

BEFORE THE
POSTAL RATE COMMISSION

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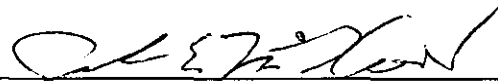
POSTAL RATE AND FEE CHANGES, 2000

POSTAL RATE COMMISSION
OFFICE OF THE SECRETARY
DOCKET NO. R2000-1

ANSWERS OF UNITED PARCEL SERVICE
WITNESS KEVIN NEELS TO INTERROGATORIES
OF THE UNITED STATES POSTAL SERVICE
(USPS/UPS-T1-34 through 37)
(June 30, 2000)

Pursuant to the Commission's Rules of Practice, United Parcel Service hereby files and serves the answers of UPS witness Kevin Neels to the following interrogatories of the United States Postal Service: USPS/UPS-T1-34 through 37.

Respectfully submitted,



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USPS/UPS-T1-34. Please refer to your response to USPS/UPS-T1-2(c). The interrogatory read, in part, "if you contend the 100 percent variabilities represent the elasticity of 'X' with respect to 'Y,' provide a precise definition of 'X' and 'Y.'" You responded, "'X' equals mail processing labor cost for a specific MODS pool. 'Y' represents the number of pieces of mail of a specific subclass delivered by the Postal Service." Please also refer to your response to USPS/UPS-T1-4.

- a. Please confirm that the "variabilities" defined in your response to USPS/UPS-T1-2(c), in mathematical notation, are the elasticities $\partial \ln C_i / \partial \ln DV_j$, where C_i denotes the labor cost for mail processing cost pool i and DV_j denotes the pieces of mail of subclass j "delivered by the Postal Service." If you do not confirm, please provide the formula you believe to be correct and a full explanation of how it relates to your response to USPS/UPS-T1-2(c).
- b. Please confirm that "100 percent variabilities" as defined in your response to USPS/UPS-T1-2(c) imply, in mathematical notation, $\partial \ln C_i / \partial \ln DV_j = 1$, where the variables are defined as in part (a) of this interrogatory. If you do not confirm, please provide a detailed derivation of the mathematical relationship between the elasticity $\partial \ln C_i / \partial \ln DV_j$ and the "100 percent variabilities" you believe to be correct.

Response to USPS/UPS-T1-34.

- (a) Confirmed.
- (b) Confirmed.

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USPS/UPS-T1-35. Please refer to your response to USPS/UPS-T1-2(d). The interrogatory requested that you provide the "precise economic interpretation(s) of the distribution key shares used by Mr. Sellick to compute mail processing "costs" by cost pool and subclass." You responded, "Mr. Sellick's IOCS-based distribution key shares represent the shares of costs, by MODS pool, accounted for by the various mail subclasses." Please also refer to your response to USPS/UPS-T1-2(b), where you state, "Dividing Mr. Sellick's subclass costs by the corresponding RPW volumes does give the best approximations of the partial derivatives of mail processing labor costs with respect to subclass volumes that are available in this record." Please also refer to Mr. Sellick's response to USPS/UPS-T2-1(c), in which Mr. Sellick confirms that the subclass costs he computes can be expressed as "the product of total cost for the pool, a volume-variability factor equal to (or nearly equal to) one (or 100 percent), and a distribution key share for the cost pool and subclass derived from IOCS data."

- a. Please confirm that the "costs" to which you refer in your response to USPS/UPS-T1-2(d) are volume-variable costs, by MODS pool. If you do not confirm, please explain fully.
- b. Please confirm that the "volume-variability factor" employed, explicitly or implicitly, by Mr. Sellick would be defined, in mathematical notation, by the formula you confirmed or provided in response to USPS/UPS-T1-34(a). If you do not confirm, please explain fully.

