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

Postal Rate and Fee Changes, 2000

Docket No. R2000-1

REBUTTAL TESTIMONY OF
DENNIS P. STEVENS
ON BEHALF OF THE
UNITED STATES POSTAL SERVICE

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AUTOBIOGRAPHICAL SKETCH

Please refer to the autobiographical sketch contained in my direct testimony, USPS-T-20.

PURPOSE AND SCOPE

My testimony has five parts. Part I reviews the relationship of the various parties, the USPS, A. T. Kearney, and Resource & Process Metrics, Inc. (R&PM), in the development of what has come to be called the Engineered Standards (ES) work sampling database and the decision to use the database in this case. In Part II, I refute the assertions of MPA witness Keith Hay (MPA-T-4), regarding both his importance in those discussions and his erroneous conclusions about the inappropriateness of the ES database for postal costing. Part III refutes the contention of MPA witness Antoinette Crowder (MPA-T-5) that her analysis of ES videotapes is valid for postal costing while the ES work sampling analysis is not. In Part IV, I compare the ES work sampling database to other postal studies and specifically to the 1986 STS study that it replaces. In Part IV, I show that the ES study compares favorably to similar studies upon which postal costs rely, despite the complaints of the MPA witnesses.

Finally, in Part V, I refute the notion that the ES work sampling database is not suitable for city costing by showing that the new data greatly enhances our understanding of city carrier costs and, in combination with the new LTV analysis put forth by witness Baron, produces more accurate costing results than the available alternatives.

I. The Decision to Use the ES Database

A. The Respective Roles of The Postal Service, A. T. Kearney, and R&PM.

Much has been alleged in this case as to the role of A. T. Kearney in the review of what is now called the ES database, and whether A. T. Kearney did or did not recommend that the Postal Service use the ES data to develop costs for city carriers. This issue was brought forward in witness Keith Hay's, MPA-T-4, testimony: "In fact no one could be better placed than A. T. Kearney to understand whether the work by Mr. Raymond - - already completed when reviewed by the Data quality Study - - could be used for rate-making, since A. T. Kearney was responsible for both the Data Quality Study and the Engineering Study managed by Mr. Raymond."¹ In fact, A.T. Kearney, through the Data Quality Study, was the catalyst of the process whereby the ES data were introduced in these proceedings. However, the ES study itself was managed, directed, and reviewed by postal delivery personnel. In discussing who best should evaluate Mr. Raymond's work, Mr. Hay's comment may be made more appropriate by prefacing it with the phrase "outside of the Postal Service."

A.T Kearney's role in the development of the study was primarily in managing the budget, not the day-to-day study operations. Mr. Raymond exercised operational control. A.T. Kearney oversaw his work, but there is no indication that they had the breath of control or knowledge to determine whether these data were appropriate for ratemaking or not. In discussions, A.T. Kearney's representatives suggested that the Postal Service should investigate whether any aspect of the ES database is suitable for use in a rate case and whether any of the procedures or study methods employed by Mr. Raymond may be applicable for ratemaking.

¹ Tr. 27/13092.

1 When the final Data Quality Study was issued, I was tasked with reviewing the
2 ES data. My only contacts with Kearney's staff were brief: to acquaint me with the
3 various studies that had been done as part of the overall project and to direct me to the
4 postal people who were the customers for the work. A series of meetings followed with
5 Delivery Redesign management and staff where they described the purpose of their
6 work and the data sources that they had developed. What has come to be known as
7 the ES database is a subset of the voluminous work developed by R&PM for Delivery
8 Redesign. The meetings revealed one worksampling report that showed the breakdown
9 of total carrier street time into activities. It was this report that led me to Mr. Raymond. /
10 *felt then, and continue to believe, that the data contained in this report are valid for rate*
11 *making because they provide, as did the 1986 STS, a precise mapping of carrier street*
12 *activities into the functional areas that the Commission requires.*

