other information such as "Travel B/t Delivery" codes, that are plainly inconsistent with true load activity. See, e.g., his response to MPA/USPS-T13-123(gg). In essence, he presumes that a "Point of Delivery" location tally is correct and controlling even when other information conflicts with this conclusion. These tallies again are evidence that data collectors construed "Point of Delivery" in a manner broader than the true load definition, a problem that I believe extends as well to many of the seemingly unambiguous "Point of Delivery" tallies.

NAA/MPA-T5-3. Please refer to your testimony at page 15, lines 7-8, where you state that "he assigned a number of 'on route' tallies to load."

a. Please state the total number of such allegedly misassigned tallies.

b. Please provide, in electronic format, these tallies identified by route and individual scan.

RESPONSE:

I have not made these analyses as specified, however, the tallies can be found in USPS LR I-163 and I-281, and examples can be found in Mr. Raymond's response to MPA/USPS-T13-123. Please also see my response to NAA/MPA-T5-1.

Mr. Raymond assumes, for example, that tallies with an "On Route" location and a "Del/Coll" activity mean that the carrier is really "at a delivery point." Response to MPA/USPS-T13-123(e). Yet he defined "On Route" to mean that the "carrier is not at another listed location" (Response to MPA/USPS-T13-39), meaning that the carrier is *not* at the point of delivery. In essence, he presumes that a "Del/Coll" activity tally is correct and controlling even when other information conflicts with this conclusion. These tallies again are evidence that data collectors construed "Del/Coll" in a manner broader than the true load definition, a problem that I believe extends as well to many of the seemingly unambiguous "Del/Coll" tallies.

NAA/MPA-T5-4. Please refer to your testimony at page 15, lines 8-9, where you state that "[l]ikewise, the location of the 'vehicle' overlaps with other locations, such as 'point of delivery,' on curbline deliveries."

a. Please state the total number of such allegedly overlapping tallies.

b. Please provide, in electronic format, these tallies identified by route and individual scan.

RESPONSE:

I have not made these analyses. There are sixteen location codes listed in Appendix D of USPS-T-13. Of those, it appears that the Vehicle location could overlap all but "In Unit Walking" and "Wait When Walking." These location codes can be found in USPS LR I-153 and I-281.

Tallies with the following Location Codes were assigned to Load Time:

Location Code:
In Vehicle at Stop (Curb delivery code)
Miscellaneous (Curb and Dismount delivery codes)
N/A (N/A and Central delivery code)
On Route (all delivery codes except N/A)
Other Route (Curb delivery code)
Park Point (Park & Loop delivery code)
Point of Delivery (all delivery codes except N/A)
Vehicle (all delivery codes except N/A)

Mr. Raymond assumes, for example, that tallies with a "Vehicle" location and a "Del/Coll" activity mean that the carrier is really "at a delivery point." Response to MPA/USPS-T13-123(oo-tt). Yet he classifies all such tallies as Load even though in some cases the other tally information (such as a dismount or inside delivery type, or an LLV vehicle code or "Travel B/t Delivery" code) is inconsistent with true load activity. He "ignores" these codes that contradict load. In essence, he presumes that a "Del/Coll" activity tally is correct and controlling even when other information conflicts with this conclusion. These tallies again are evidence that data collectors construed "Del/Coll" in a manner broader than the true load definition, a problem that I believe

extends as well to many of the seemingly unambiguous "Del/Coll" tallies that indicate a "Vehicle" location. Please also see my response to NAA/MPA-T5-1.

NAA/MPA-T5-6. Please refer to your testimony at page 18, lines 13-15, where you state "[i]n some cases, however, he admitted that he needed to reference the data collector comments log or the USPS Form 3999X. But, in most cases, I suspect even referring back to those items cannot be sufficient." Please provide the basis for this assertion.

RESPONSE:

Please see USPS Expedited Opposition of USPS to MPA Motion to Compel Answers to Interrogatories MPA/USPS-T13-83, 85-90, 93-94, 96-97, 100-101, 106 & 108 to Witness Raymond. For example, see also Mr. Raymond's response to POIR No. 8, his responses to UPS/USPS-T13-7 and 8 (and his response to followups on those UPS questions in ADVO/USPS-T13-145), and ADVO/USPS/T13-124 and 142.

Separately, as part of the videotape analysis, I reviewed the data collector comments logs and Forms 3999X associated with the videos that we watched. From those, I have a general understanding of the information in those records and how in some instances they can be useful in explaining specific ES tallies. In most instances, however, that information provides no assistance in interpreting a tally, or in determining whether the tally correctly recorded the carrier's activity.

NAA/MPA-T5-7. Please refer to your testimony at page 23, lines 20-21, continued through page 24, lines 1-2, where you state "[i]n short, independent review and validation of a study requires an assessment of both the excluded data and the reasons for their exclusion. This has not been possible due to the extreme lateness of the disclosure of these problems and the inadequacy of Raymond's explanations." Please explain why Mr. Raymond's explanations are inadequate.

RESPONSE:

First, without discovery, neither Mr. Raymond or Mr. Baron would have disclosed that there were excluded data. We were initially told that no route days had been purged (Response to ADVO/USPS-T13-16). Only by analysis of responses to unrelated interrogatories (concerning identification of data collectors by route) were we able to determine that there might be a mismatch between the route days in LR-I-163 and total observed route days.

Second, Mr. Raymond's explanations of why the data were excluded from LR I-163 do not completely comport with the fact that, in response to ADVO/USPS-T13-23(b) (USPS LR I-292), he has supplied statistical comparisons between the routes which he calls "random" and those which he calls "Postal Service selected." These comparisons include more than the 340 routes and 845 days of ES data included in USPS LR I-163 (LR I-292 appears to include data from 1020 routes). And, these comparisons apparently are the basis for Mr. Raymond's assertions that: "Based on the comparison of the data we collected from the random routes to the Postal Service selected routes we feel the all data should be considered as random and representative of the population." (Responses to OCA/USPS-T13-1(b) and ADVO/USPS-T13-54) See also responses to OCA/USPS-T13-6 and NAA/USPS-T13-6.

Third, it appears that, for the routes in USPS LR I-163, there are days which apparently were observed (at least they were videotaped and volumes were collected) but were not included in LR I-163. The apparent exclusion of those data was never even identified until late in the discovery process and was never discussed by Mr.

Raymond. The only "explanation" was given in a post-hearing response received after my testimony was filed. There, he identifies a number of route-days that were excluded supposedly because they were "partial route less than 8 hours," "partial scans," or "multiple carriers on route." *See* Response of the United States Postal Service Witness Raymond to Questions Posed at the Hearing, June 7, 2000. But his subsequent post-hearing response shows that many of these route-days ranged from seven to eleven hours long, with from 70 to more than 110 tallies -- substantially longer and with more tallies than some of the route-days that he included in his LR-I-163 dataset. *Compare* Response of the United States Postal Service Witness Raymond to Information Request Made At Hearing, June 14, 2000 *with* Raymond's response to MPA/USPS-T13-56, Tr. 7915-31. We still do not know the criteria by which some shorter route-days (as short as 55 minutes and with only 13 tallies) were included in LR-I-163, while longer route-days (as long as 11:33 hours and up to 119 tallies) were excluded.

Had this information on excluded data been provided at the outset of the case -- as USPS witness Bradley did in his Docket R97-1 testimony analyzing HCSS data (see USPS-T-13 at 46ff, Docket R97-1, discussed in my response to UPS/MPA-T5-1(c)) -- we would have time to assess and test whether Mr. Raymond's still unknown criteria for inclusion or exclusion of data were justifiable, or whether some other criteria would better suit ratemaking costing purposes.

NAA/MPA-T5-8. Please refer to your testimony at page 28, lines 16-17, where you state "I do not believe the ES sample of 340 routes with an unweighted sampling ratio of 0.2% of total Postal Service routes is adequate to fully represent the above conditions. . ." Please provide a sampling ratio, or range of sampling ratios, that you believe would be adequate.

RESPONSE:

I am not sure what sampling ratio you are requesting, but, for purposes of this testimony, I have not estimated any sampling ratios. Sampling ratios depend upon the purpose of the project, the study design, the population involved, and other study considerations. Please refer to the testimony of MPA witness Hay for an explanation of what is involved to design a study and, for that study, determine an appropriate sampling ratio or range of sampling ratios. (MPA-T-4, especially pages 8-12). As he explains, appropriate sampling ratios should be developed prior to the conduct of a study, not during or after it is completed. In any event, because of the non-random and non-representative nature of the ES sample, the sampling ratio is meaningless. An even larger sample, but conducted on the same non-scientific basis, would not overcome this problem.

NAA/MPA-T5-9. Please refer to Appendix B of your testimony at pages 4 through 7, where you report the results of your MPA model.

a. Do you specifications include statistically insignificant variables? If so, please identify which variables are statistically insignificant.

b. If your answer to (a) is in the affirmative, please rerun your model omitting all statistically insignificant variables and provide the results.

RESPONSE:

a. Please see Appendix B, page 4, which shows the coefficient values and t-statistics for the model.

b. The dataset used to run the model is included in MPA-LR-6, we used the Microsoft Excel 97 regression program. (See response to USPS/MPA-T5-28.) I have not run the model omitting all statistically insignificant variables and I have no need to do so. The statistical significance of the intercept and coefficients for two of the dummy variables was all that I needed to see.

As discussed in the testimony, the results from the USPS ES model also confirmed the results in the MPA model.

OCA/MPA-T5-2. Please refer to your testimony at page 5, lines 13 through 16, where you recommend that if the Commission chooses to use the ES data to develop carrier street-time proportions, it should likewise employ the regression equations developed by the Postal Service using these data (i.e., the ES variability model) to estimate load-time volume variability.

(a) Are you recommending that the Commission employ the regression specification and related elasticities exactly as presented in Tables 3 and 4 (pp. 10 and 11) from the Postal Service's LR-I-310? If yes, please explain fully why you believe this particular specification best captures load-time variability if the ES-based allocations are used. If no, please explain what alternative specification of the regression you would employ and why.

(b) Have you conducted any evaluation or diagnostic tests to assess the accuracy and appropriateness of the ES variability model? If yes, please describe these activities in detail and provide the results of your review; please also provide any and all notes, workpapers, spreadsheets, or other written documentation of your evaluation of the ES variability model. If no, why not?

(c) Have you evaluated total accrued load-time predicted by the ES variability model using average FY1998 CCS values for the volume terms? If yes, please provide the results of that evaluation. If no, why not?

(d) Have you estimated load-time elasticities from the ES variability model using average FY1998 CCS values for the volume terms? If yes, please provide these elasticity estimates.

(e) Do you agree that, if the ES variability model is employed for ratemaking purposes, the load time elasticities should be calculated using up-to-date volume information? Please explain your answer, yes or no.

(f) Please confirm that the ES dataset does not include data on mail volumes collected at a stop or along an entire route? If confirmed, do you agree that the ES variability model likely understates load time volume variability given that the LTV regressions yield a positive elasticity of load time with respect to collected volume? Please explain your answer fully.

RESPONSE:

(a) As stated in response to OCA/MPA-T5-1(b): I do recommend that, if the Commission uses the ES data for out-of-office time proportions, then, for consistency, it should also use the USPS preferred ES load time volume variability estimate (Response to UPS/USPS-T12-16). As explained in my

testimony, I disagree with the USPS concept of attributing to volume any load-time effect derived from possible deliveries in the ES model.

I have not investigated the USPS ES model(s) thoroughly nor have I had any time to consider alternative specifications. My reason for the above recommendation is simply that the USPS ES load time model is developed from the same dataset used to calculate city carrier street time proportions. As such, it is not subject to the distortions in volume-variable cost measurement that result when different data bases are used to measure accrued costs and volume variabilities. Please see also my response to USPS/MPA-T5-4 and my testimony in R87-1 JP-NOI-1.

(b) Please see response to (a) above.

(c) No, I have not had time.

(d) No, I have not had time.

(e) Yes. However, the current CCS volume data are by stop type and would need to be converted to the appropriate average route volume measures to calculate the shape-related variabilities.

(f) Confirmed that the ES dataset does not include data on collected mail volume. However, that does not necessarily mean that total volume variability is understated. It is likely that the variability associated with collected mail volume is being picked up by that for delivered volume.

OCA/MPA-T5-3. Please refer to your testimony at page 28.

(a) Please confirm that the sample design and actual sample of routes from the 1986 Street Time Sampling (STS) survey appropriately account for the six route/carrier characteristics (at lines 7 through 15) that you argue are critical to generating accurate street-time proportions. If not confirmed, please identify how the STS sample design and resulting sample fail to meet these criteria.

(b) Were the sampled routes in the STS study selected entirely at random?

(c) Please confirm that the sample design and the actual sample of routes from the 1985 LTV study appropriately account for the six route/carrier characteristics (at lines 7 through 15) that you argue are critical to generating accurate street-time proportions. If not confirmed, please identify how the LTV sample design and resulting sample fail to meet these criteria.

(d) Were the sampled routes in the LTV study selected entirely at random?

(e) Please provide the unweighted sampling ratio of the STS sample of routes relative to total Postal Service routes.

(f) Please provide the unweighted sampling ratio of the LTV sample of routes relative to total Postal Service routes.

RESPONSE:

(a)-(f)

In this rate case, I have not investigated either the LTV or STS study. They have been investigated thoroughly over the time they have been used and the Commission has deemed them fit for use ever since they were first proposed in R87-1. As there were several parties interested in those two studies when they were first proposed, there should be a thorough record on them in the R87-1 transcripts.

However, in R87-1, I did participate in some analysis of the LTV study but I was only one of several individuals reviewing that study.

OCA/MPA-T5-4. Please confirm that in the STS study, the carriers self-reported their activities after being paged at three different times along a sampled route.

(a) If not confirmed, please describe how the data were collected in the STS study.

(b) Assuming the above is confirmed, were the carriers on STS sampled routes given thorough orientation classes, written instructions, and definitions of terms about how to interpret and record their work sampling observations?

(1) If yes, please describe these training activities and materials.

(2) Did one individual act as the common instructor for all the data collectors participating in the STS?

(c) Did you investigate whether the STS database used to generate the street-time proportions excluded any data collected during the actual study? If yes, what were the results of your investigation.? If no, why not?

RESPONSE:

(a) Confirmed.

(b) The carriers were not trained as data collectors. However, my recall is that:

- The test was designed to accommodate the use of carrier reporting, and
- The carriers were thoroughly informed prior to their test and fully debriefed after their test by trained data technicians.

I cannot recall beyond that.

(c) In this rate case, I have not investigated the STS study. It has been investigated thoroughly over the time it has been used and the Commission has deemed it fit for use ever since it was first proposed in R87-1. As there were several parties interested in the STS study when it was first proposed, there should be a thorough record on it in the R87-1 transcripts.

OCA/MPA-T5-5. Concerning the development and implementation of the 1985 LTV study:

(a) Did you investigate the rate of turnover of data collectors that participated in this study? If yes, what were the results of your investigation? If no, why not?

(b) Did you investigate the training regimen given to data collectors in this study? If yes, what were the results of your investigation? If no, why not?

(c) Did you investigate whether the LTV database used to generate the LTV regressions excluded any data collected during the actual study? If yes, what were the results of your investigation? If no, why not?

RESPONSE:

(a)-(c)

In this rate case, I have not investigated the LTV study. It has been investigated thoroughly over the time it has been used and the Commission has deemed it fit for use ever since it was first proposed in R87-1. As there were several parties interested in the LTV study when it was first proposed, there should be a thorough record on it in the R87-1 transcripts.

However, in R87-1, I did participate in some analysis of the LTV study but I was only one of several individuals reviewing that study. I recall that LTV data processing and quality was an issue in that case.

OCA/MPA-T5-7. Are average total load-time and load-time volume variability likely to differ significantly between residential loop and residential curb route types? Please explain your answer fully.

RESPONSE:

I have not examined that issue.

OCA/MPA-T5-8. In Section IV of your testimony (pp. 34 through 40), you argue that operational changes alone cannot explain the differences in street-time proportions between the STS and ES studies. By inference, are you indicating that the 1986 STS study yields more accurate street-time percentages than does the ES study? Please explain your answer fully.

RESPONSE:

I was making no inferences other than what I described in testimony. I find it difficult to believe that the entire system of city letter routes could have changed that substantially since 1986. And, the USPS has not provided convincing evidence that the so-called "changes" are not in large part due to (1) the ES sample bias and (2) the way in which the ES data collectors recorded tallies and Mr. Raymond then allocated those tallies among STS categories.

UPS/MPA-T5-1.
(a) Confirm that your evaluation of Mr. Raymond's work is performed in comparison to the Postal Service's 1986 Street Time Survey (STS). That is, if the Commission follows your advice to "reject the use of the ES data for ratemaking purposes" (MPA-T-5, page 5) the only alternative will be to use the 1986 STS data in its place.
(b) Confirm that the 1986 STS data do not necessarily accurately represent BY1998 city carrier costs, nor is it necessarily more accurate than ES.

RESPONSE:

(a) Only partially confirmed. I would categorize my testimony as a "due diligence" analysis on the USPS support for the ES activity sampling proportions of accrued out-of-office time, and their use with the LTV, FAT, and CAT variabilities. I cannot begin to completely explain all the problems with the ES results or all the data and analyses that have been presented by the Postal Service, but, when all of it is reviewed together, the evidence does not support the results, and instead indicates that the results include an excessive amount of load time.