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- c. Please confirm that the formula confirmed by Mr. Sellick can be represented, in mathematical notation, as $VVC_{ij} = C_i \cdot \varepsilon_i \cdot d_{ij}$, where VVC_{ij} is the volume-variable cost in cost pool i for subclass j, C_i is defined in interrogatory USPS/UPS-T1-34(a), ε_i is the volume-variability factor (elasticity) you confirmed or provided in response to USPS/UPS-T1-34(a), and d_{ij} is the IOCS-based distribution key share computed by Mr. Sellick. If you do not confirm, please provide the formula you believe to be correct, and explain its derivation fully.
- d. Please confirm that your response to USPS/UPS-T1-2(b) implies, in mathematical notation, $VVC_{ij} / V_j^{RPW} = C_i \cdot \varepsilon_i \cdot d_{ij} / V_j^{RPW} \cong \partial C_i / \partial V_j^{RPW}$, where V_j^{RPW} is the RPW volume of subclass j, and the symbol $\cong$ denotes "approximately equals." If you do not confirm, please provide the formula you believe to be correct, and explain its derivation fully.
- e. Please describe in detail all assumptions needed for the approximation $C_i \cdot \varepsilon_i \cdot d_{ij} / V_j^{RPW} \cong \partial C_i / \partial V_j^{RPW}$ to hold. For each assumption, please describe in detail and provide all quantitative evidence you have to validate the assumption. If you have no quantitative evidence to validate an assumption, please so indicate.

Response to USPS/UPS-T1-35.

- (a) Confirmed.
- (b) Confirmed.
- (c) Confirmed.

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(d) Confirmed.

(e) A volume variability of 100 percent for some cost pool i implies that:

$$(i) C_i = \sum_j \alpha_{ij} V_j^{RPW}.$$

Inspection of this equation shows that if all volumes double, costs in this pool will also double, as 100 percent volume variability would imply. In this context it is the case that:

$$(ii) \partial C_i / \partial V_j^{RPW} = \alpha_{ij}$$

$$(iii) VVC_{ij} = \alpha_{ij} \cdot V_j^{RPW}$$

$$(iv) \sum_j VVC_{ij} = \sum_j \alpha_{ij} V_j^{RPW} = C_i$$

$$(v) d_{ij} = VVC_{ij} / \sum_k VVC_{ik} = VVC_{ij} / C_i$$

$$(vi) \varepsilon_i = 1$$

$$(vii) C_i \cdot \varepsilon_i \cdot d_{ij} / V_j^{RPW} = VVC_{ij} / V_j^{RPW} = \alpha_{ij} = \partial C_i / \partial V_j^{RPW}$$

Equations (ii) through (vii) all follow from equation (i) and the definitions of VVC_{ij} and d_{ij} . Equation (i) follows from the definition of 100 percent volume variability. Thus, the only condition that must hold for the “approximation” given in the interrogatory to hold is for volume variability to equal 100 percent.

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USPS/UPS-T1-36. Please refer to your response to USPS/UPS-T1-3(c). You state, “The relationship between incremental RPW volume and incremental FHP volume will depend upon routing, and, for a given routing, the two will generally vary in direct proportion.” You subsequently describe some ways in which “exceptions to direct proportionality between RPW volume and FHP volume may sometimes occur,” but contend “Any departures from direct proportionality between FHP volume and RPW volume would have an equal or greater effect on the relationship between TPF and RPW volume.”

- a. If “routing” is defined as the routing of a piece of mail *within* a mail processing facility, would it be correct to say, “The relationship between incremental FHP volume and incremental TPF (or TPH) volume will depend upon routing, and, for a given routing, the two will generally vary in direct proportion”? If not, please explain fully why not.
- b. Please confirm that some of the possible “exceptions to direct proportionality” you describe may have the effect of decreasing FHP per RPW piece (e.g., increased presorting and/or drop-shipping of mail). If you do not confirm, please explain fully.
- c. Please indicate whether you have any quantitative evidence to support your contention that, “Any departures from direct proportionality between FHP volume and RPW volume would have an equal or greater effect on the relationship between TPF and RPW volume.” If so, please provide and describe in detail all such evidence.

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- d. Please explain whether there are possible exceptions to your statement, "Any departures from direct proportionality between FHP volume and RPW volume would have an equal or greater effect on the relationship between TPF and RPW volume." For instance, could a "reconfiguration of the network" add an intermediate processing step without necessarily increasing the number of sorts required to "finalize" a piece of mail to its destination? Please explain.

Response to USPS/UPS-T1-36.

(a) It is probably fair to say that for a given "routing" as defined in the interrogatory, TPH (or TPF) and FHP will vary in direct proportion. However, my ability to answer this question in the affirmative depends heavily on the qualification "for a given routing." As I explain on pages 5-16 of my testimony, I believe that "routing" – meaning, in this context, which sorting activities are present in a plant and how mail flows are organized among them – depends in significant ways on the volume of mail being processed. Assuming such effects away, as this interrogatory does, limits the applicability of my response to an artificial situation likely to be of little practical relevance.

