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

POSTAL RATE AND FEE CHANGES PURSUANT TO PUBLIC LAW 108-18	Docket No. R2005-1

DIRECT TESTIMONY
OF
JOSEPH E. NASH
ON BEHALF OF
UNITED STATES POSTAL SERVICE

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AUTOBIOGRAPHICAL SKETCH

My name is Joseph E. Nash and I am a Senior Consultant in the Public Sector Practice at International Business Machines Business Consulting Services (IBM) in Fairfax, Virginia. I have been with IBM since 2002 when it acquired PricewaterhouseCoopers (PwC) Consulting. Previously, I was with PwC Consulting since 1998.

My work at IBM has been devoted to serving the United States Postal Service and I am a member of IBM's Postal Service account team. I have worked on many projects for the United States Postal Service, specializing in transportation network operations, cost estimation, and financial analysis. My experience with the Postal Service includes volume variable cost analysis in transportation. I have provided analytical support to several witnesses in the area of transportation costing during the past two omnibus rate cases (Witnesses Pickett, Xie, and Bradley in R2000-1; Witnesses Pickett, Bradley, Takis, and Hatfield in R2001-1).

Most recently, I have been working with the Postal Service to establish and implement the transportation agreement with Federal Express. This work has consisted of financial and operational consulting designed to estimate the financial implications of the agreement and to assist in developing the implementation plan.

Over the past six years, I have visited a number of Postal Service field offices including airport mail facilities (AMFs), bulk mail centers (BMCs), processing and distribution centers (P&DCs), associate post offices (AOs), and mailer plants. During these visits, I observed transportation operations, mail processing operations, and delivery operations.

I received a bachelor's degree in Economics from The College of William and Mary in 1998, *magna cum laude*.

ASSOCIATED LIBRARY REFERENCES

I am sponsoring the following Library References which are associated with my testimony:

USPS LR-K-35: FedEx Dayturn Variability Model

This library reference contains printed and electronic versions of the spreadsheets that were used to develop the Federal Express (FedEx) variability factors that are described in my testimony.

USPS LR-K-36: Calculation of Alaska Air Adjustment

This library reference contains printed and electronic documentation of the spreadsheets and computer programs used to calculate the Alaska Air adjustment.

USPS LR-K-38: Amtrak Rollforward Adjustments

This library reference contains printed and electronic versions of the spreadsheets that were used to develop the Amtrak rollforward adjustments that are described in my testimony.

USPS LR-K-34: Plant Load Study update

This library reference contains printed and electronic documentation of the Plant Load study design, sampling methodology, computer programs, and results used to calculate the Highway and Rail Plant Load distribution keys that are described in my testimony.

USPS LR-K-33: Density Study update

This library reference contains printed and electronic documentation of the Density study design, sampling methodology, computer programs, and results used to calculate the density factors that are described in my testimony.

USPS LR-K-37: Estimation of Priority Mail Weight and Average Haul by Zone

This library reference contains printed and electronic documentation of the computer programs used to calculate base year Priority Mail air volumes by zone.

ROADMAP

The following roadmap discusses the derivation of elements of my testimony and the witnesses to whom I provide my analysis:

1. Derivation of variability factors for non-fuel transport charges under the FedEx Day Turn agreement: I have relied on the testimony of Witness Bradley (USPS-T-31) for the theoretical arguments for a variability factor. These factors are provided to witness Meehan (USPS-T-9).
2. Changes to the CNET distribution key: I have relied on the testimony of Witness Hunter (USPS-T-3) for the BY2004 FedEx Day turn PQ1 distribution key from USPS LR-K-29. These factors are provided to witness Meehan (USPS-T-9).
3. Calculation of the Alaska air adjustment factors: These factors are provided to witness Meehan (USPS-T-9) and witness Waterbury (USPS-T-10).
4. Calculation of Amtrak Rollforward Adjustments: I have relied on the testimony of Witness Hunter (USPS-T-3) for the BY2004 Amtrak distribution keys from USPS LR-K-28. These factors are provided to witness Waterbury (USPS-T-10).
5. Update of surface density factors: These factors are provided to witness Meehan (USPS-T-9).
6. Update of Plant Load distribution keys: These factors are provided to witness Meehan (USPS-T-9).

I. PURPOSE AND SCOPE

The purpose of my testimony and the library references I sponsor is to provide certain information related to transportation costs. There are seven issues discussed in my testimony:

1. Derivation of variability factors for non-fuel transport charges under the FedEx Day Turn agreement
2. Changes to the CNET distribution key
3. Calculation of the Alaska air adjustment factors
4. Development of the distribution of weight by zone of Priority Mail moved on air transportation
5. Calculation of Amtrak Rollforward Adjustments
6. Update of surface density factors
7. Update of Plant Load distribution keys

The programs and spreadsheets used to make these changes are described in detail in Library References USPS-K-33 through USPS-K-38.