13 B. Reasons to Use the Data

14 Despite our initial concern that introduction of these data into the rate case would
15 be controversial, after much review and internal discussions, we became very
16 comfortable with our decision to go forward for the following reasons:

17 ***ES data are current and extensive - 1996 vs. 1986 data.*** Mr. Hay would have
18 us return to the 1986 STS proportions and discard a more current and accurate
19 description of carrier street activities when all parties recognize with the advent of DPS
20 and a more motorized carrier force, carrier street activities have changed.² Moreover,
21 the ES database dwarfs the original STS in size. The 1986 STS study had only 7,103

² See Part III.

1 tallies, about 3 tallies per carrier,³ whereas the ES worksampling database has 38,557
2 tallies spread over 844 carrier days, about 45 per carrier.⁴

3 ***ES data collectors Independently Recorded Activities (Tallies), Tracking the***
4 ***Street Activities for Sampled Carriers for the Entire Day.*** This is the great strength
5 of the new study. In the 1986 study, the carriers recorded the data. In Mr. Raymond's
6 study, independent observers followed the carrier for the entire route. The tallies being
7 taken at six-minute intervals provide a complete unbiased view of the carrier's work vs.
8 the 3 tallies per route in 1986. By covering the entire day, Mr. Raymond's procedures
9 (assuming the route was properly evaluated⁵) virtually eliminate the possibility that the
10 carrier atypically could either speed up or slow down, thereby biasing the data, and
11 finish the route in the allotted time. This is powerful support for the ES data.

12 ***The ES Data are Reflective of the Carrier Force.*** Mr. Raymond made it clear
13 that one goal of the work sampling study was that he wanted the selected carriers to be
14 representative of the national carrier force: the same ratio of regular to part time flexible
15 carriers, gender, age, etc. In TABLE 1 below, I show that Mr. Raymond's claim is
16 validated when compared to the postal carrier population at the beginning of his work.⁶
17 More detail in this regard are shown in Mr. Raymond's USPS-LR-I-293.

³ Docket No. R87-1, USPS-7B, page 2.

⁴ USPS-LR-I-453.

⁵ The route evaluation ensures that on a typical workload day, the carrier should complete the street portion of the route within a few minutes of the allotted time.

⁶ Mr. Raymond's numbers are provided in his USPS-LR-I-293. Postal workhours are from National Payroll Hours, A/P 13, September 1995.

TABLE 1 Comparison of Carriers in ES Study with Postal Population

	ES Route Days by Carrier Type as Percent of Total Route Days	Percent of Postal Carrier Work Hours by Job Type as Percent of Total
Regular Carriers	84.15%	82.41%
Part Time Carriers	13.85%	14.48%
Transitional Carriers	1.05%	1.53%
Casual Carriers	0.96%	1.58%
TOTAL	100.00%	100.00%

II. Rebuttal of Witness Hay

In general, the role of A.T. Kearney was extremely constructive in bringing this study to light; however to import to them the degree of understanding of city carrier costing that Mr. Hay would allege only obfuscates these important issues. Moreover, it points more to the credibility of witness Hay and his role in this matter. Witness Hay states that the "most significant experience"⁷ is his employment as a technical editor on the Data Quality Study (DQS). I was an integral part of the research into carrier costing as part of the DQS process, and I never met or heard of witness Hay. Mr. Hay's conversations with the "authors"⁸ of the report are far removed from meeting with postal costing authorities or assembling and understanding the bases by which certain decisions or recommendations are made. Witness Hay has overstated his role with Kearney.

Mr. Hay provides a textbook road map of how in an ideal world a generic study *should* be conducted. The disconnect occurs when he applies his textbook foundation

⁷ Tr. 27/13076.

⁸ Tr. 27/13076.