Accordingly, the Postal Rate Commission is faced with choosing among three alternatives:

(1) Use of an old, previously-determined reliable set of time proportions that are relatively consistent with the USPS proposed variabilities;

(2) Use of a new but clearly biased set of time proportions with the USPS proposed variabilities, when the latter are clearly inconsistent with the new proportions; or

(3) Use of a new but clearly biased set of time proportions with a load time variability derived from the ES data that is consistent with the new load time proportions.

None of these choices is completely satisfactory. My first recommendation is to use the STS set of time proportions with the LTV variabilities, for two reasons:

(1) PRC acceptance of the biased ES proportions would likely create a disincentive for the Postal Service to provide anything better for the future, when better analysis and data are clearly needed and should be undertaken. This would "lock in" to the costing system an erroneous set of time proportions that would skew costs for perhaps the next ten years or even much longer.

(2) The results from the ES data are biased and inconsistent with some if not all of the USPS associated variabilities, and the consequent disruption among subclass cost/rate relationships caused by their use is too high a price to pay simply to replace "old" data with "new" data.

My alternate recommendation is that if the Commission decides to use the ES activity sampling time proportions, then it should also use the preferred load time variability developed from the ES load time data. Otherwise, the overstatement of load time in the ES data would be compounded and would result in a substantial overstatement of true variable load time costs. I have explained these reasons in my testimony (pages 4, 45-46) and in response to USPS/MPA-T5-4.

(b) Confirmed. Please see my response to (a) above.

USPS/MPA-T5-1. Please refer to your testimony at page 48, line 3-6. You state that:

> When volume on a route increases and there is less than 100% delivery coverage on the stop, then some of the volume goes to newly covered stops/deliveries (causing whatever fixed stop/delivery time is appropriate) and average volume for all covered stops/deliveries on the route decreases.

In what sense is the fixed stop/delivery time that you mention "fixed"? For example, is it fixed with respect to a specific variable, such as volume? Is it fixed in the much stricter sense that it is the exact same amount of time at every newly covered stop or delivery point, regardless of whether that new stop or delivery point is a curbside, centralized, walk-up location, etc., and regardless of container and receptacle type? Please explain fully.

RESPONSE:

The fixed time to which I refer is fixed per stop. Assuming a stop must be accessed or covered, then fixed time is the portion of time at that covered stop which does not vary with stop volume. Although not associated with volume, I do not mean to imply that it is a constant value from stop to stop, regardless of stop characteristics. Fixed stop time will vary according to stop workload characteristics and even within groups of stops where combinations of characteristics are constant, fixed stop time will vary for other unexplained reasons. As with any random variable, the proper measure for fixed stop time is its expected value, or average of values from a data set if the individual fixed stop times can be properly isolated.

USPS/MPA-T5-2. Please refer to your testimony at Appendix B, pages 9-10, including footnote on page 10.

(a) Refer in particular to your statement at Appendix B, page 9 that the positive load time at zero volumes estimated by the route-level regressions "is clearly nonsensical at the route level..." Is it your contention that it makes sense for significant fixed load time to exist at an individual covered stop, but that it is "nonsensical" for fixed load time to exist at a group of covered stops that make up a section of a route or an entire route? Please explain fully.

(b) In Appendix B, page 10, footnote 9, you state: "At the stop level, the cost-volume curve does have a positive intercept, indicating fixed stop time."

(1) Is this "fixed stop time" true load time, or should it be allocated to a different (non-load) out-of-office component? If it should be allocated to a different (non-load) out-of-office component, which component and why?

(2) Is this "fixed stop time" coverage-related load time? Please explain fully.

(3) How would you measure the volume-variability, if any, of this "fixed stop time?"
Please explain fully.

(c) Consider the definition of coverage-related load time as the residual of total load time at a stop minus elemental load time at that stop. Is coverage-related load time, based on this definition, the same as the "fixed stop time" that you refer to in the portion of Appendix B, page 10, footnote 9 that is quoted in interrogatory 3(b) above? Please explain full why or why not.

RESPONSE:

(a) As long as stops require access for mail delivery, if non-volume variable stop load time activities exist, then I would expect to observe fixed stop load time at each covered stop. The portion of total load time for all these covered stops that can be categorized as non-volume variable or fixed is the summation of the individual fixed stop load times. Now assume for the moment that the collection of covered stops define a route. Then we have a route with 100 percent coverage; and it is clearly non-sensical to believe that if all volume on that route is eliminated, there will be any fixed

stop load time remaining. The simple reason is that at zero route volume, all fixed stop load time must be eliminated because there are no covered stops.

Mathematically, the demonstration is straightforward. Assume a constant per stop marginal load time (u), fixed stop time (f), route volume (V), route actual stops (AS), and route possible stops (PS). Total load time on the route can then be explained by:

$$L = V * u + AS(V, PS) * f, \quad (1)$$

where $V * u$ is the sum of stop level variable load time, AS(V, PS) is actual or covered stops explained as a function of V and PS, and $AS(V, PS) * f$ is the sum of stop level fixed load times. If V = 0, then 0 = AS(0, PS) and we have:

$$L = 0 * u + 0 * f$$
$$= 0.$$

Zero route volume must produce zero route load time. The 0 = AS(0, PS) result is clear from the Service's own exponential coverage-related function $AS = [1 - e^{r(V/PS)}] * PS$. Substituting V = 0 in the formula gives:

$$AS = (1 - e^{0}) * PS$$
$$= (1 - 1)*PS$$
$$= 0.$$

In addition to passing through the origin, I mentioned in my testimony that the route load time-volume curve is curvilinear, exhibiting declining marginal costs. To show this, use

$L = V * u + [1 - e^{r(V/PS)}] * PS * f$ to indicate route level marginal load cost as:

$$dL/dV = u - (r/PS)*e^{r(V/PS)} * PS * f$$
$$= u - e^{r(V/PS)} * r * f.$$
$$> 0,$$

since $r < 0$. The expression shows route level marginal load time as the sum of two components: (1) unit piece handling and loading costs at the delivery point (u); and

(2) the marginal increase in fixed stop time caused by part of volume gains going to new stops ($-e^{r\,(V/PS)} * r * f$). As route coverage becomes higher (more stops are covered), the effect from this second term decreases because volume gains become increasingly diverted to existing stops.[1] Differentiating the marginal cost expression again gives:

$$d^2L/dV^2 = -e^{r\,(V/PS)} * r^2 * f/PS < 0,$$

indicating declining route level marginal load costs. The source of the decrease is the lower incidence of actual stops (and fixed stop time) creation as route volume increases.

---

1 From $AS = [1 - e^{r(V/PS)}]*PS$, then $e^{r(V/PS)} = 1 - AS/PS$. Then substitute into $u - e^{r(V/PS)} * r * f$ to get $dL/dV = u - (1-AS/PS) * r * f$. As route coverage AS/PS increases, the coverage-related effect on marginal load time, $-(1-AS/PS) * r * f$, decreases. At 100 percent coverage, the term is zero and marginal load time is fully explained as the stops level effect u.

(b) Please see my explanation of "true load time" in response to USPS/MPA-T5-4.

(1) Fixed stop load time is a component of route load time as I show in (1) above.

(2) Fixed stop load time might explain part or all of coverage-related load time.

I described a particular example of the coverage-related effect above, where unit handling and loading costs (u) are constant. With constant unit handling and loading costs, a component of the total load time increase from added route volume is greater stop-level fixed time as more stops are accessed for delivery. However, changes in the number of covered stops can also affect unit handling and loading costs (u). In particular, if there are scale effects in the variable portion of route load time (all load time costs less the sum of the fixed amounts for all route stops), then concentration of route volume in a lower number of actual stops lowers (u) and a dispersion of the same route volume over a higher number of stops increases (u). When variable load time scale effects exist, total route load time will be affected by three factors: (1) route volume, (2) stop level fixed load time which varies with actual stops, and (3) unit piece handling and load time (u) which is also affected by route actual stops and by volume because of the variable scale effects.

(3) To evaluate volume-variability of the route-level load time function, indicate unit piece costs as the function u[V, AS(V, PS)] and then rewrite (1) into the more general expression:

$$L(V, PS) = V * u[V, AS(V, PS)] + AS(V, PS) * f,$$

where $\partial u/\partial V < 0$ with scale economies in variable load time and $\partial u/\partial AS > 0$ because of loss of these scale effects when route actual stops increase. Total marginal costs with respect to volume are then:

$$L_V(V, PS) = u + V * [\partial u/\partial V + (\partial u/\partial AS)*(\partial AS/\partial V)] + (\partial AS/\partial V) * f.$$

$$= u + V * \partial u/\partial V + (\partial AS/\partial V)*(V * \partial u/\partial AS + f). \quad (2)$$

Total marginal costs are shown as the sum of the increase in route variable load time $u + V \bullet [(\partial u/\partial V + (\partial u/\partial AS)^*(\partial AS/\partial V)]$ and the additional fixed stop time caused by a unit volume increase $(\partial AS/\partial V) \bullet f$. The variable load time increase is itself the sum of (u), or the increase that would occur if (u) were held constant, and $V \bullet [(\partial u/\partial V) + (\partial u/\partial AS) \bullet (\partial AS/\partial V)]$, the effect from the change in (u) caused by additional route volume and actual stops. This adjustment to (u) requires further explanation.

The marginal effect $\partial u/\partial V < 0$, indicating scale economies in piece handling and loading, signifies that if all route volume increases go to already covered stops, unit costs will decline because each additional piece requires less time to handle and load. In other words, marginal costs for handling pieces at existing stops is declining. On the other hand, if the increase in volume means existing route volume is distributed over a greater number of stops, then $\partial u/\partial AS > 0$, indicating that unit costs increase because of a loss of these scale effects. Normally, volume gains get distributed to both existing and new stops, so that both effects are evident. However if volume increases proportionately more than actual stops on a route (average stop volume on the route increases), then the net effect on (u) from a route volume increase will be negative, implying $\partial u/\partial V + (\partial u/\partial AS)^*\partial AS/\partial V < 0$. In other words, scale effects from part of the volume gain going to existing stops are not completely offset by the remaining portion of the increase going to new stops. As long as average route stop volume increases, there is a net reduction in (u) because of declining marginal costs for handling additional pieces at existing stops.

The coverage-related effect on load time is also modified by the described scale effects. Another way to see the net reduction in (u) that is less than would occur if all volume gains went to existing stops is to recognize the term $V \bullet (\partial u/\partial AS)^*\partial AS/\partial V$ as a component of the coverage-related effect on load time, as indicated by the second expression in (2). The total coverage-related effect is then described by $(\partial AS/\partial V) \bullet f + V \bullet (\partial u/\partial AS)^*\partial AS/\partial V$. The first term $(\partial AS/\partial V) \bullet f$ is the marginal increase

in fixed stop time and the second term $V \bullet (\partial u/\partial AS)^{*}\partial AS/\partial V$ is the marginal increase in route load time caused by a higher (u), relative to the lower value possible if the entire volume increase went to existing stops.

Route-level volume variability is then defined by:

$$L_V(V, PS) \bullet V/L = [u + V^{*}\partial u/\partial V + (\partial AS/\partial V)^{*}(V^{*}\partial u/\partial AS + f)] \bullet V/L,$$

where $(u + V^{*}\partial u/\partial V) \bullet V/L$ is the non-coverage related or elemental load component and $[(\partial AS/\partial V)^{*}(V^{*}\partial u/\partial AS + f)] \bullet V/L$ is the coverage-related component. The right hand side of the expression indicates the disaggregated form which shows the explicit impacts from the three effects I described earlier (from changes in volume, unit costs (u), and fixed stop time). The left hand side is the reduced or consolidated form of the expression which includes these disaggregated effects. It is important to note that the ES regression data used by the USPS only included route level volume and possible stop data so that any proper specification of a regression model that uses these data must be of the functional form L(V, PS). Thus route-level load time variability measured from such a model must be of the reduced form $L_V(V, PS) \bullet V/L$, which must include all volume effects detailed on the right hand side, including all coverage-related effects initiated by the volume changes.

Separately, as I indicated in my testimony, the possible deliveries variable should be included in any route level regression to control for the separate effects of route possible deliveries on route load time. Since significant correlation between route level volume and possible deliveries can be expected, exclusion of this variable from regressions can be expected to artificially increase the sensitivity of load time to volume, thereby biasing the resulting volume variable load time measure. When possible deliveries are included in the regression model, the true direct and indirect effects of volume on load time (the latter taking effect via changes in actual stops/deliveries) can be isolated and included in the volume variable estimate. Under these circumstances, adding a possible deliveries variability to an already calculated

volume variability undermines the very reason for adding the extra variable to the model. This treatment adds back the load time effect which would have been mistakenly considered part of volume variability in regressions which exclude the possible deliveries variable.[2]

(3) Please see my response to (2).

(c) As explained above, fixed stop time is part of coverage-related time, but, if there are any scale economies in variable load cost, then there is an additional component to coverage-related load time which needs to be recognized. This component relates to the loss of these scale effects when part of any volume increase gets distributed to additional stops.

---

2 Assume the correlation function PS(V) and substitute in the reduced function to get L = L[V, PS(V)]. Then L can be estimated as a function of V only in the regression model, but then the separate influence of PS on L would be wrongly attributed to V. Marginal load cost from model coefficients would assume the value of $dL/dV = \partial L/\partial V + (\partial L/\partial PS)^{*}dPS/dV$ and variability would be $(dL/dV) * V/L = (\partial L/\partial V)V/L + [(\partial L/\partial PS) * PS/L] * [(dPS/dV) * V/PS]$. But this is exactly the estimate the Postal Service appears to be proposing in its latest load time analysis. It proposes adding the possible stops/deliveries variability $(\partial L/\partial PS) * PS/L$ (presumably under the assumption that $(dPS/dV) * V/PS = 1$) to the true volume variability, $(\partial L/\partial V)V/L$, that can be calculated from a regression model if possible stops/deliveries is added as a control variable. The USPS appears to confuse causation with correlation in somehow interpreting variations in PS as being "caused" by volume variations. Changes in route possible stops/deliveries are caused by population changes not by volume changes.

USPS/MPA-T5-3. Please refer to your testimony at page 44, line 1 through page 45, line 13. At page 45, lines 4-12, you make the following statements:

> The key point is that the intercept and intercept-related terms in both models represent relatively "fixed" time in the ES load time data (i.e., time that does not vary directly with number of possible deliveries). If the activities encompassed by the ES load time data only included true load time, then the intercept value and the coefficients for the other related terms would be close to zero and statistically insignificant. This result is expected for true load time, since zero possible deliveries should produce zero load time. Thus, this fixed time identified in the regressions should be considered non-load time that belongs in another out-of-office time component.

(a) Please specify the exact models to which you refer. Are the regressions referred to in this statement both the MPA ES regression and the USPS ES regression? Please explain fully.

(b) Are the "possible deliveries" referred to in this statement the deliveries recorded for the possible deliveries variables located on the right-hand side of the MPA ES regression? Please explain fully.

(c) Please refer to footnote 43 on page 44. Please confirm that each deliveries variable defined on the right-hand side of the MPA ES regression for a given delivery type represents the combination of actual deliveries for that delivery type and volume loaded at those actual deliveries. If you do not confirm, please explain fully in what sense each possible deliveries variable operates "as a proxy for volume and actual deliveries."

(d) Please see the last sentence of your statement form page 45, lines 4-12, quoted at the beginning of this interrogatory. Is the "fixed time identified in the regressions"

(1) the time predicted by the regressions at zero possible deliveries,

(2) the time predicted by the regressions at a combination of zero actual deliveries and zero volumes,

(3) neither (1) nor (2), or,

(4) both (1) and (2)? Please explain fully.

(e) Is it your view that the "fixed time identified in the regressions" cannot be load time because it is nonsensical that load time should be incurred on a route that has no actual deliveries and no volume? Please explain fully?

(f) Is it your view that the "fixed time identified in the regressions" cannot be load time because it is nonsensical that load time should be incurred on a route that has zero possible deliveries? Please explain fully.

(g) For what out-of-office time component would you expect to find positive hours on a route that has no actual deliveries and volume? Please explain fully.

(h) For what out-of-office time component would you expect to find positive hours on a route that has no possible deliveries? Please explain fully.

(j) Is the out-of-office time component that you identified in response to part (h) the other out-of-office time component to which you would assign the "fixed time identified in the regressions"? Please explain fully.

(k) Is the out-of-office time component that you identified in response to part (i) the other out-of-office time component to which you would assign the "fixed time identified in the regressions"? Please explain fully.

RESPONSE:

(a) I refer to both the MPA and USPS regression models. Both show that the ES load time estimate includes more than true load time.

(b) No. I assume you mean actual or covered deliveries when you use the term "deliveries recorded for the possible deliveries." The possible delivery variables on the right hand side of the MPA regression should be recognized as what they are exactly – the sum of possible deliveries that are accessed for mail delivery (actual or covered deliveries) and possible deliveries for which no mail is delivered (uncovered deliveries). To my knowledge, actual deliveries are not reported in the ES data base. Since actual deliveries are caused by volume to be delivered, the reported volume variability in the USPS regression model recognizes the direct effect of volume on load time (assuming no changes in actual delivery) and the indirect effect (the change in load time transmitted through the change in actual deliveries, caused by the volume change).

(c) Not confirmed. As indicated above, the possible delivery variables in the ES data base are the sum of accessed and non-accessed delivery points for the corresponding delivery types. I am not sure what you mean by "volume loaded at those actual deliveries." The MPA ES regressions contain no volume data because such data were not filed by the USPS in time to allow their separate analysis and use in MPA regressions. MPA was then limited to using the available possible delivery workload data. However, even with this limitation, it is still possible to use route possible deliveries as a proxy for route volume and actual deliveries because actual deliveries are caused by volume and possible deliveries, as recognized by the USPS in their coverage models, and route volumes and route possible deliveries are correlated.

