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

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-T5-32-35)

(July 14, 2000)

The Magazine Publishers of America hereby submits the responses of witness Crowder to interrogatories USPS/MPA-T5-32-35, filed on June 30, 2000. Each interrogatory is stated verbatim and is followed by the response.

Respectfully submitted,

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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.

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.

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.

Antoinette Crowder

ANTOINETTE CROWDER

Dated: July 14, 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

July 14, 2000