1 to the ES database because of his noninvolvement with the principals, R&PM and the
2 Postal Service. Despite his remarks, contacts with the "authors" and editing a report
3 are not synonymous with the real world experience of conducting and managing an
4 engineering study. Lines 1-9, of his testimony (Tr. 27/13086) exhibit his lack of
5 understanding of what the ES worksampling database: "the enumerators *did not know*
6 *these post survey questions* ... how could they exercise quality control". The
7 enumerators only recorded activities, walking between deliveries, driving, etc. Those
8 tallies were regrouped to fit costing definitions. No questions needed to be asked.

9 Mr. Raymond developed a novel approach to collecting data efficiently and
10 accurately. The key element in his data collection process is that the "enumerators"
11 needed only to record what they saw. An example of the difficulties that arise when the
12 "enumerators" try to identify more complex concepts, such as load time, is evident in
13 witness Crowder's testimony. One need only review the Official Transcript Volume 33 to
14 understand. "I had already explained to them what I considered load time...I would
15 never tell them when to start and when to stop...They made their decisions on their
16 own, and different individuals would make slightly different decisions."⁹ Later witness
17 Crowder admits that she solves the problem of two vastly (by 50%) different load times
18 for the same event by averaging.¹⁰ From my experience, I can assure you that the
19 simpler you make the study the more effective it usually is. The most egregious
20 misstatement by witness Hay, in lines 1-9, is his characterization that Mr. Raymond had
21 developed the study for a different purpose. In fact, Mr. Raymond's purpose in the work
22 sampling analysis was appropriate for our analysis of the data. In both cases, the
23 purpose was to disaggregate street time into activities.

⁹ Tr. 33/16366.

¹⁰ Tr. 33/16371-72.

1 Mr. Hay also argues that this is a situation where "any data" may be worse than
2 "no data".¹¹ Mr. Hay apparently ignores that in this situation "no data" really means old
3 data, the 1986 STS. The real issue that the Commission must resolve is which study's
4 activity proportions more accurately reflect current carrier activities. The ES work-
5 sampling database improves the quality of our costing by updating a critical part of the
6 carrier analysis.

7
8 **III. Witness Crowder Is Wrong- The ES Work Sampling Database Is Valid For**
9 **Postal Costing - Not The Videotape Analysis**

10
11 In her testimony, Tr. 32/16152, witness Crowder lists her rules for a cost study.
12 Based on my 10 years experience conducting cost studies, rarely are standards 2
13 ("precise cost-related demarcations) and 4 ("simple, focused data collection") met in a
14 single study. Although it would be beneficial to have the observers understand the
15 issues addressed in standard 2, in most large studies, it is impractical to achieve such
16 understanding- both on a cost and personnel requirement basis. Consequently, the
17 best data collection for large studies usually follows standard 4. The data collection is
18 simple and most direct, i.e., record what you see when you see it, correctly. If this rule
19 is in place (which is the case with Mr. Raymond's study), then less controversy occurs
20 over the data (walking, loading, driving, etc. tallies). Expert personnel using these data
21 can then determine where the "precise...demarcations" are (load, access, etc.). The
22 size of the database usually mitigates concerns regarding tallies that seemingly occur at
23 a junction between STS categories, i.e., putting these few tallies in either bucket has no
24 effect on the outcome.

¹¹ Tr. 27/13078.

1 Another point she makes on lines 12-14, Tr. 32/16152, is that the purpose of the
2 study is "different" than it was used in our costing. I know of no reference that could
3 lead her to that conclusion. We used the study because the ES purpose and ours were
4 the same: to breakdown carrier street time into activities.