(d) For the USPS model, "fixed time identified in the regressions" is the time predicted by the regressions at zero volume and zero actual deliveries. Also please see my response to USPS/MPA-T5-2(a). For the MPA model, it is the time predicted at zero possible deliveries. With zero possible deliveries, there can be no delivery volume, actual deliveries or load time.

(e) Yes, without volume, there can be no actual deliveries and therefore there can be no load time.

(f) No. Nowhere in my testimony do I state that there are routes with zero possible deliveries for which load time can be measured, as your question appears to suggest.

(g) If there is no volume to be delivered, I would expect no street hours in any city carrier cost component. In this sense, the presence of fixed time along a carrier's route depends on route volume to be delivered. Once this fixed time or any variable

carrier time is established by the delivery requirement, the potential for mis-classification of carrier activity time exists. This apparently occurred with respect to load tallies as evidenced by both regression model results.

(h) I know of no instance where the USPS creates routes in geographical areas where there are no possible deliveries.

[No (i) interrogatory]

(j) I assume the reference to "part (h)" should be to part (g). See my response to part (g).

(k) I assume the reference to "part (i)" should be to part (h).

This question suggests confusion as to how the MPA model results should be interpreted. Any route load time/route possible deliveries curve should track along a continuum towards the origin and not a fixed positive point on the y intercept line. A positive y intercept for the MPA regression is evidence of that the ES estimate of load time includes more than true load time because there is no portion of load time that can remain fixed as route workload changes. The possible delivery variables that are part of the MPA regression are used as proxy workload variables.

The y intercept values from both the MPA and USPS models indicate that the ES load tallies include more than true load time. True load time varies fully with volume or possible deliveries, when used as a proxy for volume. The fixed time in both models indicate that there is a portion of carrier street time being classified as ES load which does not vary with volume or possible deliveries. Since route level fixed load time does not exist, this time must be some other component of carrier street time that has been included in the ES estimate of load time. Also see my response to part (g).

USPS/MPA-T5-4. On page 2, footnote of your testimony, you state that "true load time" is as defined in the Load Time Variability (LTV) study. Please provide a complete statement of what you understand that definition to be, with all relevant citations to underlying source materials.

RESPONSE:

"True load time," as defined in the Load Time Variability (LTV) study, is described in the Detailed Definitions section of MPA-LR-7. The source for this description is USPS LR E-4 (from R87-1), "Load Time Variability Test Industrial Engineer Test Package," Foster Associates, Inc., Washington, D.C., August 1985.

For ratemaking and cost attribution purposes, the definition of load time is extremely important. The same definition should be applied to development of both (a) accrued load time and (b) the load time model used to evaluate load time volume-variability. Accordingly, since Mr. Baron has used the LTV model to evaluate load time variability, the corresponding definition of accrued load time should match. In order to identify load time as defined by the LTV model, I use the term "true load time.". The ES measure of load time is not consistent with the LTV measure and is, in fact, far greater than the LTV measure. It is, thus, not "true load time."

When there is a mismatch, as occurs between the ES accrued load time estimate and the LTV load time variability estimate, then the variable costs that are developed from those mismatched estimates are completely inaccurate and unreliable. They have no meaning. In this case, the mismatched estimates produce an extremely overstated estimate of variable load time.

For ratemaking/costing purposes, out-of-office costs are separated into six activity categories (Drive, FAT, CAT, Load, Collection, and Support) because each has been determined to vary differently with respect to volume and, as a result, has a different volume variability and variable cost distribution key. Accordingly, in order to correctly develop volume-variable costs, the cost categories should be matched with

their corresponding variability analyses and distribution keys. If they are not properly matched, volume-variable and attributable costs are inaccurate.

Correct matching of accrued cost and variability analysis can be illustrated from USPS LR I-1, Appendix H, where "the consistency between the cost calculations and that conceptual basis [supporting the CRA product costs] is demonstrated." There it states (page H-2):

> The first important CRA cost is unit volume variable cost and it is a measure of the costs caused by a product at the margin. That is, it measures the additional cost associated with the provision of additional output. Specifically, the formula for unit volume variable cost for class i ($UVVC_i$) is:
>
> $$UVVCi = \text{Volume-Variable Cost}_i \ / \ \text{Volume}_i$$
>
> Clearly, unit volume variable cost for class i critically depends upon the calculation of that class's volume variable cost. A class's volume variable cost is found by multiplying the elasticity of cost with respect to the volume of that class [$\varepsilon_{C,i}$] times total cost (C):
>
> $$VVC_i = C \bullet \varepsilon_{C,i}$$
>
> $$\text{where: } \varepsilon_{C,i} = \%\Delta C \ / \ \%\Delta Vi.$$

[Note that $\varepsilon_{C,i}$ can also be expressed as $\partial C/\partial V_i \bullet V_i/C$.]

From this description, It is obvious that cost (C) enters this equation twice: directly as the first element on the left-hand side of the equation first and, indirectly in the second element of the equation, in $\varepsilon_{C,i}$. Cost (C) must match in both elements, otherwise VVCi is incorrect. When cost matches in both elements of the equation, the result becomes:

$$VVC_i = C \bullet \partial C/\partial V_i \bullet V_i/C$$

$$= \partial C/\partial V_i * V_i.$$

This is the correct estimate of subclass volume-variable cost, marginal cost ($\partial C/\partial V_i$) multiplied by current level of subclass volume (V_i).

However, the load time analysis proposed by the USPS (in USPS-T-12) does not provide that correct estimate but, in fact, provides a considerably overstated estimate. This is shown as follows. Let C_{ES} be the load time estimate from the ES data while C_{LTV} is the load time estimate from the LTV model, using current volumes (V_i). Then,

$$VVC_i = C_{ES} * \%\Delta C_{LTV} / \%\Delta V_i ,$$

$$= C_{ES} * \partial C_{LTV}/\partial V_i * V_i/C_{LTV},$$

$$= C_{ES}/C_{LTV} * \partial C_{LTV}/\partial V_i * V_i,$$

While the correct estimate should be $\partial C_{LTV}/\partial V_i * V_i$, the USPS estimate inflates it by a factor of C_{ES}/C_{LTV}, where C_{ES} is substantially greater than C_{LTV}.

Although I have not had opportunity to seriously study the ES load time model presented by Mr. Baron (LR I-310 and response to UPS/USPS-T12-16), it has moderated the overstatement in volume-variable load time.

USPS/MPA-T5-5. On page 6 of your testimony, lines 5 and 6, you indicate that one of the objectives of witness Raymond's Engineered Standards/Delivery Redesign project was "validation of the workload management system." Please explain fully what you mean by "validation of the workload management system." Please also provide the complete basis for your belief that this was an objective, including citations to the testimony of witness Raymond.

RESPONSE:

(1) I simply use the term "validation of the workload management (ing) system" in the same way as Mr. Raymond. Clearly, the work sampling data in LR I-163 (used to develop the STS time proportions in this case) were not used to analyze or validate work methods or the workload managing system. (Response to ADVO/USPS-T13-1) And, since the USPS has been extremely protective of all Engineered Standards project information other than the work standards data, I did not attempt to pin down Mr. Raymond's precise definition of what he means by that term. However, based on Mr. Raymond's testimony, interrogatory responses, statements during technical conferences, and LR I-252, I generally understand that validation of the workload management system can have at least two interpretations:

(a) Identification and initial testing of the preferred methods, time standards, and other factors included within the various aspects of the workload managing system Mr. Raymond's organization has developed for the USPS.

(b) Testing the workload managing system (in one or more of its various permutations) and its application methodology to determine if it is a realistic tool for the USPS to use in managing the workloads of its carriers (both short term and, perhaps also, over the longer term). This latter can be done by implementing a system/process over a period of time and then fully assessing the results from that system.

I believe some validation activities may be continuing at the current time.

(2) On page 5 of USPS-T-13, Mr. Raymond states:

> The objective of the Engineered Standards was to collect actual activities of the city letter carrier and to develop engineered methods and time standards to establish a workload managing system. (Lines 3-5)

> The data collected needed to be comprehensive in order to support in-depth analysis and validation of work methods. (Lines 14-15)

In response to MPA/USPS-T13-8, Mr. Raymond states:

> There were three major areas of focus and they were progressive. . . . The third area of focus was the implementation of the methods, time standards, route adjustment process, workload managing system, and analysis of the results of implementation at four test sites.

See also responses to OCA/USPS-T13-8, NAA/USPS-T13-3, and MPA-T13-9 and, e.g., pages 8 and 26 of LR I-252.

USPS/MPA-T5-6. On page 9, lines 10-12 of your testimony, you state that "time studies interrupted and took precedence over the work sampling." Please provide the complete basis for this statement, including citations to the testimony of witness Raymond.

RESPONSE:

At his technical conference in Merrifield, in response to oral questions, Mr. Raymond explained that when the observers were taking time studies (which could last over several minutes) and a work sampling beep took place, he instructed the observers to make a mental snapshot of the carrier's actions and location when the beep sounded and later enter the codes when the time study permitted. Please also see Mr. Raymond's response to ADVO/USPS-T13-69(c) and (d).

USPS/MPA-T5-7. How many time studies did you and/or your team perform in total? Please identify each time study, including when it was performed, where it was performed, which team members performed the study what functions were performed by each team member for each particular study, and what route number and tape number was being studied. Include any partial studies.

RESPONSE:

I assume that by "time studies" that you mean the videotape analyses described in Section V.A of my testimony. We did not perform any time studies, as the term is used in the ES project.

We viewed 29 routes (but not all days for all routes or even all day for any one route) while at Merrifield. Those 29 routes are the ones for which videotape copies and documentation were requested on April 28th and received between May 19-23. With the exception of tape number (which we did not record), MPA-LR-7 contains all the information requested for the 11 routes which are included in my testimony. Each route was viewed by two observers: observer one worked with a stop watch and timed each "load" or "stop" activity. Observer two recorded all data. Observer two was either LT or AC. All other observers identified were always observer one.

Given the time constraints described in the testimony, full review and study was performed on only 12 routes (the 11 identified in the testimony plus CY02, RT1560, which turned out to have insufficient data for analysis). For these 12 routes, we ran the "time studies" twice, once at Merrifield (for at least some of the route) and once again after we received the videotape copies. Calculational checks, route/date/time and other data checks, and full studies were performed for only these 12 routes. Route/date/time and other data checks were also performed for 3 other routes (identified below).

Accordingly, there were 17 routes which we viewed at Merrifield but did not complete analyses. These are as follows:

CY	Route	Rationale for Not Completing
40	8405*	Not a lot of data

06	2806	Not a lot of data
63	802	Already had completed two CY63 P&L routes with good data
52	1121*	Too complicated and a lot of curbline
48	337	Curbline route
33	1612	Too complicated
63	815*	Already had completed two CY63 P&L routes with good data
17	1928	Not a lot of data
17	1926	Not a lot of data
53	2221	Too complicated
18	2947	Not a lot of data
34	3125	Not a lot of data
18	2912	Not a lot of data
8	1638	Too complicated
53	2212	Too complicated
2	1595	Route day not in LR-163
4	4225	Curbline route

Notes: Too complicated means that the route contained a variety of stop types throughout the day (i.e., dismount, central, business) and/or tape showed a variety of stop types with inadequate resolution of stop vs. interstop times. Asterisk means that data checks were performed on these routes but no analyses.

Data collected for the all 29 routes and preliminary analyses on those data are provided in MPA-LR-8. This contains (a) the excel spreadsheets on which reside the data and analyses, (b) hard copy of the collected data, and (c) MPA observer names and observation dates. These data were prepared by myself (AC) and Lindsay Turpin (LT) from Project Performance Corporation. Complete analyses for the 11 routes presented in testimony are already filed as MPA-LR-7.

Separately, I reviewed the ES time study, Form 3999, and other comparable ES data for each of the 12 routes that we fully analyzed. There was an excel spreadsheet with those time study data and some comparison of that data to the data from the videotapes. However, after it was virtually completed (approximately four days prior to the filing of testimony), it was corrupted and could not be retrieved. Since I had briefly

noted on other excel spreadsheets the summary results of those calculations, I did not attempt to reconstruct that analysis.

USPS/MPA-T5-8. If more time studies were undertaken by you than were identified in your testimony and associated work papers, please provide a detailed explanation as to why these time studies were not included as part of your workpapers and testimony.

RESPONSE:

Please see response to USPS/MPA-T5-7 and page 42 of MPA-T-5. Since I could not use the data collected at Merrifield without careful cleaning and checking and since a team must be available to check the data, I made a determination roughly a week before testimony was due that only a dozen park & loop routes would be completed.

USPS/MPA-T5-9. Please provide all documentation relating to all time studies undertaken by you and/or by your team, including not only those performed at Merrifield, Virginia, but also any time studies performed during later reviews of tapes at locations other than Merrifield, Virginia. Include any partial studies.

RESPONSE:

Please see response to USPS/MPA-T5-7 and MPA-LR-7 and 8.

USPS/MPA-T5-10. Please identify each member of your team, including yourself, by employer, position title, age and occupation. For each team member, list all work experiences, educational experiences, credentials or degrees that would enable them to perform time studies of Postal Service operations. For each team member, please provide a complete description of their prior experiences studying Postal Service operations, including your best estimate of the amount of time each spent studying Postal Service operations prior to viewing the videotapes studied by the team.

RESPONSE:

There were seven members to the MPA videotape team. I am the only one with previous experience in studying Postal Service operational costs and my resume is included in MPA-T-5. The other six individuals were taught by me to recognize the difference between "stop," "other stop," and "inter-stop" time for carriers, as described in MPA-LR-7. As described in MPA-LR-7, we reviewed the descriptions of "stop," "other stop," and "inter-stop" time and practiced examples. Either Ms. Lindsay Turpin or I were part of each two-person team taking data, and, to be available for questions and spot-check the process, I was always present while the tapes were being observed.

Name	Employer	Position	Age	Occupation
C. Casey	Burzio & McLaughlin	Paralegal	23	Paralegal
A. Crowder	TRANSCOMM, Inc.	Consultant	53	Consultant
S. Crowder	TRANSCOMM, Inc.	Contractor	17	High School Student
D. Maddux	TRANSCOMM, Inc.	Office Manager	47	Office Manager
M. Davis	Magazine Publishers Association	Contractor	39	Legal Support
B. Meurrens	Project Performance Corporation	Analyst	27	Consultant
L. Turpin	Project Performance Corporation	Research Assistant	23	Consultant

USPS/MPA-T5-11. Please provide the: make, model, manufacturer, year of manufacturer, serial number and any other available identifying information of the stopwatches or other time-keeping equipment used to take the time studies described in your testimony.

RESPONSE:

We used five stopwatches, all of which were purchased at the same time from the same store. The purchase was made early in April 2000. The name of the watch is the TP Sports No. SW1. The manufacturer is The Dreier Co., Inc., E. Brunswick, NJ., and the watch was made in China.

USPS/MPA-T5-12. Did you test the stopwatches or other timekeeping devices used in your time studies to determine if they were accurate? If so, please provide a complete description and all documentation of the testing process.

RESPONSE:

No. However, as a double-check on the stopwatch times, I occasionally viewed a portion of a tape without a stopwatch, relying on the clock time imprinted on the video (showing the hour, minute, and second) to visually estimate the load time at each delivery to the nearest full second, rounded up. The total load time from the stop watch technique was consistently close to the load time estimated from the video clock technique.

I also note that the videotapes are available for independent analysis by the Postal Service and the Commission.

USPS/MPA-T5-13. Were the stopwatches or other timekeeping devices used in your time studies certified for use in the performance of time studies? If yes, please provide complete documentation of the certification.

RESPONSE:

Not to my knowledge. Also see my response to USPS/MPA-T5-12.

USPS/MPA-T5-14. Please describe all problems encountered during the time study process and the solution implemented to overcome each problem.

RESPONSE:

We encountered two general types of problems: (1) quality issues with the videotaping and (2) occasional questions involving identification or interpretation of the activity being observed. I discuss these in my testimony at page 42 and in MPA-LR-7 at pages 2-3.

As we conducted our data collection, the decision rules were developed to accommodate the videotape conditions. For the routes presented in MPA-LR-7, Ms. Turpin and I applied the following decision rules to accommodate what we were viewing:

-If there was no load time in a particular tape sequence, then that sequence time was not included

- If a tape sequence contained only a partial load activity, then that sequence time was not included

- Within a sequence, all loading and walking was included, even if a beginning or ending portion of a load or walk was cut off

- All load activity was timed within a sequence, even if the time had to be estimated because the carrier was out of sight of the camera

- If the carrier walked out of sight of the camera and could not subsequently tracked, we stopped timing at the moment he disappeared from view

- Any time when the carrier was stopped was recorded as either "other stop" or "stop" (i.e., load) time. As described in MPA-LR-7, it was "stop" time if the carrier was conducting "true" load activities. When the carrier was waiting for traffic or other clearance while walking, that time was generally recorded as "other stop" rather than "inter-stop" .