(b) In my response to USPS/UPS-T1-3(c) I did not cite increases in presorting or drop-shipping of mail. However, I do confirm that increases in the presorting or drop-shipping of mail would have the effect of reducing FHP per RPW piece.

(c) I have no such quantitative evidence. However, I note that FHP measures mail coming into the plant, while TPH measures the amount of mail handling within the

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plant. Every time a piece of mail generates an FHP count, it also by definition generates a TPH count. It may or may not subsequently generate additional TPH counts. My analysis shows that the relationship between FHP and TPH is not one of proportionality. Thus, any nonlinearity in the relationship between RPW volume and FHP volume is transmitted to the relationship between RPW volume and TPH, and probably amplified. Although I cannot exclude the logical possibility that a change in the relationship between RPW volume and FHP could generate an offsetting change in the relationship between RPW volume and the amount of subsequent handling mail experiences, I am unable to construct a plausible and relevant example in which such a situation occurs.

(d) See my response to USPS/UPS-T1-36(c).

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USPS/UPS-T1-37. Please refer to your responses to USPS/UPS-T1-5(c) and (d). The interrogatories asked you to explain how "increases in cost associated with growth in the number of addresses" are "causally attributable to a subclass of mail" as volume-variable (or marginal) cost (in USPS/UPS-T1-5(c)) and incremental cost (in USPS/UPS-T1-5(d)). Your response to USPS/UPS-T1-5(c) discusses the cost effects of "[a]ccommodating the volumes associated with such new delivery points" and states, "Costs associated with these modifications are causally related to the volume growth caused by the creation of new households and businesses." Your response to USPS/UPS-T1-5(d) reads, "See my response to part (c), above."

- a. Please explain whether your response implies that you believe there are no cost consequences of growth in delivery points *independent* of any associated mail volumes.
- b. Your response to USPS/UPS-T1-5(c) does not indicate how the "[c]osts associated with these modifications" are causally attributable to a subclass of mail as volume-variable (or marginal) cost. Please explain fully how, if at all, "[c]osts associated with these modifications" are causally attributable to a subclass of mail as volume-variable (or marginal) cost" as originally requested in interrogatory USPS/UPS-T1-5(c).
- c. Your response to USPS/UPS-T1-5(d) does not indicate how the "[c]osts associated with these modifications" are causally attributable to a subclass of mail as incremental cost. Please explain fully how, if at all, "[c]osts associated with these

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modifications" are causally attributable to a subclass of mail as incremental cost as originally requested in interrogatory USPS/UPS-T1-5(d).

- d. If your response to part (a) indicates that you believe there are, or may be, cost consequences of growth in delivery points *independent* of any associated mail volumes, please explain fully how, if at all, such costs are causally attributable to a subclass of mail as volume-variable (or marginal) cost.
- e. If your response to part (a) indicates that you believe there are, or may be, cost consequences of growth in delivery points *independent* of any associated mail volumes, please explain fully how, if at all, such costs are causally attributable to a subclass of mail as incremental cost.

Response to USPS/UPS-T1-37.

(a) In the hypothetical situation in which there was a new delivery point that never received any mail, there might be some minimal costs associated with the creation of that delivery point. However, I have to question whether this hypothetical situation in fact ever occurs, and whether it has any practical relevance.

(b) In principal, one could determine the subclass distribution of the costs of modifying the network to accommodate new delivery points by recording separately by subclass the first pieces delivered to new addresses and the subsequent pieces, and then regressing costs of the two different volume vectors. The estimated coefficients on first pieces delivered by subclass would give the required subclass specific costs.

(c) See my response to USPS/UPS-T1-37(b).

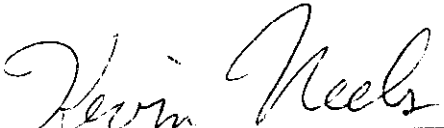
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(d) In the hypothetical situation of a delivery point that never generated any mail volume, it would not be possible to assign cost responsibility to individual mail subclasses. However, as I indicated in my response to USPS/UPS-T1-37(a), I question whether such situations actually occur.

(e) See my response to USPS/UPS-T1-37(d).

DECLARATION

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


Kevin Neels

Dated: 6/30/00

CERTIFICATE OF SERVICE

I hereby certify that I have this date served the foregoing document by first class mail, postage prepaid, in accordance with Section 12 of the Commission's Rules of Practice.



John E. McKeever
Attorney for United Parcel Service

Dated: June 30, 2000.
Philadelphia, Pa.

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