5 Another notion witness Crowder advances is that the carriers' workload led to
6 erroneous data *and* that the work sampling data, of all the data, are the most affected.¹²
7 After years of observing our data collection force, I note there is always plenty of work
8 for them to do; the collectors must be and are able to perform more than one task at a
9 time. But if fatigue were a factor, and I believe it was not, witness Crowder has
10 reversed the effects. Work sampling would be the least violated. If the observers had
11 to videotape a time study or count steps or letters cased, a greater likelihood would
12 exist that fatigue could lead to error. If all the observer had to do was to make the
13 appropriate scans to indicate what the carrier was doing when the beeper went off, the
14 chance of an error getting into the database is remote. Even if there were an error, a
15 review of the daily scans, concentrating on the scan previous and the one after the
16 error, makes correction rather simple. Carrying the argument to the extreme, even if
17 some fatigue-related error remained in the database, the chance of those errors
18 measurably effecting even proportions for the sampled route, let alone the proportions
19 reflected in the entire database, is slim.

20 Also, witness Crowder's contends in her testimony that Mr. Raymond's database
21 overstates load time. I have visited carrier units all over the country. From my
22 observations and discussions with local officials, there is no debate that load time has
23 increased. Witness Crowder argues that Mr. Raymond's distribution of route types and
24 its diversion from the postal universe leads to some of the overstatement of load

1 costs.¹³ Route types are not homogeneous; they are a composite of segments of
2 different delivery modes. For example, a park & loop route may have business or curb
3 line segments. This phenomenon has increased recently due to the number of carriers
4 who have access to a vehicle. Pointing to route types really does not add to the
5 discussion. Similarly, she talks of a large city bias on page 29. As shown later in Part
6 IV, the 1986 study also had a distinct large city bias. Whatever the appropriate level of
7 load time was in 1986, all indicators, that are available, show an upward trend.

8 In TABLE 2, I show the rate of growth, in what are assumed to be high load
9 deliveries, to be 3.4% since FY 1991. Also, the addition of DPS has caused an
10 increase in load time, as has the decline in foot routes. Even in her testimony, witness
11 Crowder supports the concept that load time is increasing. She states that pieces per
12 stop have grown "roughly 3% since 1988".¹⁴

¹² Tr. 32/16154.

¹³ Tr. 32/16174.

¹⁴ Tr. 32/16184.

TABLE 2 - Growth in Percent of High Load Deliveries

YEAR	Fy 91	Fy 92	FY93	FY94	FY95	FY96	FY97	FY98
Total Routes	157,386	161,419	163,959	176,229	168,812	167,813	166,010	166,091
Total Possible Deliveries	78,481,000	81,382,000	79,500,000	80,000,000	80,724,000	81,391,000	81,807,290	82,211,445
Total Possible Deliveries Per Route	499	504	485	454	478	485	493	495
Possible Deliveries to Apts, Curb-line, and Central Deliveries	39,101,000	39,593,000	n/a	40,561,000	41,147,000	41,837,000	n/a	42,366,009
Possible Deliveries to Apts, Curb-line, and Central Deliveries Per Route	248	245	n/a	230	244	249	n/a	255
Percent Probable High Load Deliveries to Total Deliveries	49.82%	48.65%	n/a	50.70%	50.97%	51.40%	n/a	51.53%

Another area of her testimony I find problematic is found on lines 20-24, Tr. 32/16158. She argues for "precise definitions of terms", claiming that "record what you see" is too vague. There is nothing vague to an observer about "at a stop", "walking", "at the vehicle", "making a delivery", etc. Possibly, one can teach a group of observers some set of activities that constitute "access" and get all of them to reasonably "demarcate" the exact point of time where "access" begins, but I assure you that is more difficult than the former and more prone to error. Perhaps these wrong-headed notions stem from a lack of real world experience in conducting studies. Surely, observers often assign different meanings to instructions, written or not, that are clear in the trainer's view. One can minimize this error by doing as Mr. Raymond did, having the observers

1 record simple actions. In that regard, the placement of the tallies into cost pools
2 become self-defining. If the process is made too complex, as was evident in Ms.
3 Crowder's own videotape analysis, large errors may result. Given the structure of Mr.
4 Raymond's database, I believe the placement of tallies into cost pools and their
5 subsequent use by witness Baron to determine volume variable costs is correct.