- If, at the delivery point the carrier stopped initially and then moved and stopped again (i.e., as in moving between two mailboxes at essentially the same stop, or stopping on a porch and then moving to the mailbox), that entire time was recorded as stop (load) time

- Even if not considered "true load", most customer interaction before, after, or during a load was included
- Time at the delivery point incurred while waiting for a customer to respond was included

Conduct with respect to the data analysis is described in MPA-LR-7. The analysis was essentially a comparison of the videotape data to ES data for comparable time periods -- as shown through the ES tallies, Forms 3999X, ES time studies, observer comments, etc.). Because the data varied considerably, the comparisons also varied. I used whatever I had available to make the comparisons. The intent was to match comparable videotape data to ES activity sampling tally data to determine consistency between the two with respect to the ratio of load time to the sum of load plus FAT (i.e., walking) times. When making comparisons, duplicate ES tallies, ES tallies that appeared to involve unusual or non-park & loop/routine dismount activity not recorded on the videotapes, or tallies for portions of the day that were clearly different from those included in the videotape were not used to develop the comparable ES time proportions. Since this was necessarily a judgmental process, a basic decision rule in calculating the ES tally load time was to make conservative choices that would err on the side of reducing the ES tally proportion of load time vs. the sum of load plus FAT time.

USPS/MPA-T5-15. Please provide a complete description of all instructions (including verbal instructions) and training provided to each member of your team. To the extent that you have not already provided them, please provide all written instructions, training materials or other documentation of instructions and/or training given to each team member.

RESPONSE:

See MPA-LR-7. Verbal and written instructions were the same as those shown in the library reference, with the caveat that if anyone had any questions about procedures or what activities to record as load time, they should check with me for specific guidance. I was available at all times to help with any questions. Training occurred before any tapes were observed and, in some cases, training continued during our three days at Merrifield, as we were all getting used to viewing the tapes and recording information. This is one reason why, although I felt somewhat comfortable with the data collected at Merrifield, I believed it would be necessary to review the tapes again and completely re-time them to ensure accuracy and consistency.

USPS/MPA-T5-16. Please provide all work papers and spreadsheets used in the time study process to the extent you have not already done so. In addition, please provide electronic copies of all such work papers and spreadsheets, to the extent such electronic versions were used.

RESPONSE:

See MPA-LR-7 filed with my testimony and MPA-LR-8 filed in response to USPS/MPA-T5-7.

USPS/MPA-T5-17. Please identify all ES study videotapes that were viewed by you and the dates on which you viewed each.

RESPONSE:

See MPA-LR-7 for the ES routes and days for which I was involved as a data collection team member. These are all for observations made at Merrifield. In addition, after MPA received copies of the tapes, I did briefly review several routes to get a "feel" for them. I do not recall the specific dates or routes. But, I have probably viewed in whole or in part all the 11 routes included in MPA-LR-7, many of the original 29 routes, and a few of the other routes that happened to be on the videotapes given to us.

In addition, as a means of checking on observer progress and consistency, I would briefly stop my other activities and view some videotapes from time to time, while other individuals were making observations. Also, when time permitted, I reviewed certain tape segments while conducting my analysis of the data.

Since testimony was filed, I have again briefly reviewed certain taped segments of route-days, to further check for consistency and accuracy. Together with Ms. Turpin, I have reviewed some tapes and data in the past week, to confirm the consistency of application of our decision rules and to check certain notations in our data.

USPS/MPA-T5-18. Prior to performing your time studies, were you aware of the differences between continuous and snapback stopwatch techniques for taking time studies? Pleas explain fully.

RESPONSE:

No

USPS/MPA-T5-19. Please describe in complete detail the techniques you and your team members used to perform the time studies.

RESPONSE:

Please see MPA-LR-7 and responses to MPA/USPS-T5-14 and 15.

USPS/MPA-T5-20. If a carrier travels to a delivery point and opens and closes a box to check for a collectable, do you define any portion of this activity as Load time? Is of, what portion? Explain your answer fully.

RESPONSE:

If a carrier accessed a mail receptacle or approached a customer to take a piece of collectible mail, that time was included in load time. Please see the definitions and instructions in MPA-LR-7.

USPS/MPA-T5-21. If a carrier pauses and/or stops on a route to observe a delivery point, do you define any portion of this activity as Load time? If so, what portion? Explain your answer fully.

RESPONSE:

I am not sure what is meant by a carrier pausing or stopping on a route "to observe a delivery point." Ms. Turpin and I do not recall seeing any such behavior. Please see MPA-LR-7 and response to MPA/USPS-T5-14.

However, we have viewed a carrier who stopped at a delivery point to apparently check as to whether anyone was there. That time was recorded as load ("stop") time. And, in another case, we viewed a carrier who stopped to deliver a parcel, waited for a response from the customer, and then, when no response came, apparently took the parcel to the backside of the house to drop off (he was out of view while at the backside of the house) and then returned to his line of travel. Despite the fact that he was walking some of this time, it was all included as load time (i.e., a non-routine delivery).

Those examples are noted in our data sheets.

USPS/MPA-T5-22. During your review of videotapes, did you note when a tone was heard indicating a work sampling observation should have been made? If so, please provide all such notes and any related documents reflecting the occurrence of such tones. If you did not consistently note such tones, please explain the circumstances under which you did and did not make such notes, and the rationale for taking or not taking such notes.

RESPONSE:

We made no systematic effort to note the scanner beeps. First, we never planned to systematically identify and check the activity sampling beeps, although we were aware of the fact that we may hear some. (I expected that we would be unlikely to hear many beeps on the videotapes, especially on park & loop segments, because the person doing the videotaping would not necessarily be close enough to the person with the scanner to hear the beeps on the tape.) As shown in the data collection materials presented in MPA-LR-7, our focus was on accurately measuring load and foot access time. Second, we found that turning up the volume on the videotapes was distracting (dogs barking, data collectors talking, etc.), especially with two teams making observations in the small room at Merrifield. Third, I was unsure of how synchronized the Videx barcode scanner and the video camera were and I knew that there were delays between when an activity sampling beep took place and when the observation was recorded into the scanner. And, finally, even though it appeared that a few scanner beeps could be heard, I simply did not have any additional time to investigate that approach further.

However, there were a few times when we heard a beep and noted it. I checked these with the ES tally data. In some cases, the beep appeared to be associated with an accurate ES tally and, in some cases, a beep appeared to be associated with an inaccurate ES tally. An example is CY60, Route 1913, on July 5, 1997. There are two apparent beeps on the video tape. The first, at 12:42:37 PM on the videotape clock, occurred precisely as the carrier was making a very quick 2-

second delivery in between long walks, and was correctly scanned at 12:45 PM as a point of delivery tally, assigned to load. The second, eighteen minutes later at 1:00:40 PM on the videotape, occurred after the carrier had walked away from a house, but was incorrectly scanned at 1:03 PM as point of delivery, assigned to load. In other cases, however, the observed and recorded times (and sometimes also the observed and recorded descriptions) were so disparate, that it made me uncertain of what the tones on the videos signified. Accordingly, I was concerned about the possibilities of large time differences between the videotapes and the ES tally data and/or that the beeps may be the result of other ES observer Videx activities.

USPS/MPA-T5-23. Consider the following regression model:

$$Y_i = \beta X_i + \varepsilon_i$$

Please recognize that this is the population regression equation in which β is the parameter estimate which captures the deterministic portion of the relationship between Y and X, not an estimated coefficient. Please also recognize that ε is the stochastic disturbance in the regression model and is not the residual from a least squares regression. This means that if β were known, then for any given value of X_i and ε_i, the corresponding value of Y can be calculated without error.[1]

In this model, Y is the dependent variable, X is the independent variable and ε is a zero mean, constant variance stochastic error term. Let the value of the actual (not estimated) β be equal to 0.45.

a. Confirm that there is no intercept in this model. If you cannot confirm, please provide the analytical expression for the intercept.

b. Confirm that if the value for X were zero, the model would predict a value of zero for Y. If you cannot confirm, please provide what you think is the correct prediction of Y given a value of X of zero and the mathematical formula underlying that prediction.

c. Confirm that β is the actual, not estimated, slope of the regression line and that the slope is equal to 0.45. If you do not confirm, provide what you think is the slope of the regression line and the mathematical formula underlying that slope.

d. You are given the following values for X and ε. Confirm that the actual values of Y generated by this model (with β=0.45) for these values of X and ε are as shown in the following table. If you do not confirm, please provide what you think are the true values for Y given these values for X and ε and the mathematical formula underlying those values.

ε	X	Y
3.0224	122	57.9224
-14.1576	455	190.5924
0.244257	177	79.89426
1.276474	289	131.3265
-12.257	550	235.243
1.733133	113	52.58313

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1 For a further discussion of the population regression equation, see, William H. Greene, Econometric Analysis, Macmillan, 1993 at 143.

-2.18359	399	177.3664
-0.23418	255	114.5158
1.095023	446	201.795
-11.548	337	140.102
6.9887	108	55.5887
2.278	111	52.228
-1.84691	140	61.15309
-0.97763	155	68.77237

e. Confirm that an ordinary least squares regression would (including an intercept) of Y on X (as shown in d., above) would yield the following coefficient and t-statistics (within two decimal places):

	Intercept	β
Estimate	5.913	0.4201
t-statistic	2.409	51.2396

If you do not confirm, please provide what you think the estimated coefficients and t-statistics are and attach regression output supporting your results.

RESPONSE:

a. Confirmed.

b. Confirmed.

c. Confirmed.

d. Not confirmed. The constructed regression from the fourteen observations yields parameter estimates for a different model. The estimates and upper and lower limits at the 95 percent confidence level for the parameter estimates are:

	Intercept	β
Estimate	5.913	0.420
Upper Limit	11.262	0.438
Lower Limit	0.564	0.402

The assumed true values of zero for the intercept and 0.45 for β are outside the confidence bands indicated for both variables. Therefore, we are dealing with a different model. The problem is with the assumed values for Ε in the regressions. The sum of the given Ε values is -26.567, far distant from the true expected value of

zero (the average is -1.898), with which you premised your question. Since the confidence bands around the estimated parameter values exclude your assumed true values, the residuals from the regression must be estimates for true ε values different than the values you have assumed.

To see how changes affect the parameter estimates, I assumed zero ε values for the second and fifth observations instead to produce a revised sum of -.152 (the average is -0.011). I also changed the corresponding Y values only and then ran a regression on the revised data. The coefficient estimates, 95 percent confidence bands and t statistics are as follows:

	Intercept	β
Estimate	2.349	0.441
Upper Limit	7.045	0.457
Lower Limit	-2.347	0.425
t Statistic	1.090	61.290

Note that the t statistic for the intercept requires acceptance of the null hypothesis (zero value). Also the 0.45 true coefficient estimate you assumed is within the confidence band.

e. Confirmed. Also see my response to (d) above.

USPS/MPA-T5-24. Consider a simple route with five SDR stops. Further suppose that the "true" load time (as you define it in footnote 1 on page 2 of your testimony) at a stop is given by:

$$LT = 3 + .5 * V - .0002 * V^2$$

a. Given that each of the 5 stops have the following volume, confirm that the "true" load time at each stop is as shown below. If you do not confirm, please provide what you think the "true" load time for each stop would be and the mathematical formula supporting that calculation.

Stop	Volume	Load Time
1	5	5.450 seconds
2	7	6.402 seconds
3	3	4.482 seconds
4	8	6.872 seconds
5	0	0.000 seconds

b. Please confirm that the total load for the route is 23.206 seconds. If you do not confirm, please provide what you think the route's load time is along with a mathematical formula supporting that conjecture.

c. Now suppose that all of the existing volume stays on the route, but two additional pieces are added. Further suppose that they both go to stop 5, the previously uncovered stop. Confirm that the load time at stop 5 rises to 3.992 seconds. If you do not confirm, please provide what you think that additional load time is along with a mathematical formula supporting that conjecture.

RESPONSE:

a. Confirmed subject to the following stop load time equation:

$$LT = 3 * B + .5 * V - .002 * V^2,$$

where B = 0 when V = 0, and B = 1 when V > 0. The modification is required to show that the incurrence of stop load time is conditional on positive stop volume (i.e., conditional on the need to load/collect at the stop). Also please see my response to USPS/MPA-T5-1(g).

b. Confirmed, subject to the sum of the load times given by the modified stop/ load time equation in a. above.

c. Confirmed. Stop load time for stop 5 rises from zero to 3.992 seconds.

USPS/MPA-T5-25. Please refer to footnote 1 on page 1 of Appendix B to your testimony. There you indicate that you will use, in your regression equation, possible deliveries as a proxy variable for the two missing workload variables, "route volume and number of actual deliveries."

a. Please provide the econometric conditions under which a variable can serve as a effective "proxy" for an omitted variable. Include citations to the econometric literature to justify your statement of conditions.

b. Please provide a list of criteria you use in choosing a particular proxy variable.

c. If the proxy variable is not correlated with the omitted variable, can it serve as an effective proxy variable? Why or why not?

d. Is "possible deliveries" a better proxy for "route volumes" or for the "number of actual deliveries." Why?

e. Would it be feasible to use possible deliveries as a proxy for actual deliveries?

f. Are there any criteria under which a variable could not serve as a proxy variable for an omitted variable?

g. Are the econometric qualities of a regression with an omitted variable affected bythe quality and choice to the proxy variable? If so, please provide the qualities that are affected. If not, please explain why one is not free to use any variable as a proxy variable with no impact on the estimated regression.

RESPONSE:

a. When the available variable is known or expected to be correlated with the missing variables then the available variable can be used as a proxy for the missing data. The relationship between the dependent variable and the proxy variable need not be directly causal. For example, time is often use as a proxy to capture the effects of technology changes on an otherwise static analysis of economic variables.[2] However, no one would claim that changes in time cause changes in the dependent variables, just as no one should claim that changes in possible deliveries cause changes in cost. If a statistically significant relationship between the dependent

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2 See also Pindyck & Rubinfeld, *Econometric Models & Economic Forecasts*, McGraw Hill, 1991, p. 413 - 416.

variable and the proxy variable exists, then the inference should be that there is statistically significant relationship between the dependent variable and the causal variables for which the proxy is used.

b. When one or more of the causal variables are not available, then a proxy variable which is correlated with the missing data can be used.

c. No. The correlation is required in order infer causality between the missing variable and the dependent variable.

d. I did not determine whether possible deliveries was correlated better with volume or actual deliveries in a statistical sense, nor was that necessary to assess the results from the MPA regression model. The important point is that possible deliveries is expected to be correlated with the two causal variables affecting load time a priori. This expectation formed the basis for the regression model form. The expectation was effectively evidenced with the statistically significant load time coefficients for the possible delivery variables.

e. Only if the volume variable is omitted. If the volume variable is part of the regression equation, then possible deliveries acts as a control variable to allow the volume effects on load time to be accurately determined. Also see my response to USPS/MPA-T5-2 (b) (3).

f. Yes, if the variable is not correlated with the omitted variable.

g. Yes. If there is no or poor correlation between the proxy and the omitted variable, then I would expect a lower R^2 because of larger unexplaned variations in the dependent variable caused by the missing causal (omitted) variable. Also the coefficients in the causal variables included in the regression may or may not be biased depending on correlation between them and the missing variable.

USPS/MPA-T5-26. Please refer to the regression equation presented on page 4 in Appendix B to your testimony.

a. How long did it take you (in person hours) to estimate the regression?

b. Confirm that you (or others directed by you) did not run any other regressions on the ES data other than the one appearing on page 4 of Appendix B. If you do not confirm, please provide a listing of all other regression equations that you ran on the ES data long with the program listing and logs.

c. Did anyone assist you in in estimating the regression on page 4 or any other regresssions on the ES data? If so, please provide the names of the people who assisted you, the qualifications of those individuals, the type of assistance they provided you and the amount of time they assisted you.

d. Please provide the date when you started the estimation process that led to the regression on page 4 in Appendix B to your testimony and the date when that work was completed.

RESPONSE:

a. In total my staff and I spent approximately 80 hours in reviewing various aspects of the relationship between the load time proportions, possible deliveries, and mode of delivery, discussing and developing the concept, preparing the data, running the regression, and evaluating the results fully.

b. Confirmed.

c. Yes. Ms. Lindsay Turpin prepared the data used for the analysis. Dr. William Miller, Mr. Fred Kelsey, and I reviewed various aspects of the data that led us to the regression analysis. Dr. Miller developed, ran, and evaluated the regression. I estimate that Ms. Turpin spent about 10 hours, Mr. Kelsey spent about 30 hours, I spent about 15 hours, and Dr. Miller spent about 28 hours.

Dr. Miller has an M.B.A. in Finance, an M.A. in Economics and a Ph.D. in Economics and has over twenty years' experience assessing the economic and financial performance of government and commercial programs, projects,

and activities. He has been associated with TRANSCOMM since 1987 and has been a key investigator in TRANSCOMM's postal and other activities.

Mr. Kelsey has an M.S. in Applied Science and an M.B.A. in Finance and over thirty years' experience in the analyzing utility demand, costs, and rates. He has been associated with TRANSCOMM since 1989 and has been a key investigator in TRANSCOMM's postal and other activities. This experience includes considerable statistical analysis of large data sets.

Ms. Turpin is a research assistant with Project Performance Corporation (PPC) and has worked on a variety of projects while at PPC and has experience in managing large data sets like the one in USPS LR I-163.

d. The process began in late March and ended April 25th.

USPS/MPA-T5-27. Please provide a list of all published econometric studies that you have authored or coauthored.

RESPONSE:

None. However, over the years, Dr. Miller, Mr. Kelsey, and I have had considerable practical experience in developing and reviewing proprietary econometric models used to estimate either demand or cost characteristics for commercial and governmental clients. Dr. Miller and I have also previously studied econometric modeling issues associated with Postal Service city carrier out-of-office costs.

