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

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

INTERROGATORIES OF ADVO, INC.
TO UNITED STATES POSTAL SERVICE WITNESS
DONALD M. BARON (ADVO/USPS-T17-8-11)

Pursuant to sections 25 and 26 of the Rules of Practice, Advo, Inc. (Advo) directs the following interrogatories to United States Postal Service witness Donald M. Baron. If the witness is unable to respond to any interrogatory, we request that a response be provided by appropriate USPS witness capable of providing an answer.

Respectfully submitted,

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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

September 16, 1997

Interrogatories of ADVO. Inc. to USPS Witness Baron (USPS-T-17)

ADVO/USPS-T17-8. On page 16 of your testimony, you state:

> "Possible deliveries appears as an additional explanatory variable in equation (3) to account for the increase in load time per stop that occurs when the number of deliveries accessed by carriers at a given stop increases. This increase in load time might occur even if total volume delivered to the entire stop remains constant."

(a) Do you envision a load time per stop/actual deliveries relationship similar to the USPS run time/actual stops relationship developed from the FAT/CAT data base (*i.e.*, as actual stops/actual deliveries increase, actual run- time/load-time increase also)? Please explain.

(b) Do you view an increase in actual deliveries as a cause for increased load time on a stop (separate from increased load time resulting from increased volume on already covered deliveries)? Please explain.

(c) Refer to your calculation of a separate deliveries volume variability through the chain rule on page (6) of your testimony. Do you base this calculation on your view that volume is the indirect cause of additional "accesses" to delivery points (*i.e.*, actual deliveries) and therefore the additional load time required? Please explain.

(d) Are the estimated "delivery effect" variabilities in Tables 6 and 7 intended to reflect the variability of load time with respect to actual deliveries? Please explain.

ADVO/USPS-T17-9. Please consider the functional specification (GD,V) which explains load time on a multiple delivery stop as a function of the number of actual delivery points on the stop (D) and volume on the stop (V). Actual deliveries are also explained by volume through the function D(V).

(a) Under these assumptions and ignoring variables for containers and receptacles, do you accept that load time on the stop can be explained fully by stop volume through the following function:

$$L = G(D(V),V)$$

Please explain your response.

(b) Consider another function H(V) such that L = H(V) = G(D(V),V). Please confirm that the marginal load time cost with respect to volume is then:

$$\begin{aligned} dL/dV &= dH(V)/dV \\ &= dG(D,V)/dV \\ &= [(\partial G/(\partial D)*d(D)/dV] + (\partial G/\partial V). \end{aligned}$$

If you cannot confirm, please explain.

(c) Please confirm that load time volume variability is then given by:

$$\begin{aligned} (dL/dV)*(V/L) &= (dH(V)/dV)*V/H(V) \\ &= (dG(D,V)/dV)*V/G(D,V) \\ &= [(\partial G/\partial D)*d(D)/dV]*V/G+(\partial G/\partial V)*V/G. \\ &= [(\partial G/\partial D)*D/G]*[(d(D)/dV)*V/D]+(\partial G/\partial V)*V/G. \end{aligned}$$

If not, please explain why not.

(d) From (c) above, do you agree that the following two load time volume variability expressions are equivalent?

$$(dH(V)/dV)*V/H(V) = [(\partial G/\partial D)*D/G]*[(d(D)/dV)*V/D] + (\partial G/\partial V)*V/G.$$

If not, please explain why not.

(e) Please confirm that adding the term $[(\partial G/\partial D)*D/G]*[(d(D)/dV)*V/D]$ to both sides of the expression in (d) inflates load time variability for the multiple delivery stop by double counting the term. If you cannot confirm, please explain.

ADVO/USPS-T17-10. On page 16 of your testimony you state:

> "The only reason possible deliveries instead of actual deliveries appears on the right hand side of equation (3) is that the 1985 study that produced the data to estimate the load time equations recorded only possible deliveries."

(a) Please compare two multiple delivery stops, A and B, with the same volume level and actual number of deliveries. However, possible deliveries on stop B are twice those on stop A. Would you expect load time on each of the stops to be the same? Please explain fully.

(b) Please confirm that the number of possible stops per FAT/CAT route is included as a variable in FAT/CAT run time regressions to account for the possibility of greater stop time and distance covered in delivering mail as possible stops increase If you cannot confirm, please explain fully.

(c) Please confirm that delivery volume on a stop does not cause possible deliveries at that stop but does cause actual deliveries. If you cannot, please explain fully.

ADVO/USPS-T17-11. In your response to ADVO/USPS-T17-1 you state:

> ".. there are two differences in marginal cost and elasticity calculations between the two programs.... First, LOAD2.ELAST.CNTL calculates marginal cost and elasticities of MDR and BAM load time with respect to actual deliveries... Second, in order to derive marginal costs and elasticities with respect to actual deliveries, LOAD2.ELAST.CNTL sets the deliveries variable equal to actual deliveries.... In contrast, LOAD2OLD.ELAST.CNTL sets the deliveries variable equal to average possible deliveries."

(a) Please confirm that the LTV model was estimated using possible deliveries rather than actual deliveries. If you cannot, please explain why.

(b) Please confirm that if actual deliveries instead of possible deliveries data were used to develop the load time cost/volume functions, this procedure would have changed coefficient estimates for all variables in the LTV model. If you cannot, please explain why.

(c) Please confirm that estimated load time is less when estimated using average actual deliveries than when using average possible deliveries. If you cannot, please explain why.

(d) Please confirm that estimated average shape volume load time (as used in the shape variability calculations) is less when estimated with average actual deliveries than when estimated with average possible deliveries. If you cannot, please explain why.

(e) Please confirm that the marginal shape volume load time (as used in the shape variability calculations) is not changed by the use of actual deliveries instead of possible deliveries. If you cannot, please explain why.

(f) Please confirm that the increase in the shape volume variabilities appearing in TABLES 6 and 7 of your testimony over the shape volume variabilities appearing in TABLES 10 and 11 is completely due to your substitution of average actual deliveries per stop for average possible deliveries per stop in the total per stop load time calculation for SDR and BAM stop types. If you cannot, please explain why.