6
7 **IV. The ES Work Sampling Data Collection Compares Favorably With Other**
8 **Postal Studies**

9
10 **A. Few Costing Studies Are Flawless**

11 Witness Hay and witness Crowder in their testimonies have tried to leave the
12 impression that the ES study is somehow fatally flawed when compared to Commission
13 standards and, by inference, when compared to other costing studies previously
14 accepted by the Commission. Certainly, the Commission has in place guidelines for
15 costing studies. Whether previous studies adopted by the Commission can pass the
16 strict interpretation of Hay and Crowder is debatable. I do know from a practical
17 perspective that *most costing studies, no matter how well designed and planned, rarely*
18 *are completed without a few hiccups*. The ES study is exceptionally good, however.
19 What makes it so is the vast amount of raw, easily recast data that were gathered. Mr.
20 Raymond succeeded in creating a database that reflects the entirety of city carrier
21 activities. The fact that the study was not uniquely designed for rate making is not
22 damning, especially in light of the alternatives.

23 **B. A Look at the 1986 STS Analysis**

24 Both Hay and Crowder have testified that because of their perceived problems
25 with the ES work sampling data that the Commission should reject the studies and by
26 default base carrier costs in this case on the 1986 STS. Inherent in that argument is the

1 assumption that the 1986 STS was significantly superior in those areas where they
2 have concerns about the new data. In the next several paragraphs, I show where the
3 1986 STS data are significantly weaker in the most critical points that Hay and/or
4 Crowder have made regarding the ES data.

5 **1. Statistical Basis of Sample Design.** The ES Sample was made large
6 enough and broad enough (across all regions) to ensure representativeness. The 1986
7 STS sample of 100 sites was initially selected using conventional statistical sample
8 design principles. The original design was modified, however, because, of the 100 sites
9 originally selected, only 91 had beeper service. Although 2,400 routes were sampled in
10 the 91 cities, 1,019 (42%) were from only 11 (12%) cities.¹⁵ Also, beeps were limited to
11 3 per carrier to minimize interference with the carrier's workday. Many of the statistical
12 goals at the start of the project were compromised to ensure completion of the project.
13 Supervisors replaced trained data collectors, and implemented route substitution rules
14 when testing the selected route, for whatever reason, became impractical. Final
15 statistical representation of routes was not close to the goal of replicating the IOCS
16 eight route type proportions.¹⁶ For example, mixed business and residential park & loop
17 accounted for 26% of the 7,103 tallies, yet accounted for only 7% of the routes. See
18 Table 3. Also, certain travel time tallies ("margin"¹⁷) were discarded.

¹⁵ Docket No. R87-1, USPS-7B, Figure B3.

¹⁶ Tr. 32/16165. Contrary to witness Crowder's assumption, a statistically random sample does not always produce the desired results.

¹⁷ Docket No. R87-1, USPS-7B, pages 2-3. Margin deals with times when the carrier is sampled but is not on the street.

TABLE 3 - 1986 STS Tallies by Route Type*

IOCS Route Types	STS Tallies	Percent of Total	IOCS Street Costs (\$000's)	Street Costs Percentage (Expected STS Tally Distribution)
Business foot	113	1.59%	\$91,236	1.30%
Business motorized	109	1.53%	\$97,382	1.39%
Residential foot	563	7.93%	\$591,519	8.42%
Residential P&L	3458	48.68%	\$4,609,095	65.57%
Residential curb	761	10.71%	\$899,851	12.80%
Mixed foot	122	1.72%	\$99,842	1.42%
Mixed P&L	1863	26.23%	\$503,646	7.17%
Mixed curb	114	1.60%	\$136,662	1.94%
TOTAL	7103	100.00%	\$7,029,233	100.00%

*(Data developed from R87-1, Letter Route W/S 1A PG1)

2. Training of Observers. The 1986 study used carriers to self-record the data on the Street Time Sample Carrier Card.¹⁸ See ATTACHMENT 1. Supervisors at each of the sites were provided instructions on how to conduct the survey. The supervisors would determine when the carriers were to be paged; they were also responsible for making the calls. These supervisors, using oral instructions, trained the sampled carriers and the debriefing supervisors. The debriefing supervisors would debrief the carriers at the end of the day, transcribing the carrier's data to a FOSDIC (film optical scanning) form.