USPS/MPA-T5-28. Please refer to the regression presented on page 4 of Appendix B of your testimony. For that regression please provide:

a. A general description of the program that estimated that regression including the objectives of the program and the processing tasks performed.

b. Any methods and procedures employed, along with a listing of input and output data, in machine readable form.

c. A listing of the source code in hardcopy and machine readable form.

d. For all input data:

   1. Designation of all sources for such data.
   2. Explanations of any modifications to such data made for use in the program.

e. Definitions of all input and output variables or sets of variables.

f. A description of input and output data file organization.

g. For all source codes, documentation sufficiently comprehensive and detailed to satisfy generally accepted software documentation standards appropriate to the type of program and to its intended use in the proceedings:

h. All pertinent operating system and programming language manuals.

i. If the requested program is user interactive, a representative sample program run, together with any explanation necessary to illustrate the response sequence.

j. A presentation of the economic theory underlying the economic study.

k. A complete description of:

   a. The econometric model(s)
   b. The reasons for each major assumption and specification.

l. The definition of the variables selected and the justification for their selection.

m. For any alternative model whose computed econometric results influenced the choice of the preferred model:

   1. A statement of the reasons for rejecting the alternative.
   2. An identification of any differences between that alternative and the preferred model with respect to variable definitions, equation forms, data or estimation methods, and

3. The computed econometric results for that alternative.

n. For every econometric technique used in the estimation process and the reasons for selecting each:

1. A referrence to a detailed description in a text, manual, or technical journal, or
2. A description and analysis of the technique that is sufficient for a technical evaluation.

o. A complete report of the econometric results, including, where applicable,

1. coefficient estimates,
2. standard errors and t-values,
3. goodness of fit statistics,
4. other appropriate test statistics,
5. the variance/covariance matrix of the estimates,
6. computed residuals for results computed from samples composed of fewer than 250 observations.

p. Descriptions of all statistical tests and hypotheses and the results of such tests.

RESPONSES:

a. The Excel regression program included as part of that software was used for the analysis.

b. See MPA-LR-6.

c. The source code is part of the Microsoft Excel 97 program and is non-extractable.

d. The load time data used for the analysis were from the ES data set in USPS LR I-163. For each of the 336 routes used by witness Baron to develop out-of-office time proportions, daily load tallies were averaged. The possible delivery and mode of delivery data were from USPS LR I-219. Please see Appendix B of my testimony.

e. Please see pages 2 and 3 of Appendix B.

f. The data used for the regression are arranged in tabular format in MPA-LR-6.

g. Please see my response to (c) above.

h. Please see my response to (c) above.

i. We did not run any sample programs. The only analysis run was the regression analysis documented in Appendix B.

j. Please see page 1 of Appendix B.

k. Please see Appendix B.

l. Please see Appendix B.

m. Given the limitations of the data we had to work with, the model presented was always our preferred model. No other model influenced the choice of our preferred model.

n. The regression equation was developed using ordinary least squares. This method provides the best linear unbiased estimators under the classical assumptions. Also please see chapters 4 and 5 from Pindyck & Rubinfeld, *Econometric Models & Economic Forecasts*, McGraw Hill, 1991.

o. 1.-4. Please see Appendix B and MPA-LR-6.

5. The variance/covariance matrix was not computed.

6. There were no residuals computed as part of the regression analysis.

p. The regression resulted in t-statistic values requiring rejection of the null hypothesis (zero value) for the intercept, all residential possible delivery types, business centralized deliveries, and two delivery mode dummy variables. Please see Appendix B (page 4) to my testimony for these t values.

RESPONSE OF MPA WITNESS CROWDER TO USPS INTERROGATORY

USPS/MPA-T5-29. Please refer to your Docket No. R2000-1 testimony at page 48, footnote 46, where you make the following statement:

> When there is less than 100% coverage, a volume increase causes an increase in coverage which reduces average volume per stop on the route. If there are stop/delivery-level load time scale economies (i.e., elemental load time variability is less than 100%), then average per piece load time actually increases (coverage-related load time is positive). On the other hand, if there are no such scale economies (i.e., elemental load time variability is less 100% and there is no fixed stop/delivery time), then average load time per piece does not change and changes in coverage have no effect on per piece load time (.e., coverage-related load time is zero).

Suppose a route has 300 SDR possible stops, and that at current route volumes and volume allocations, 280 of these stops are covered and 20 stops are not covered. Assume that volume now increases by one piece, and that this new piece goes to one of the previously uncovered 20 SDR stops. Assume further that "there are stop/delivery-level load time scale economies." Given these facts, please answer the following:

(a) Is it your view that "average per piece [SDR] load time" will increase because the additional load time generated by loading this new piece at this new SDR stop will exceed the average load time per piece over the original 280 actual SDR stops? If this is not your view, please explain why the presence of "stop/delivery-level load time scale economies" implies "that average per piece load time" will increase when volume growth causes a new mail piece to be delivered to a previously uncovered SDR stop.

(b) Suppose that the additional load time generated by the loading of this new mail piece at the previously uncovered SDR actual stop is 6 seconds, and the average load time per piece over the original 280 actual stops is 4 seconds. Does the entire 6 seconds of additional load time caused by this coverage of the new SDR stop equal coverage-related load time? Alternatively, do only the 2 seconds by which this marginal 6 seconds exceeds the 4 seconds average load time per piece constitute coverage-related load time? Please explain fully.

(c) Suppose the additional load time that would be generated if the new mail piece is delivered to one of the pre-existing stops 280 SDR stops is 3.5 seconds. Suppose further that the reason this additional load time is less than the average pre-volume-increase load time per piece of 4 seconds over these 280 stops is the existence of load time scale economies. Consider the 2.5 second excess of the 6 seconds of load time resulting from loading the piece at a new stop over this marginal increase of 3.5 seconds from loading the new piece at the pre-existing SDR actual stop. Does this 2.5 seconds qualify as coverage-related load time? Please explain fully.

RESPONSE:

(a) Confirmed for this example where measurement of average per piece load time is made only for this one specific time. However, the example provided is too static and does not demonstrate the proper relationship between volume, coverage, and load time over an annual planning cycle. This latter is the proper focus for rate setting and revenue/cost projections. The difference between the simple static example and the correct dynamic analysis may cause some confusion that I would like to eliminate here.

To view the relationship properly, the posited example can be expanded as follows. Suppose we ran the same experiment 100 times and observed that the new piece fell on a new stop only 10 percent of the time because on average the route is 90 percent covered. Then we would observe that average unit costs fall 90 percent of the time because of stop level scale effects (when the piece falls on an existing stop) and increase only 10 percent of the time. Also unit costs will decline over the 100 days (total costs for 100 days divided by total volume for the same period) compared to the existing level because the piece usually falls on existing stop. However the decline is not as great as if the piece always fell on an existing stop. The difference between the greater decline possible and the actual decline represents a scale effects loss from new stop creation 10 percent of the time. Also see my response to USPS/MPA-T5-2(b).

(b) Neither. The coverage-related effect is the difference between the marginal increase in load that would result if the piece went to an existing stop and the actual increase that occurs. Also please see my response to (a) above and USPS/MPA-T5-2(b).

(c) Confirmed for this example where measurement of average per piece load time is made only for this one specific time. The comments and example in (a) apply here also. Over the planning cycle, on an expected basis, we would expect to see an additional piece falling on a new stop only 10 percent of the time. As a result, I would expect to see the true marginal (total stop) load cost fall somewhere 3.5 seconds and 4 seconds, so that average unit costs would still decline from the four second average. If the marginal (total stop) load cost were 3.8 seconds, then 0.3 seconds would represent the coverage-related portion.

USPS/MPA-T5-30. Please refer to your Testimony at page 14 line 19 through page 15 line. Please present and describe all evidence, other than what you present on page 6 of MPA-LR-7 (MPA's Videotape Analysis), quantifying directly or indirectly the frequency by which ES data collectors identified carriers engaged in the route/access FAT activity as being at the "point of delivery."

RESPONSE:

I have attempted to provide all the evidence I have been able to accumulate on this subjec in my testimony and interrogatory responses. As stated in response to USPS/MPA-T5-22, we never attempted, in the videotape analysis, to quantify directly or indirectly "the frequency by which ES data collectors identified carriers engaged in the route/access FAT activity as being at the 'point of delivery.'"

Moreover, I believe it is impossible to either (1) "directly" quantify the extent to which Mr. Raymond's allocation of ES tallies among the STS categories overstates the true load proportion and understates the true route/access FAT proportion for the ES route-days included in LR I-163; or (2) pinpoint and quantify all the reasons why there is such an overstatement of load and understatement of FAT run time. My necessarily limited analysis of ES videotapes of park & loop route-days clearly shows that the comparable ES tally proportions of "Load" and "Route/Access FAT" do not comport with the actual (ratemaking costing) proportions observed on the videotapes. Instead, it indicates that, for those routes or route-segments, the ES Load Time proportion is too large and the ES Route/Access FAT Time proportion is too small.

A core problem in trying to determine precisely what the ES data collectors were observing, of course, is the impenetrability of the ES tallies. LR I-163 is like a "black box" where all you see is the output. We know what the data collector recorded, but we can never be sure if the resulting tally accurately reflected the carrier's actual activity at that instant or if the data collector's interpretations of that activity match the load time definitions used for costing purposes. As explained in testimony (pages 7-

19), there are a number of reasons why the ES tallies cannot be considered a precise (costing for ratemaking) description of what carrier activity was actually being observed when the Videx Timewand II scanner made its "beep."

However, the regression analyses of the ES data presented in my testimony, and by Mr. Baron in LR I-310 and subsequent documents, indirectly demonstrate that the ES estimate of load time is considerably greater than "true load time" in the system. The substantially lower volume variability derived from the ES data, compared to that from the LTV data, indicates that a portion of the tallies assigned by Mr. Raymond to the load category are not consistent with the definition of "true load time." Given the way in which the tallies were collected, it appears that a large (albeit unquantifiable) number of "Load" tallies were associated with carrier activity that did not include "true load time." (See also response to USPS/MPA-T5-4 and MPA-LR-7, pages 12-13.) This, of course, is why, if the inaccurate ES time proportions were to be used, they must be coupled with the lower ES variabilities from that same database.

RESPONSE OF MPA WITNESS CROWDER TO USPS INTERROGATORY

USPS/MPA-T5-31. Please refer to page 3 of MPA-LR-7 (MPA's Videotape Analysis). You state:

> One person tracked and recorded the clock time (from the tape) for (a) the beginning and ending of each tape sequence and (b) either the beginning or ending of each load activity. That person also noted descriptive information about the delivery types and conditions. The second person used a stop watch to time the load activities and assist in identifying the beginning and ending times for each tape sequence.

Please answer the following:

(a) Please define the term "tape sequence."

(b) Is the person who "tracked and recorded the clock time. . . for (a) the beginning and ending of each tape sequence and (b) either the beginning or ending of each load activity," the same person that is later identified (on page 8) as the "delivery recorder?" If your answer is no, then is this person the same person that is later identified (page 8) as the "stop recorder?" Please explain fully.

(c) Is the person who "used a stop watch to time the load activities and assist in identifying the beginning and ending times for each tape sequence" the same as the person later identified as the "stop recorder?" If your answer is not, then is this person the same person that is later identified as the "delivery recorder?" Please explain fully.

(d) Assuming that your answer to part (b) is yes, please explain why on page 3 you state the delivery recorder recorded "either the beginning or ending of each load activity," whereas on page 9 you state that the delivery recorder recorded only "the end time for each Stop Time."

(e) Assuming that your answer to part (c) is yes, please note that on page 3, you state that the stop recorder "used a stop watch to time the load activities and assist in identifying the beginning and ending times for each tape sequence," whereas on page 9 you state that the stop recorder may have recorded the "start and end times" as an alternative to recording the entire elapsed time. Also, on page 9, you do not state that the stop recorder assisted "in identifying the beginning and ending times for each tape sequence." Please explain the apparent discrepancies.

RESPONSE:

(a) A tape sequence is an uninterrupted (or virtually uninterrupted) sequence of taped carrier activity time. Although the videotapes may have many minutes of out-of-

office time recorded, that recorded time was not continuous. Instead, sequences of carrier activity were recorded, sometimes throughout only a portion of the day and sometimes throughout the entire day. Some of these uninterrupted sequences may have lasted only a short time and some may have lasted several minutes. On pages 2 and 3 of Appendix B, I explained that many of the tapes recorded out-of-office activities for only small segments of time. The terms "segment" and "sequence" are used interchangeably there.

(b) As explained on page 7 of Appendix B, the descriptive material on pages 9 through 15 was the original data collection package developed for the videotape study prior to viewing any ES videotapes. It includes the stop, inter-stop, and other time definitions used in the study. And, those definitions are what we used as training material.

However, as explained on both pages 3 and 7 of Appendix B, after viewing some of the tapes, we almost immediately changed our data collection procedure to accommodate the conditions on the tapes. Only one individual in each team recorded data and that was either myself or Ms. Turpin. Thus, we were both "delivery recorder" and "stop recorder," while the second individual on the team handled the stopwatch and assisted with identifying clock time. We did not use the forms shown on pages 14 and 15 of Appendix B, we instead used lined paper. After each day of data collection, Ms. Turpin and I transcribed our handwritten notes onto Excel spreadsheets.

(c) Please see my response to (b) above.

(d) Please see my response to (b) above. There were two data recorders. I found it easier to record the beginning of each stop while Ms. Turpin found it easier to record

the end of each stop. Consequently, my data collection sheets show the beginning times for each stop while Ms. Turpin's show the ending times for each stop.

(e) Please see pages 3 and 7 of Appendix B and my responses to (b) and (d) above. There are no discrepancies.

RESPONSE OF MPA WITNESS CROWDER TO USPS INTERROGATORY

USPS/MPA-T5-32. Please refer to your response to USPS/MPA-T5-1 where you state:

> The fixed time I refer to is fixed per stop. Assuming that a stop must be accessed or covered, then fixed time is the portion of time at that covered stop which does not vary with stop volume.

a. Confirm that this definition of fixed time means that the amount of fixed time at a particular stop can be no greater than the total time at that stop for loading one piece of mail. If you do not confirm, explain how fixed time at the stop can exceed the total time at that stop for loading one piece of mail.

b. Confirm that your notion of "fixed time" means that this fixed time is incurred if any volume is delivered to the stop but that the amount of fixed time is independent of the amount of volume delivered. If you do not confirm, please explain how the volume delivered at the stop affects this fixed time.

c. Confirm that access time is incurred if any volume is delivered to the stop but that the amount of access time is independent of the amount of volume delivered. If you do not confirm, please explain how the amount of volume delivered at the stop affects access time.

RESPONSE:

a. Confirmed.

b. Confirmed.

c. Confirmed.

RESPONSE OF MPA WITNESS CROWDER TO USPS INTERROGATORY

USPS/MPA-T5-33. Please refer to your response to USPS/MPA-T5-1 where you state:

"Even within groups of stops where combinations of characteristics are constant, fixed stop time will vary for other unexplained reasons. As with any random variable, the proper measure for fixed stop is its expected value.

a. Confirm that you are asserting that fixed time at a stop is a random variable. If you do not confirm, please explain the use of the terms "random variable" in the quotation.

b. Provide all studies, analyses, or record citations that support the assertion that fixed time at a stop is a random variable.

c. Provide all studies, analyses or record citations that support the claim that fixed time at a stop varies for "other unexplained reasons."

d. If you answer to a., above, is in the affirmative, please explain what activities are taking place during the "random" fixed time at a stop.

e. Is the intercept in a population regression equation a random variable? Provide citations to the economics or statistics literature to support your answer.

f. Is the intercept in an estimated regression a random variable? Provide citations to the economics or statistics literature to support your answer.

RESPONSE:

a. From one day to the next, the fixed time at a particular stop may vary.

b. None are required, the result is intuitive and occurs in the real world.

c. None are required, the result is intuitive and occurs in the real world.

d. All load activities that do not vary with volume may vary randomly.

e. I assume you mean for "population regression equation," the true quantitative function that is being estimated. In that case, no. The intercept for the true function is not a random variable. The error term in the population regression equation includes any random variations in fixed time per stop. No citations are required. The interpretation is self-explanatory and is consistent with standard econometric technique.

f. Yes. It is an unbiased estimate of the value for the true quantitative (population-level) function. The confidences bands around the estimate specify the degree of random variation and include the population level intercept value at the specified confidence level. No citations are required. The interpretation is self-explanatory and is consistent with standard econometric technique.

RESPONSE OF MPA WITNESS CROWDER TO USPS INTERROGATORY

USPS/MPA-T5-34. Please refer to your response to part (b) of USPS/MPA-T5-2 which asks you whether or not "fixed stop time" is part of "true" load time as you define it. Your response states that "fixed stop time" is a "component of route load time" and "might explain part or all of coverage-related load time," but it does not answer the question asked.

Please answer with a simple yes or no, is "fixed stop time" part of "true" load time as you define it.

RESPONSE:

Yes, fixed stop time is part of "true load time" as defined by the LTV data and models.

RESPONSE OF MPA WITNESS CROWDER TO USPS INTERROGATORY

USPS/MPA-T5-35. Please refer to equation 1 in your response to part (a) of USPS/MPA-T5-2:

$$L = V * u + AS(V,PS) * f$$

a. Confirm that V*u represents elemental load time in that equation. If you do not confirm, please explain how you would calculate elemental load time using this equation.

b. Confirm that AS (V,PS) * f represents coverage related load time in that equation. If you do not confirm, please explain how you would calculate coverage-related load time using this equation.

c. Confirm that the two parts, V*u and AS(V, PS)*f, sum to total accrued load time on the route. If you do not confirm, please explain your use of the phrase "total load time on the route."

d. Confirm that if the route in question had one single delivery stop, then V*u would be the variable load time at that stop. If you do not confirm, provide the expression for variable load time at that stop.

e. Confirm that if the route in question had one single delivery stop, then AS(V,PS)*f would be the fixed load time at that stop. If you do not confirm, provide the expression for fixed load time at that stop.

f. Confirm that if the route in question had one single delivery stop, then the two parts sum to total accrued load time on the stop. If you do not confirm, please provide the expression for total accrued load time at the stop.

