

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

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OFFICE OF THE SECRETARY

POSTAL RATE AND FEE CHANGES, 2000


Docket No. R2000-1

RESPONSES OF MAGAZINE PUBLISHERS OF AMERICA, INC.
WITNESS CROWDER TO INTERROGATORIES OF THE
UNITED STATES POSTAL SERVICE (USPS/MPA-T5-4-9)

(June 26, 2000)

The Magazine Publishers of America hereby submits the responses of witness Crowder to interrogatories USPS/MPA-T5-4-9, filed on June 12, 2000. Each interrogatory is stated verbatim and is followed by the response.

Respectfully submitted,



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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:

$$UVVC_i = \text{Volume-Variable Cost}_i / \text{Volume}_i$$

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 [$\epsilon_{C,i}$] times total cost (C):

$$VVC_i = C * \epsilon_{C,i}$$

$$\text{where: } \epsilon_{C,i} = \% \Delta C / \% \Delta V_i.$$

[Note that $\epsilon_{C,i}$ can also be expressed as $\partial C / \partial V_i * V_i / C$.]

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 $\epsilon_{C,i}$. Cost (C) must match in both elements, otherwise VVC_i is incorrect. When cost matches in both elements of the equation, the result becomes:

$$\begin{aligned} VVC_i &= C * \partial C / \partial V_i * V_i / C \\ &= \partial C / \partial V_i * V_i. \end{aligned}$$

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,

$$\begin{aligned} VVC_i &= C_{ES} * \% \Delta C_{LTV} / \% \Delta V_i, \\ &= C_{ES} * \partial C_{LTV} / \partial V_i * V_i / C_{LTV}, \\ &= C_{ES} / C_{LTV} * \partial C_{LTV} / \partial V_i * V_i, \end{aligned}$$

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 curblin
48	337	Curblin 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	Curblin 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.

DECLARATION

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

A handwritten signature in cursive script, reading "Antoinette Crowder".

ANTOINETTE CROWDER

Dated: June 26, 2000

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

June 26, 2000