3. Familiarity of Observers With "Precise Cost-Related Demarcations". Carriers in the 1986 STS used everyday terms (see ATTACHMENT 1) that were mapped into street costing components (load, etc.). "...items of the carrier card are designed to make it easy for carriers to record their activities in terms that they are

¹⁸ Docket No. R87-1, USPS-7B

1 familiar with and **at the same time** provide the functional components used for
2 developing street activity costs."¹⁹ (**Emphasis added.**)

3 **4. Observers Fatigued, Too Busy, Resulting in Errors.** 1986 STS carriers
4 had to perform all their regular duties in addition to responding to the beeps, recording
5 their activities, and debriefing at the end of the day. Finally, the supervisors who
6 coordinated and oversaw the data collection were equally tasked with fulfilling their
7 regular jobs.

8
9 It is not my intent in the above observations to denigrate the 1986 study or refute
10 it. It is a commendable study. My point is that, in more cases than not, study costs,
11 operational constraints, and other factors affect a study's outcome. In addition, the
12 observations about the 1986 study show that Mr. Raymond's study is comparable to
13 studies previously accepted by the Commission.

14
15 **V. Summary – The New ES Work Sampling Database Is Reasonable And**
16 **Appropriate For City Carrier Costing**

17
18 Witness Raymond has put forth an excellent study of city carrier costs. The
19 database is reasonable, appropriate, and of high quality. Witness Baron has taken that
20 database and applied it correctly in his development of volume variable costs.
21 Furthermore, witness Baron has improved city carrier costing by using volumes from the
22 ES database to update the load time variability (LTV) analysis. The 1986 STS study
23 and the 1985 LTV obviously were performed at different times. Having both the STS
24 and LTV derived from the same, contemporaneous and current database is a
25 substantial improvement. Unfortunately, Witnesses Hay and Crowder have taken

¹⁹ Docket No. R87-1, USPS-7B, page 2.

1 peripheral issues and tried to discredit a well thought out and documented piece of
2 work. This rebuttal to their testimony has answered many of their criticisms and has
3 provided a commonsense rationale for the Commission to adopt these new valuable
4 refinements.

5

ATTACHMENT 1 to USPS-RT-14

STREET TIME SAMPLE CARRIER CARD

CARRIER NAME _____ TEST SERIAL NO. _____

BEEP: Number _____ Time _____

Mark A, B, C, or D --- (MARK ONLY ONE)

() A. CARRIER STOPPED (MARK ONLY ONE "AT")

() B. CARRIER DRIVING

MARK ONE

() C. CARRIER WALKING

"FROM" AND

() D. CARRIER RIDING

ONE "TO"

AT FROM TO

() () () OWN STATION

() () () DELIVERY STOP - CURBLINE

() () () DELIVERY STOP - NOT CURBLINE

() () () VIM ROOM OR DETACHED P.O. BOX UNIT

() () () COLLECTION BOX

() () () RELAY BOX

() () () VEHICLE PARKED

() () VEHICLE - PREPARING MAIL for Delivery

() () VEHICLE - LOADING OR UNLOADING at Station

MISCELLANEOUS ACTIVITIES

() (Specify:)

() (Specify:)

() (Specify:)

ADDITIONAL ACTIVITY CHARACTERISTICS

() () () DELIVERY STOP THAT BEGINS or ENDS ROUTE

() () () DELIVERY NOT ROUTINE

AT FROM TO

(ADDITIONAL REMARKS NEXT PAGE) (omitted from Attachment)