RESPONSE:

a. Partially confirmed. The term V*u is elemental load time only when (u) does not vary with volume. This is a special case only. Otherwise, the decrease in (u) because of stop level scale economies must be included in the elemental load time definition. If there is a consequential increase in actual stops, then coverage-related load time is also affected by the change in (u). Please refer to part (b)(3) of my response to USPS/MPA-T5-2, for the general decomposition of total load time

marginal costs into the elemental and load time portions. It is repeated here for easy reference:

> Route-level volume variability is then defined by:
>
> $$L_V(V, PS) * V/L = [u + V*\partial u/\partial V + (\partial AS/\partial V)*(V*\partial u/\partial AS + f)] * V/L,$$
>
> *where $(u + V*\partial u/\partial V) * V/L$ is the non-coverage related or elemental load component* and *$[(\partial AS/\partial V)*(V*\partial u/\partial AS + f)] * V/L$ is the coverage-related component*. The right hand side of the expression indicates the disaggregated form which shows the explicit impacts from the three effects I described earlier (from changes in volume, unit costs (u), and fixed stop time). The left hand side is the reduced or consolidated form of the expression which includes these disaggregated effects. It is important to note that the ES regression data used by the USPS only included route level volume and possible stop data so that any proper specification of a regression model that uses these data must be of the functional form L(V, PS). Thus route-level load time variability measured from such a model must be of the reduced form $L_V(V, PS) * V/L$, which must include all volume effects detailed on the right hand side, including all coverage-related effects initiated by the volume changes. (Emphasis supplied)

Using these variabilities, total load time volume variable cost can be decomposed into its elemental and coverage-related portions as:

$$L_V(V, PS) * V = (u + V*\partial u/\partial V) * V + (\partial AS/\partial V)*(V*\partial u/\partial AS + f) * V.$$

b. Not confirmed. The term AS(V,PS) * f defines total stop-level fixed costs not coverage related load time. Elemental and coverage-related load times are marginal costing concepts used for rate-making purposes. They do not define total costs. Please refer to (a) above.

c. Confirmed.

d. Confirmed only when (u) is constant. More generally, volume-variable time would be defined by $(u + V*\partial u/\partial V) * V$.

e. Confirmed only for a one stop route with mail for a single day's observance. However, it is important to note that, on a dynamic basis, AS(V,PD) for a one stop route is fractional. Refer to the coverage expression used by the USPS to define actual deliveries, $AD = [1 - e^{r*(V/PD)}] * PD$. When PD is one, then $AD = 1 - e^{r*V}$. Since (r) is always negative, the term $1 - e^{r*(V/PD)}$ is always fractional. Then $0 < AD < 1$ always when PD =1. The key to interpreting this result is to view the volume-coverage relationship over an annual planning cycle. This is the proper focus for rate setting and revenue/cost projections.

Suppose over a year's time, we observe annual volume (or average daily volume) for a one stop route and the number of actual delivery days. We would not expect volume to be delivered everyday to that one stop, just the majority of days. Viewed dynamically for workload planning purposes, coverage to the stop for that year would be defined by the number of days in which mail is delivered divided by the total number of possible delivery days. If the postal system were defined as a collection of one stop routes, for rate-setting purposes we would be interested in this annual volume-coverage relationship. The relationship could be specified by collecting annual volume-coverage data for the same one stop routes over time. Alternately, we could select a cross-section of one stop routes with the indicated annual data to develop this relationship.

The resulting relationship would be no different than the volume-coverage relationships formed in actuality from multiple stop routes. Estimated coverages from the latter are also properly interpreted as annual coverages (total number of actual deliveries over a year divided by the product of possible deliveries and delivery days). When viewed over an annual period, fixed stop time can then be seen to vary in the same way with respect to average daily volume, regardless of the number of possible stops on a route. For a single stop route, fixed stop time would vary because of changes in the number of accesses required to that stop over a year, as average daily

volume varies. For multiple stop routes, fixed stop time varies because of changes in the number of accesses required on all route stops over the year. The Service uses daily observances of route volumes on multiple stop routes as estimates of the average volume for those routes in developing its coverage relationships.

f. Confirmed only for a one stop route with mail for a single day observance.

CHAIRMAN GLEIMAN: Is there any additional designation of written cross examination for this witness?

[No response.]

CHAIRMAN GLEIMAN: If not, that brings us to oral cross examination. Three parties have filed a request for oral cross examination: Newspaper Association of America, Office of the Consumer Advocate, and the United States Postal Service. Is there any other party who wishes to cross examine the witness?

[No response.]

CHAIRMAN GLEIMAN: If not, then, Mr. Baker, on behalf of the Newspaper Association of America, you may proceed.

MR. BAKER: Thank you, Mr. Chairman.

CROSS EXAMINATION

BY MR. BAKER:

Q Good afternoon, Ms. Crowder.

A Hello.

Q Let's start, if you will, by turning to page 14 of your testimony, and once you're there, I would direct your attention to line 10.

A I'm there.

Q Okay. And just to -- at the moment, to put this in context here, here you are beginning a discussion of certain tallies that Mr. Raymond assigned a load time,

correct?

A Yes, sir.

Q And particular, here on page 14, you are focusing on tallies with a point of delivery activity code, correct?

A Yes.

Q And now this discussion, so we all know what we're talking about, refers to the tallies in -- can I call it the Baron database?

A Yes, that's fine. Library reference 165.

Q Right. The tallies used by Mr. Baron to calculate --

A Yes, sir.

Q Okay. And do you recall approximately how many total observations were in that database?

A There were --

Q 39,000? Is that the figure?

A There were roughly 39,000 tallies.

Q Okay.

A 340 routes.

Q All right. And do you recall, of those 39,000 approximate observations, about how many of those were classified by Mr. Raymond as load time?

A I don't recall the exact number.

Q Okay. Is it about 16,000?

A It's roughly 16,000.

Q Okay. I think it's actually 16,600, subject to check. But that's the neighborhood --

A I've looked at a lot of numbers. I can't remember that.

Q I understand. At line 11 there, you refer to the point of delivery as accounting for the, quote, vast majority of tallies that Mr. Raymond assigned a load, and would you accept subject to check that it accounts for about 97 percent of them?

A All right. What is the 97 percent again?

Q The 97 percent would be how many of the point of delivery tallies were assigned to load; is that right?

A Subject to check. I just don't remember.

Q The vast majority --

A I know it was a lot, yes.

Q Okay. Now, down at line 19 on the same page, you had -- just before that, there's a passage in your testimony when you talked about possible confusion on the part of Mr. Raymond's team as to what the term point of delivery meant, and at 19 and the following lines, you state that this confusion is evident in tallies that Mr. Raymond assigned to a load that showed the carriers' activity as walking or traveling between deliveries, right?

A Yes, sir.

Q Now, you might want to leave a marker on that page

because we'll be returning to that part, but I would like you to turn to your answer to NAA interrogatory number 1.

A I have it.

Q And here we ask you a question about that passage we just referred to about the confusion over the point of deliveries in these tallies that Mr. Raymond assigned to load that show the carriers' activities walking or traveling between deliveries. And we asked you the total number of such misassigned tallies, and at least in your first sentence of your response, you said that you had not made that analysis as specified and referred us to where we could go look, isn't that correct so far?

A Yes, sir.

Q But then you went on to provide a series of activity codes, activity detail codes which indicate walking or traveling, and you set those up at the next -- right underneath in your answer, is that correct?

A Yes.

Q Okay. Let me first ask sort of one particular, sort of clean-up questions. If we look at that list at the bottom of the page 1 of your response to NAA-1, in each case we have a phrase or word, followed by a parenthetical, is that correct?

A Yes. Yes.

Q And the phrase or word is an activity code in Mr.

Raymond's, correct?

A Yes.

Q And in the parenthetical is either a work type indication or I think Mr. Baron in his refer to them as details, is that correct?

A Yeah. It has been called a couple of things, but I call it an activity detail.

Q Okay. First, I would like you just quickly to look at the first line there, it is Finger at Delivery, and what does the parenthetical mean there? The one starting LLV, do you recall what LLV detail means?

A LLV is a term for Long Life Vehicle.

Q Okay. So this was an LLV detail and dismount delivery time there?

A Yeah.

Q Maybe holding a finger there, could you go to the fifth line from the bottom that begins "Finger at Delivery, LLV detail for dismount delivery type." And I notice that the only difference between those two is in one of them the parenthetical had the word "and" and the other "for." And I was wondering if that meant --

A I think I double counted.

Q That may have been a double count?

A Yeah.

Q Okay. All right. So for this 25 or 26

combinations, do you know how many tallies fell into this combination?

A No, I don't.

Q You have not determined that number?

A No.

Q Okay. And so you would not -- it follows then that you would not know how many of Mr. Raymond's 16,000 odd load tallies have this combination, these combinations?

A No, but the data is available.

Q Okay. Do you have, in a ballpark sense, whether it is 10 percent or 50 percent, or 1 percent?

A No.

Q No.

A It is a small number.

Q A small number. Okay. Would you --

A Could I --

Q I was going to ask, maybe this will tell you what you want. Do you think it would be important for the Commission to know how many tallies there were in these combinations?

A I think the absolute number is -- I think we get tripped on trying to quantify an absolute number. Out of the 16,000, there were several routes that had multiple days. So, you have to condense this into the effect that you have on the 340 or the 336 routes. So you have to

condense it into the effect on the costs that are used for ratemaking. And I have not done that, and I don't know of anybody else who has. I don't have that data.

Q Okay.

A Beyond that, I think these are important because there may not be very many in number, but one thing that -- one of instructions, as I understand it, for data collectors, when they got to point of delivery, was to identify the mail receptacle. And these are in some cases -- and a mail receptacle would be under activity detail, and mail receptacles are not identified with these.

Q Okay.

A I think, you know, it just, to me, shows inconsistencies and a small opening into what might really have occurred.

Q Well, if -- let's suppose that the total number of tallies that corresponded to the activity codes that you laid out here were, oh, fewer than 100, compared to the 16,000 load time tallies, do you think that would be information relevant to the Commission's decision?

A I think it would be preferable to determine how those tallies have affected the total proportion of load that is used for the costing for ratemaking.

Q Okay. And if 81 tallies or so were approximately one-half of 1 percent of the total load time tallies, would

you expect that to have a big effect or not?

A I don't think it would have a huge effect, no.

Q All right. Could you turn to page 2 of this answer? Still on NAA-1. And I would direct your attention to the on route location tallies assigned to a time. Again, this, you didn't determine how many tallies had these combinations as well?

A No. No, sir.

Q Okay. Likewise, for the vehicle ones --

A I didn't -- I didn't for any of them.

Q Okay. Further down in that answer, next to the last paragraph on page 2 of NAA-1, you discuss why you think there could be some inconsistent application of definitions. And your sentence of that, where I would like you to focus, you state, in many other instances, you suspect that this kind of activity is masked by the over-use of receptacle codes, as you discussed in you testimony.

Are you referring in this sentence to other tallies that Mr. Raymond would have assigned to Point of Delivery?

A Yes, sir. Or, in this case, it is Point of Delivery, but for any of them.

Q Okay. Right here, we have a Point of Delivery?

A Yes.

Q Okay. If we had a Finger at Delivery and the

tally further indicates that the carrier was at the receptacle, do you think that would be more or less likely to be misassigned than ones do not have a receptacle indication?

A I think Finger at Delivery is a little more precise. I am not as troubled by Finger at Delivery, although there were tallies where the activity was Finger at Delivery and then the activity detail was something other than what I would consider a delivery or load-related activity. But Finger at Delivery is -- to me, that is a far more acceptable term than delivery/collection.

Q Let me --

A I would like to point out that there were a relatively small percentage of total load tallies that were Finger at Delivery. And, in fact, I was a bit surprised that there weren't more of them.

Q Could you return back to page 14 of your testimony? And I direct your attention to the footnote, footnote 9, that appears on that page. And this was an example you cited of Point of Delivery tallies for dismount deliveries with a vehicle activity code?

A Yes, sir.

Q And if you could turn to NAA-2, we ask you an interrogatory about that footnote. Would the tallies that we discuss in NAA-2 -- you understood that to mean the ones

that you alluded to in footnote 9?

A That is my recollection.

Q Well, that is what we meant and I think that is what you answered.

A Yes.

Q All right. We are talking about the same --

A I think so.

Q Okay. That is what I think, too.

A Okay.

Q I just wanted to make sure we are on the same page. And, again, here you stated that you have not actually determined how many tallies actually may have been misassigned in the manner owe it to, correct?

A That's correct.

Q Did you determine whether any tallies existed with these -- you know, of this type?

A Yes, there were.

Q And how, by eye-balling it?

A No, no, no. This is -- I want to get this cleared up. One of the first things that we did when we got the Library Reference 163 was to do, I don't know what you would call it, a summary of the various tally types. Okay. And I have worked with that, that is what I have throughout the case, I have had that.

The summary did not have all of the codes, but it

had the major codes. The location code, the delivery type code, the activity code and the activity detail code. To me, those were the major codes. And I have had that distribution -- I wouldn't call it distribution, but it was just a listing of all of the tally types. And I have worked from that all along.

And when I was doing these responses, that old dogeared piece, you know, set of papers is what I was using.

Q So you have got a database, if you will, call it, or a list of all the combinations that --

A I have a hard copy list.

Q Of all that appeared?

A Yes.

Q All the combinations that appear?

A Yes.

Q And you can look at that. Okay.

A Yes, sir.

Q And that doesn't tell you how many there are, but it tells you the combinations that appear?

A I think this one had some counts, I believe it did have counts, but I never summed them up.

Q Oh.

A Let me just double check, I have it here somewhere. Well, I did have it. Yes, it has counts.

Q Oh, do those counts allow you to --

A If you have a question about one item, one tally type, I can give you counts.

Q Oh. Well, maybe I do, since you offer. Can you -- well, does that enable you to -- let's turn back to the combinations you list in NAA-1. Does that enable you to tell me how many tallies are associated with each of these combinations of activity codes on page 1 of that response?

A Probably. I will have to search them out for you.

Q Oh.

A They are not in a specific order.

Q Oh.

A Do you want to try one.

Q Well, let's just take the top one, Finger at Delivery, LLV detail and Dismount delivery type.

A Let's see.

I have a point of delivery, dismount, Finger at delivery, LLV, and there's 27 of them.

Q That's the number we had, too.

A So you have the numbers already?

Q Yes, I did. Would you -- well, we could go down through the whole list, but how long would that take?

A That would probably take awhile.

Q Okay. Would you then, just looking here at NAA-1, could you do me one more favor and look at the fifth entry, travel between delivery with short walk flat detail?

A Okay, that will take --

[Pause.]

You know, I'm not going to be able to give you a count, because I have them separated out by delivery type. But I have -- oh, this is Finger at delivery.

Oh, here's one right here. Here's a -- no, that en route, I'm sorry.

Q I asked --

A I can probably find one for you.

Q I'm just asking you the travel between delivery, with sort, the fifth entry on your activity codes list on page 1 of NAA-1.

A Yes. It's just that I have them separated out by delivery type, so I have to look at all of the delivery types. Do you want me to do that?

MR. BAKER: Well, Mr. Chairman, it appears that the witness, contrary to the implication, the answer actually does have the numbers she could associate with each of these categories here.

And I think it would be useful to have that number in the record. I don't think I want to take everyone's time to go through it now.

I have the numbers I believe that they are, and I could ask her to confirm them, subject to check, or we could ask her to produce her numbers and we compare them later.

CHAIRMAN GLEIMAN: You're cross examining, sir. If you want to ask, you can ask; if you would like just to have them submitted for the record, that's fine, too.

MR. BAKER: I wonder if counsel could have those submitted for the record?

MR. McLAUGHLIN: We can do that. Obviously, it will take a little bit of time to go through all of that, so we --

THE WITNESS: Well, what are we asking for? You had requested a total number here, which I do not have.

MR. BAKER: Okay.

THE WITNESS: Or we can give you the individuals.

MR. BAKER: Well, I was hoping you could give me the individuals for each of the combinations you list in NAA-1.

CHAIRMAN GLEIMAN: Is that doable, Ms. Crowder?

THE WITNESS: Yes. It's just that I did not have a total number. That's the reason I answered as I did.

MR. BAKER: And once you've gone through all of that, will you have a total number?

THE WITNESS: Yes, sure, but I did not have it.

CHAIRMAN GLEIMAN: Let's talk about some timing on this, because it is getting fairly late in the game. I assume that you want that material for rebuttal testimony purposes, Mr. Baker.

Can we have a guesstimate on when that material might be available? Would a week be okay?

MR. McLAUGHLIN: A week would be fine.

CHAIRMAN GLEIMAN: That would satisfy Mr. Baker, I take it, and also it's possible in that timeframe. Okay, well, then we'll look for the material in a week.

BY MR. BAKER:

Q With that, I think we can skip some of the next questions I would ask. I would like you, instead, to move on to page 43 of your testimony.

[Pause.]

Do you have that?

A Yes, sir.

Q And on the top of page 43, you reproduce -- and you may want to turn back to the preceding page -- a table from your Library Reference LR-7; is that correct?

A Yes, sir.

Q Okay. And could you briefly just tell us what this is, this table is? I mean, it looks like -- maybe I'll do it this way:

You observed a particular route, which is the left column. These are from the videotapes, right?

A Yes, sir.

Q And you give us the number of stops, as you defined it, you observed in the tape; the amount of time,

total on the tape that you observed; the average stop time that you measured in seconds; and then you --

And you took your stops by your stop times as a percentage of the total time observed, and that gave you your last column; is that correct?

I don't mean to trick you; I'm just trying to --

That what you did to -- say, looking at the CYO 44233 line --

A Yes, sir.

Q To get your 15.2 percent. Does that represent 68 times 3.6 seconds divided by 27.1 minutes?

A No.

Q No, okay. Can you tell me --

A I don't believe so.

Q Oh.

A Why don't you let me explain what we did.

Q Fine, okay.

[Pause.]

A The number of observed stops is the number that we counted of those that we saw on the videotape that we collected.

The amount of videotape time observed is the sum of the stop.

Well, let me give you some terminology: We had two terms that we were looking at. One was called stop

time, and the other was called inter-stop.

Stop time was defined, the best that we could, as load time under the LTV definition.

And then inter-stop was simply walking time. Any time the carrier was walking or on his route, going between stops, was called inter-stop time.

And the amount of videotape that that second column -- that is the sum of stop plus inter-stop time.

Okay, so, the average stop time is obviously the average. Actually, I think, as you're explaining it, you're correct.

It should be roughly the same, the proportion, our proportion should be approximately the average stop time times the number of stops.

And that would give you total stop time, and then it would be divided by the sum of the total stop plus inter-stop.

Q Okay, I think I had it right then.

A Yes, I think you did, but I just had to walk through it.

Q All right, and then the next to last column, that was the number that Mr. Raymond reported.

A No. Well, no. The next to the last column was adjusted in some cases.

Q All right, is that the adjustment you refer to in

Footnote 42?

A Footnote 42, yes, sir.

Q And could you explain what adjustment you would have made? The last sentence of that footnote, the ES ratio has been adjusted to match the same time periods observed in videotapes.

What did you mean by that adjustment?

A In some cases, there wasn't a lot of videotape for some routes. There wasn't a lot of videotape for any of the routes.

In some cases, the tape was fairly nice, in that we had little segments of sequences of taped time throughout the day.

In other cases, we only had in the morning or in the afternoon or some portion of the day. In the case where there was -- it was for some portion of the day, and I really couldn't get a good feel for what the rest of the day looked like, then I would adjust the tallies.

I would just take the tallies, the FAT and load tallies for that portion of the day, and compare to what we had gotten from the videotape data.

Q Okay, then, just to make sure I understands how this works, I'd ask you to turn back to page 43 and look at the second entry, CY05 2822.

A Yes, sir.

Q So, during the 23.4 minutes, then, that you observed or you and your team observed, you noticed 49 stops. And the average stop time was about 3.2 seconds; is that correct?

A Roughly.

Q Okay. And you would be comparing here, that 23 -- what you observed over the course of that 23.4 minutes to the entire time that the carrier spent on the route that day, which would be reflected in the next to last column, right?

A Yes, sir.

Q And you -- is it easily accessible to you, the spreadsheet that would tell you how long the carrier was on the route that day?

A How long he was on the route?

Q This particular carrier? I would hand you -- I have a page from your spreadsheet that I will --

A Hold on. Maybe I do. I can't recall whether that was a single day or not.

Q Okay.

CHAIRMAN GLEIMAN: Mr. Baker, perhaps if you identified the spreadsheet and the page number, that would help the witness.

MR. BAKER: I think what I will do --

THE WITNESS: This was a single day. I have it

right here.

MR. BAKER: Okay.

BY MR. BAKER:

Q And does that show -- indicate how many hours the carrier was on the route?

A He was -- he had 40 tallies.

Q Forty tallies.

A So, that sounds like it's roughly four hours.

Q That's correct. I think your math is correct, assuming six-minute intervals, all right.

A There is something interesting about this route. When we --

This is a pure -- what I would consider a pure park-and-loop route. It's all what the Postal Service calls residential-other deliveries.

And on the tape, I did not listen to the tapes, usually, personally. But on the tape, when two other people were looking at this particular tape, I heard very loudly and clearly, an individual say, and the whole route is just like this.

It was very neat, and I stopped immediately what I was doing and said, put that down, guys, please put that down, because I was worried about making sure that what was on the videotape was similar to what I didn't see on the videotape.

MR. BAKER: Mr. Chairman, I have prepared just the page from the witness's spreadsheet that I think just reflects that information.

I am informed by counsel for the Postal Service that it contains information that is subject to the confidentiality terms, so what I might suggest I do is show it to the witness, make sure it's the same one that she has.

And if either we put -- I suppose we could put it into the transcript with the confidential section of the transcript. Would that be the appropriate procedure.

MR. McLAUGHLIN: Is this directly from the Library Reference?

CHAIRMAN GLEIMAN: Well, now that you've shown it to the witness, I think we need to hear from Mr. Cooper. My inclination is, if you want to ask some questions, even if it's just a question of the witness that confirms that this is out of her spreadsheet, that you hold off on that question and ask that question during the closed session.

Otherwise you're going to have a question and answer now in an open volume, and the reference material in a closed volume, and I'm not sure that's going to serve the purposes of the transcript very well.

MR. BAKER: Very well, let me ask it. I think we have added some legend --

CHAIRMAN GLEIMAN: Before we do anything, I think

there are two gentlemen sitting to your right who want to state their piece here.

MR. McLAUGHLIN: I just have a question of clarification. Is the document that I have been handed, is that the actual Library Reference, or is this something that you have prepared that has stuff other than the Library Reference?

MR. BAKER: Let me consult a moment.

[Pause.]

CHAIRMAN GLEIMAN: Mr. Cooper, would you like to wait until we figure out what we're looking at?

MR. BAKER: I am informed, Mr. Chairman, that when we opened the Library Reference and printed it, this is what emerged.

CHAIRMAN GLEIMAN: So this is a page from the Library Reference which is protected?

Mr. Cooper?

MR. COOPER: Which Library Reference are we talking about?

CHAIRMAN GLEIMAN: Is this 3?

MR. BAKER: MPA-7, I believe, but it contains some information that was covered by the Baron/Raymond confidentiality agreement.

MR. COOPER: It's my understanding that MPA Library Reference Number 7 is publicly available on the

Commission's website, so to the extent that this is a direct reflection of that document, then it's already been publicized.

MR. BAKER: Well, in any event --

CHAIRMAN GLEIMAN: I just want to make sure I understand. This is not a page that is copied out of the Postal Service's reference that is protected; it's out of an MPA Reference that is not protected?

MR. BAKER: That is correct.

CHAIRMAN GLEIMAN: In that case, you can't get the cat back in the bag, so you may as well continue with this, and Mr. Cooper is on notice now and ready to jump in at any moment, if he feels the need.

MR. McLAUGHLIN: Mr. Chairman, I just might state that I'm a little bit surprised that happened. Rick, was this one that we had agreed would be public, or this may have been a snafu?

We had some discussions about what needed to be confidential.

MR. COOPER: My preference, of course, was that anything touching on the confidential materials would remain confidential.

To the extent there might have been a limited disclosure that's unavoidable, we may have to deal with that, but I would just urge that all further precautions be

taken to limit the exposure of the protected material.

MR. BAKER: My understanding, Mr. Chairman, is that the only particularly sensitive information has to do with the identity of the particular city location, and where this was done.

BY MR. BAKER:

Q In any event, Ms. Crowder, I was wondering if you just had a chance to look at this and see if it looked like your spreadsheet?

A Well, it looks like the legend down at the bottom is different, but that's all.

Q I think we did abbreviate the legend.

A Yes, the numbers are the same numbers.

Q All right. Well, I'm not really sure what I want to do with the document.

[Laughter.]

THE WITNESS: I think maybe --

BY MR. BAKER:

Q The document, I believe, you have already put into evidence from your spreadsheet as part of your testimony?

A Yes, the numbers -- you were asking about page 43.

Q Yes.

A And I suspect you'll want to know how I got to the 30 percent for the comparable ES proportion?

Q Well, you can tell me that, yes.

A Okay, I just took the total load tallies that he had, and took out two of them. And it says right here on the paper that you've given me, two of the load tallies said they were hardship.

And the carrier apparently was having excess words or doing some kind of PR. I didn't consider that load, and I just pulled those out.

MR. BAKER: Mr. Chairman, I think that since the witness has agreed that this page is in her Library Reference 7, which has now been admitted into the record, I don't believe I need to clutter it any more by putting this page back in.

CHAIRMAN GLEIMAN: The only cluttered now is my mind, about the process.

[Laughter.]

BY MR. BAKER:

Q All right, I'd like to move on to a different subject now, Ms. Crowder.

A Okay.

Q Could you please turn to OCA Question 4 to you.

A I have it.

Q And this was one of the series of interrogatories from the Office of the Consumer Advocate to you about the STS study, is that correct?

A Yes.

Q And you were asked by the OCA to confirm that in that study the carrier's self-reported the activities after being paged at three different times along the route and you did confirm that in your response to (a), correct?

A Yes, sir.

Q And in (c) you talked about you had investigated the STS study and you made a similar comment in a couple of the other answers, at least in this case, but -- so I take it you haven't gone back and looked at the STS study. You were relying on your recollection of it from a prior experience, is that correct?

A I have not looked at the STS information in this rate case. I did testify on it in R97 so I was pretty familiar with it from R97.

Q Okay, so when you confirmed in (a) that basis was your memory from having worked on that in the past case?

A Yes.

Q And in subpart (b) of that, you stated your recollection that the STS survey, while the carriers were not trained as data collectors, after the task they were then debriefed by the data technicians, is that correct?

A Yes, sir.

Q So is it your understanding that the STS survey did not actually involve the observation that the actual activity of the carrier by anybody other than the carrier?

A That's right. I put testimony in on that. I thought then that the STS was slightly overstated in terms of the load.

Q Do you know who would or what type of person would actually have determined and recorded the carrier's activities in the STS study?

A I can give you some recollections.

Q Well, would --

A I believe the carrier had some kind of little card that he carried with him and he filled out when he got his beep. I think -- I am not positive but I think he was sort of prepped before he went out, and then he was debriefed when he came back in, and he was -- and in both cases this was a trained professional data collector who did it.

Q And do you know whether the debriefing by the data technician resulted in the assignment of the tally to an STS category, would that happen by someone else later on?

A No, there was quite a bit of data processing that went on with the STS and I cannot recall all of that.

Q Could you turn to page -- let's see. What's the cite I want? -- page, I guess page -- what page do I want --

MR. BAKER: Mr. Chairman, pardon me a moment while I find my page reference here.

[Pause.]

MR. BAKER: I found it.

BY MR. BAKER:

Q Could you turn to page 28 of your testimony? This here is a part of your discussion of your testimony where you express some concerns about whether the routes studied by Mr. Raymond were representative of the universal postal routes. Is that a fair characterization?

I am looking at the top part of page 28.

A This paragraph describes the types of route and carrier characteristics that I think ought to be considered when putting together a sample.

Q Okay. I will accept that. Now if you look, direct your attention to lines 16 through 20 on page 28 of your testimony --

A Yes, sir.

Q -- and you state, expressing doubt that the ES sample of 340 routes with the unweighted sampling ratio of .2 percent was adequate to fully represent the conditions you stated above, given the nonrandom, clustered nature of the sites.

Then you go on to say that the nonrandomness is further illustrated by the fact that 44 percent of the routes were observed during the peak season of October, November, and December, and I want to ask you about particularly that last sentence, and is your point here that October, November and December are busier months and might

be unrepresentative of the full calendar year?

A I think October, November and December are peak periods. There's clear seasonality in Postal Service operations.

Q And then if -- so your point, you would not want a survey of carrier time to be over-represented by those months, is that correct?

A I'd want a survey that was representative of the year.

Q Okay, so you wouldn't want to exclude October, November and December --

A No.

Q -- but you wouldn't want it to be disproportionately October, November, December, is that correct?

A That is correct.

Q Do you happen to know what percentage of the route days were observed in the months of October, November and December?

A No, I don't, but I do know that a lot of the route days were done in the summertime, running -- I don't have that information with me -- but there was a distinction between the multiple day routes and all the routes, and for the multiple day routes many of them were done in the late spring and summertime.

Q Would that suggest then that -- what does that lead you to conclude about the October, November and December?

A It doesn't -- I still say for the routes.

Q Do you know what percentage of the 39,000 observations in the Baron database were taken in the months of October, November and December?

A I can't give you a specific number but I can tell you that there were a lot of days for multiple day routes. I may have that information here somewhere or I could give it to you, but there was a very large number of days for multiple day routes.

Q And in what months were those days?

A Again, I can tell you I believe it was Spring and Summer. I remember a lot of days in June, July, and August.

Q And if there were a lot of days in June, July, and August, does that suggest there were not a lot of days in October, November, and December?

A There were a lot of days in June, July, and August for a small number of routes.

Q Okay, so you do not then -- you don't know right now, while you're sitting there, what percentage of the 39,000 observations were taken in October, November, and December?

A No, I never looked at that.

Q Okay. Let's assume, hypothetically, that about 20 percent of the observations, of the 39,000 observations occurred in those three months.

Would that give you -- would that address some of this concern of disproportionate representation of those months?

A No, it wouldn't.

Q So the 20-percent figure would not make you feel better than the 44-percent figure on line 14 of page --

A No, because, again, you're talking about multiple day routes. Each of those routes counts as one route.

It may have many days, but it only counts as one route.

Q Do you happen to recall over what months the STS study was conducted?

A No.

Q Do you recall whether the STS study included any observations for the months of November and December?

A I don't recall anything of that nature for the STS. I have not looked at that.

In fact, I probably have never looked at that part of it.

Q So, are you -- I take then that you are not aware that, at least according to the Commission's decision in R87-1, that the entire universe of STS tallies were taken in

a three-month period ending in October of that year; is that correct?

A What cite is that? I don't recall.

Q The cite? The citation would be the Commission's Opinion and Recommended Decision in Docket Number R87-1, page 221, paragraph 3287, and a better cite would be to the testimony of Witness Hume in that proceeding, USPS-7(b), page 2 of 17, beginning at line 10, if you could check that.

A I have read both of those documents, I just didn't recall that.

MR. BAKER: Mr. Chairman, I have no more questions.

CHAIRMAN GLEIMAN: Mr. Costich?

MR. COSTICH: Thank you, Mr. Chairman.

CROSS EXAMINATION

BY MR. COSTICH:

Q Good afternoon, Ms. Crowder.

A Hi.

Q I'd like to ask you a few questions about your discussion of randomness and bias.

A Okay.

Q The Engineered Standards study is not random, right?

A The sample is not completely random.

Q Now, is it your contention that this lack of

randomness causes load time proportion developed from the ES sample to be too large?

A That is -- it's my contention that that's one of the reasons, yes.

Q So you are convinced that the load time proportion from the ES study is too large?

A Yes, sir, I am.

Q Could you look at your response to OCA/MPA-T5-3?

A Which? OCA-T5-3?

Q Right.

A Okay.

Q Particularly Part B of that interrogatory asked you if the 1986 STS study was entirely random; is that correct?

A Yes. That was your question?

Q That was the question.

A Yes.

Q Now, should I understand your response to be that you don't know?

A That's correct; I don't know.

Q And the same with respect to the LTV study or the sample for the LTV study?

A I was not involved -- LTV is a study that I have looked at. I have not looked its sample design.

I can tell you that my recollection is, for LTV,

there was quite an extensive amount of information in the record for R87, but I didn't go back and look at it.

Q But you did study it back in R87?

A I didn't. Let me explain. I worked on the LTV stuff in R87, but not on the sample design portion.

Q So you don't know whether the LTV or STS samples were entirely random?

A No, sir, I don't.

Q But you are asking the Commission to rely on them, is that correct?

A What I am recommending is that the Commission continue to do what it has been doing with respect to LTV and STS for several reasons.

The first reason is that I don't believe that the ES time proportions are any better and may in fact be worse than the STS proportions.

The second reason is that we have been using the STS and LTV to change now with a study that I consider to be pretty unreliable would cause a lot of disruption in rate relationships and may be unnecessary disruption if the Postal Service is willing to come in with a better study later.

The third reason is because if the Commission accepts this we might not get anything better next time. We need a better study, a more accurate, more reliable analysis

of what goes on out on city carrier routes, one that gives us correct costs and allows us to come up with good rates and I would like to see that come in the next few years and my concern is if this is accepted we are going to be stuck with it for a long time.

Q If I could take you back to the STS and LTV studies and in particular the randomness or lack thereof for those studies, you cannot tell the Commission one way or the other whether the sample selection procedures for those studies are any better or any worse than they were for the ES study?

A For the LTV there was quite a number of observations, a large number of observations. These were observations of stops, loads at stops.

I can't recall exactly but it is roughly 20,000 or more. That's a lot.

LTV was conducted by industrial engineers who knew what they were looking for. That's all they were looking for, so from that perspective I believe that LTV is fairly reliable.

STS was a limited study and I can't say much more than that about it, but it is what we have been using and it was designed by the same people who designed the LTV, the FAT and the CAT analyses. They all fit together. They are all intended to fit together.

What we have got now is we have got a little bit of this and a little bit of that. We have got the ES and then we have got the LTV and then we have got the FAT, CAT and they don't fit together anymore. At least we have something that is consistent and integrated with the STS, the LTV, the FAT and the CAT.

If that changes then we have got what I have said before. We have a mish-mash and we might get stuck with it for a long time.

Q If I could come back to the randomness question, you don't know whether the LTV sample design was entirely random, is that correct?

A I can't recall now. That is correct -- and the same for STS. I can't recall.

Q Now a moment ago you said that the LTV study was large, is that correct?

A It had a large number of observations.

Q Now does that make it random?

A No, sir, it doesn't, but it does tend to give you more comfort in its results.

Q Could you look at page 28 of your testimony?

A I've got it.

Q And in particular Footnote 28.

A Yes, sir.

Q Now you quote Witness Raymond as saying that in

his experience when sampling size gets large, no matter what criteria you used for sample selection it is going to be a random sample, is that basically what --

A That is what I understood him to say, yes.

Q And your rejoinder was that you disagreed completely, is that correct?

A Yes, sir.

Q So what is it about the larger sample that gives you more confidence? It is not the randomness, right?

A In talking about Footnote 28, in Footnote 28 -- let me first say you are correct. Not necessarily having a large sample makes it random or more reliable, but the LTV was limited to one item, one kind of operation -- loading at points of delivery.

The ES data are being used to describe various aspects of whole routes. There is a whole lot of difference there. You have a lot of differences in characteristics among routes. You need to recognize that.

There is a tremendous diversity. I would think that there would just be so much more diversity among routes than there would be among individuals stops like an SDR stop or an MDR stop -- SDR particularly. MDR -- there is a diversity in MDR stops, I understand that, and business and mixed, but the majority are single delivery, residential stops and I have looked at a lot of them on the videotapes

and they are a lot alike.

The operations are pretty much the same.

What I am talking about in Footnote 28, I am talking about route characteristics and there's a lot of differences in route characteristics -- distances travelled, means of travel, numbers of deliveries, types of deliveries, amount of volume. I mean there's just all sorts of things and that is the diversity that I am talking about that I would like to see captured in some more reliable study.

Q So you believe the LTV study does capture this diversity?

A I believe it does pretty well. You know, again, I have already told you I don't know whether it is random or not. I feel like it is probably pretty good for what we have got. It is better than what we have now, I mean what we have been offered, but I wouldn't want to use LTV with the ES time proportions.

Q When you say the LTV is better, are we here in this -- are we judging on the basis of diversity of routes or stops, or --

A Okay. I'm sorry, this does get complicated. If all we are looking at, if all I want to estimate is stop time or load time, or marginal load time, then LTV is probably pretty good, it is good for that. I believe it is fairly reliable. I know that it is old, but I think it is

probably fairly reliable. What it is not good for is being used with the ES time proportions, because LTV measures a different amount of load per stop than what the ES time proportions measure. And it just doesn't work, that is part of this mishmash, this mix-up, the problem with studies not matching each other.

Q Are you familiar with the expression "sampling error"?

A Yes, sir.

Q Would you agree that when one draws a sample and calculates a sample mean, one doesn't necessarily get the population mean?

A Yes, sir.

Q Is it possible that the LTV study did not capture the population mean?

A It is possible, yes.

Q Could you look at pages 22 and 23 of your testimony? Particularly, the part (b) where you discuss exclusion of data.

A Okay.

Q Is it your contention that the exclusion of some data from the Raymond data set caused load time proportions estimated from the ES study to be too large?

A No, sir. I don't know what it would do.

Q Could you look at your response to OCA/MPA-T5-5?

A I have it.

Q This interrogatory is asking about the 1985 LTV study, correct?

A Yes, sir.

Q Part (c) asked you if any data were removed from the LTV database before regressions were run, is that correct?

A Yes.

Q And do I interpret your response as a don't know?

A I don't know.

Q But you are asking the Commission to rely on the 1985 study?

A I don't want to get -- I am not asking the Commission just to rely on the LTV. I am asking it to stay with the LTV plus STS as the combination to use. I am not saying to use LTV with the ES data. LTV goes with the STS data, they more clearly match. And, again, the reason for staying with that combination, I have given you. I have tried to explain my reasoning for that.

It is not entirely because LTV and STS are perfectly reliable and ES is not reliable. LTV and STS are old studies, I know that. There are other reasons for recommending that the Commission stay with the LTV-STS combination, and I have given those to you.

Q Since the time that the LTV and STS studies were

presented to the Commission, has the Commission had a choice as to what to use for carrier costing?

A There haven't been any other studies, if that is what you are asking. If there are no other studies, I guess they have no choice. They do now have a choice, and the choice is if they choose this ES data, then, for the next several years at least, there won't be any other choice.

Q Is it fair to say -- well, let me start over. I want to make sure I understand why you are pushing the STS-LTV combination. It is because the Commission has been using it for a long time?

A It is because it is what we have been using to establish rate relationships for a long time. It is because I don't believe the ES proportions are reliable and are very likely very much overstated. It is because if they choose the ES, to use the ES data now, we have no -- very little hope of getting anything better from the Postal Service for some time to come. We really do need something better. I recognize that STS and LTV are old. I recognize that STS was limited even when we started using it. We need something better, I know that, but I don't believe this ES data is that something better. It doesn't do it.

Q Could you look at page 29 of your testimony?

A Okay.

Q Right at the top where it says "in particular."

A Page 29? Oh, okay.

Q Line 2. There's a sentence beginning "in particular." Here, you're pointing out that the ES sample has a lot more representation of curb routes than it should; is that correct?

A Yes, sir.

Q The differences in proportions of route types between the ES sample and all routes are displayed in the table that's right after that sentence, correct?

A Yes, sir.

Q And curb routes are 42.2 percent in the ES sample?

A Yes. Yes, sir.

Q And overall, there are only 31 percent curb routes; is that correct?

A Yes.

Q And for park and loop routes, you have the opposite relationship? There's 41.7 percent in the ES study?

A Yes, sir.

Q And 49.9 overall?

A Correct.

Q Would you agree that curb routes and park and loop routes together account for 80.9 percent of all routes?

A Yes.

Q And 83.9 percent for the ES sample?

A I haven't -- 83.9? Yes, that looks right.

Q So for motorized residential routes all together, the ES sample is pretty close; is that correct?

A Yes, sir.

Q Could you look at your response to OCA/MPA-T5-7. You were asked whether load time and load time variability differ significantly between residential loop and residential curb route; is that correct?

A Yes, sir.

Q And do I take your response to be, I don't know?

A I haven't looked at that. I have somewhere else -- I can't even recall now -- indicated that the function, the operation is slightly different between curb and park and loop. Whether that would mean that you would want a separate model or whatever, I don't know. I would like to get into that, but I don't have the information. I haven't examined it.

Q So you can't at this point say that the combination of motorized residential routes is unrepresentative in the ES sample?

A If what you're looking for is an estimate of the proportion of motorized routes in the system, then this roughly doesn't -- this doesn't. But that's not what we're looking for.

Hold on just a minute. I want to read your

question again.

What you have here is a question that asks: Are average total load time and load time variability likely to differ?

Now, I read that to mean that you were talking about average per stop. If you're talking about average per route -- it just dawned on me that maybe that's what you were talking about. If you're talking about average per route per load time, yes, they do differ. I apologize, it just dawned on me that maybe that's what your question meant.

On a per-route basis, yes, you will find that curb routes have more load time.

Q And where will you find that?

A You can find it in the data. You can find that in the data, in the ES data, okay? You can find that in the ES data. Curb line routes have proportionately more load time than park and loop routes.

Again, I thought you were talking about average per stop.

Q Could you look at your response to OCA/MPA-T5-8. There is a sentence in the question that begins "By inference." Do you see that?

A Yes, sir. I see the question.

Q Okay. The question asked whether you are

indicating or contending that the 1986 STS study yields more accurate street time percentages than does the ES study.

Now, your answer is: I was making no inferences other than what I described in testimony.

Should I take that as a no?

A This is a good one. I answered a UPS interrogatory that was very similar, and I said that no, I couldn't say whether one was more reliable or accurate than the other, and after we filed it, I was not terribly happy with it.

This question is a very similar question. I can't tell you how accurate either one of them are, but I've done a lot of -- over the past several months and over several years, I have looked at the carrier cost issue and I just believe the ES data are not accurate. I believe they are very far off in terms of estimating the correct proportion of load time. The STS is off, but I don't know how much. My personal belief is that the STF is probably closer to the mark than the ES, but that is my belief based on all the work that I have done. And as a result, I think that really I -- I should have changed my response to the UPS 1 question as well. I'm just troubled by the word "accuracy". I don't believe either one of them are accurate. I just think that ES data is just way far off.

Q Well, --

A And I guess consequently, I think STS is a little more accurate.

Q I don't think anyone here doubts the sincerity of your belief concerning the ES study, but in your response you say the Postal Service has not provided convincing evidence that the so-called changes are not in large part due to ES sample bias and the way ES data collectors recorded tallies.

Isn't the simplest explanation for the changes that you have two samples looking for the same thing 14 years apart. They come up with different estimates of the population mean.

A Well, obviously I have thought about that. If they were two random samples and they were both -- if they were both done exactly the same way, sure. But they weren't done the same way.

I can't tell you what the -- all -- the reason for all of it. I wish I could. It's not just that. I'm convinced of it. It's not just that. I have testified in the past about STS and that I thought it was overstated a little bit in terms of load for somewhat the same reasons why I believe the ES data is overstated. It's hard to get that estimate of true load. It's difficult. LTV made it difficult for anything else to come up with comparable time proportions.

But I don't believe it's the same -- I don't believe it's just simply a sampling error. It's a lot more than that. It's not sampling error. I can't prove it, but I very strongly believe it.

MR. COSTICH: Thank you, Ms. Crowder.

I have no further questions, Mr. Chairman.

CHAIRMAN GLEIMAN: Before we have Postal Service cross examine, I think we'll take a ten-minute break at this point.

[Recess.]

CHAIRMAN GLEIMAN: Mr. Cooper.

MR. COOPER: Mr. Chairman, I have one question that I can safely ask in open session, and then I will leave it up to you as to how to proceed from there.

CHAIRMAN GLEIMAN: Thank you, I think.

CROSS-EXAMINATION

BY MR. COOPER:

Q Ms. Crowder, would you please refer to your response to Postal Service Interrogatory 33, subpart (a)?

A 33?

Q 33, subpart (a).

A Yes, I have it.

Q This question asks you to confirm that you were asserting that fixed time at a stop is a random variable. I just want to make sure I understand your response. You said

from one day to the next, the fixed time at particular stop may vary.

A I confirm it. I'm sorry.

Q That means confirmed?

A Yes. I confirm it.

MR. COOPER: Okay. Thank you.

With that, Mr. Chairman, --

CHAIRMAN GLEIMAN: That is the extent of your open session cross-examination, that's fine. Is there --

THE WITNESS: Could I just -- I'm sorry. One thing. I just want to make sure that random variable is the way I define it. May I? I apologize.

MR. COOPER: Please.

THE WITNESS: Because I looked at this later and I thought, well, maybe we are having a definitional problem, so I have written my definition down. The random variable that I mean is a number that varies from time to time, and to which you can assign probabilities for each of the variations.

CHAIRMAN GLEIMAN: Are we done with cross in open session? Are there any follow-up questions?

MR. COOPER: I have one follow-up to that.

BY MR. COOPER:

Q So if you look at your answer to part (e), where you refer to the Population Regression Equation and say that

the intercept is not a random variable.

A For -- okay.

Q What do you mean there?

A Okay. I accepted the term "Population Regression Equation" that you used in your interrogatories, and it later occurred to me that maybe we were also having a difference of definition. To me, my understanding of a Population Regression Equation is the true value for the terms, for the true value for the intercept, the true value for the coefficient for the population in total, not just for the sample. And there is one true value, it is an expected value.

Q Okay. But if you don't have statistics for the entire population, you are going to be dealing with something less than the true value, isn't that right?

A Yes, sir. And that is why you have these variations.

Q And if you are estimating an equation, your intercept term will be not based on the entire population, isn't that right?

A Yes.

Q And it will have some degree of randomness in it, won't it?

A Yes.

Q Okay. Thank you.

A It also has a confidence interval around it.

THE REPORTER: It also has what?

THE WITNESS: If this is a regression of sample data, it has a confidence interval around it. The intercept and the coefficients have confidence intervals around them.

MR. COOPER: I am done. Thank you.

CHAIRMAN GLEIMAN: Is there any follow-up to cross-examination?

[No response.]

CHAIRMAN GLEIMAN: Are there questions from the bench?

[No response.]

CHAIRMAN GLEIMAN: There doesn't appear to be any further questioning.

Mr. McLaughlin, would you like some time to discuss with your witness the possibility of redirect concerning the cross-examination that took place in open session?

MR. McLAUGHLIN: Yes. Give me several minutes. I don't anticipate much, but let me just consult with the witness first.

CHAIRMAN GLEIMAN: Certainly.

[Pause.]

CHAIRMAN GLEIMAN: While counsel is consulting with his witness, I want to remind all of those of you who

are present here that -- excuse me, could you turn your mike, make sure your mike is turned off? Okay.

I want to remind all of you who are present in the room that if and when we go into closed session, and it appears that we will shortly, if you have not signed a certification with respect to -- and help me, Mr. Cooper, the materials in U.S. Postal Service Library References -- or Reference -- fill me in -- 51 or 61?

MR. COOPER: It is Library Reference 352 which I will be using. I will also be using a spreadsheet from Library Reference 7, which we discussed earlier.

CHAIRMAN GLEIMAN: With respect to the Postal Service Library Reference 352, if you have not signed a certification, you may want to take the opportunity to do so. You can go to the docket room and do that now. If you choose not to do that and have done it, then you will not be able to stay in the room. That, of course, does not apply to Postal Service employees who are involved in the materials in question, neither does it apply to the Commissioners.

MR. COOPER: Yes, and the ruling in question is Ruling Number 27.

CHAIRMAN GLEIMAN: Thank you.

[Recess.]

CHAIRMAN GLEIMAN: Mr. McLaughlin?

MR. McLAUGHLIN: We do have some brief redirect.

REDIRECT EXAMINATION

BY MR. McLAUGHLIN:

Q Mr. Baker was talking with you about page 43 of your testimony where you show the results of your videotape analysis of the ES data and there was some discussion about how you calculated the proportion of load time that shows up in the ES data.

You indicated in some cases that represented less than the whole day. I would like to refer you as an example to the information for CY60 Route 1913 on that table, where it shows that the ES proportion of load time was 48.7 percent.

Can you tell us whether that was for the entire day including all tallies or was that a portion of the day?

A I believe that was a portion of the day.

Q And can you tell us in terms of the actual total tallies for that route -- I believe there are actually two route days there -- of the actual total ES tallies what percentage of the total ES tallies were load tallies?

A It was over 63 percent.

Q So the figure you have used is actually substantially lower than what the total route day load percentage is?

A Yes.

Q Okay, and that compares to the videotape analysis which shows a 13 percent load, is that correct?

A Yes.

Q I would like to clarify a discussion that you had with Mr. Baker when you were talking, I believe, about the October through December tallies and the October through December routes and route days and how that compared with summertime.

Mr. Baker seemed to be focusing on the number of route days rather than the number of routes that were sampled during those periods. When Mr. Baron did his analysis where he actually did the costing calculations, did he in the end focus on route days or on routes?

A He came up with average proportions by route.

Q And for example if a particular route had been observed 10 days and another route was observed one day, isn't it correct that for the route that was observed 10 days Mr. Baron in essence factored that down by a factor of 10 to weight it so that it would be equivalent to the one route day observation, is that correct?

A Yes, that's roughly correct. I can't remember exactly how he did it, but what he ultimately came up with was an average proportion for the 10 days.

Q He in essence normalized so that the fact that one route had many route days would not be overweighted, is that

correct?

A Correct.

Q Okay. Final question. Counsel for OCA was asking you about samples and sample biases and he mentioned something to the effect that what you have here is two different samples, one done a while back and one done recently and that these are two samples looking for the same thing.

Do you believe that the STS and LTV samples were looking for ratemaking type load time costing analyses data?

A I don't believe the definition -- no, they weren't looking for the same thing. The definitions were different.

Q Let me clarify that. The question right now is STS and LTV, not the ES.

A I'm sorry. STS--

Q For STS and LTV, were those studies looking for load time cost data for ratemaking purposes?

A Yes, they were.

Q Was the ES study looking for load time costing data for costing, for ratemaking purposes?

A No.

MR. McLAUGHLIN: No further questions.

CHAIRMAN GLEIMAN: Is there any recross?

[No response.]

If there is no recross, then that ends our open

session. Lest people think we don't appreciate your testimony let me say before we close the record, Ms. Crowder, that we appreciate your appearance and your contributions to our record.

We thank you but you are not excused at this point.

Also, for those who will look at the transcript and with an eye towards what comes next, that is beyond the closed session today, we will reconvene tomorrow morning, Friday the 21st, at 9:30 a.m., and we will receive testimony from Witnesses Erickson, who has been rescheduled, and from Witness Fronk, who is being recalled, and with that we are going to close this session down.

We are going to take a short recess, five minutes, so that we can make sure we have got all of the proper checks and balances in place and so that we can set up whatever cross examination exhibits there are that the Postal Service wishes to use.

I want to thank all of you and remind you again if you are not from the Postal Service and if you are from other than the Postal Service, let me say, and have not signed a certification, you need to do so or else you may not participate, you may not sit in on the closed session. Thank you.

[Whereupon, the hearing was recessed, to resume in

closed session, this same day.]