II. FEDEX NON-FUEL TRANSPORT VARIABILITY FACTORS

The Postal Service contracts with FedEx to carry mail on its daytime air network. Under the contract, the Postal Service incurs expenses relating to a variety of activities provided by FedEx. These expenses fall into three categories: handling, fuel, and non-fuel transport. Handling charges are incurred for each item handled and scanned at FedEx hubs. These are treated as 100 percent variable with volume because the expenses increase proportionately with the number of scans. Similarly, a fuel charge is assessed for each cubic foot of capacity purchased. Since increases in mail volume result in proportionate increases in cubic feet of capacity required to handle that volume, fuel charges are also treated as 100 percent variable with volume. As the contract was originally written, non–fuel transport charges were incurred at a fixed rate per cubic foot of capacity purchased. As with handling charges and fuel charges, these were treated as 100 percent volume variable. In the Fall of 2001, the Postal Service faced a directive issued by the Transportation Security Agency to remove all mail in excess of 16 ounces that was not subjected to a pre-boarding security screening. This change resulted in a substantial increase in the cubic volume of mail flown on the FedEx Day Turn network. As a result, there have been addenda to the day turn contract. Instead of a flat rate for each cubic foot of capacity purchased, the addenda use a declining block rate structure. Throughout the base year, a declining block rate structure has been in place.

After a certain cubic capacity threshold is reached, the non-fuel transport charge for additional capacity decreases by a fixed amount to a lower rate. As more capacity is added and higher thresholds are reached, the rate steps down. This rate

structure results in marginal costs of capacity that are less than average cost. The implication for the variability is straightforward. Volume variability is defined as the cost elasticity with respect to volume. This is simply the ratio of marginal cost (MC) to average cost (AC). When MC<AC, the variability MC/AC is less than one.

Witness Bradley (USPS T-31) presents the analytical method for calculating a variability when costs are characterized by declining block rates. On the basis of this theoretical construct, I will describe the development and application of the variability using FedEx operational and contractual data. The calculation of the variability is conceptually straightforward. Using actual invoice data, I calculate the average daily cubic volume of mail by FedEx schedule block.[1] I then flow the schedule block average daily volumes through the rate tiers to determine the marginal cost. The marginal cost is just the last tier rate. To find the variability this marginal cost is multiplied by the average daily volume and then divided by the total cost for transporting the entire average daily volume based on the declining rate schedule.

The variability calculation takes into account any changes in rates that may be due to new addenda, changes due to scheduled annual increases in contract rates, differences in rates and volumes for weekday service and weekend service, and a ceiling placed on additional expenses incurred by applying the annual scheduled increase to the rate tiers. Using this calculation, I determine the marginal cost of non-fuel transport and the average of non-fuel transport for each schedule block. Summing across quarters, I calculate the quarterly marginal and average costs. The variabilities, MC/AC, that result from this calculation are 0.7547, 0.7328,

[1] FedEx schedule blocks are the planning timeframes that the Postal Service and FedEx use to schedule upcoming transportation.

0.7544, and 0.7537 for quarters one through four, respectively. These factors are applied to non-fuel transport charges in the Cost Segment 14 Excel workbook on the Inputs - Variabilities worksheet which is used by witness Meehan (USPS-T-9). These calculations are described in LR-K-35.

III. CHANGES TO THE CNET DISTRIBUTION KEY

CNET is the shorthand expression used to describe the dedicated air transportation used to meet peak holiday demand in December. In prior years, CNET expenses have been well in excess of $100 million, primarily because airlift is expensive during this period. In the last two years, however, CNET expenses have declined as the USPS has relied on less expensive alternatives such as highway and the FedEx Day Turn. In FY 2004 CNET expenses were just under $9.4 million, making the CNET cost pool one of the smallest in Cost Segment 14. One unfortunate offshoot of this operational change has been the difficulty in finding comprehensive origin-destination weight data on which to construct a distribution key. In FY 2002, the Postal Service changed the distribution of CNET costs. In previous years, CNET costs were attributed in a two-step process. First, CNET costs were split between volume-variable costs and premium costs. The volume-variable costs were what it would have cost to transport CNET volumes via commercial air carriers. Volume variable CNET costs were distributed to class and subclass of mail using a pound-mile based distribution key, because commercial air costs were incurred on a pound-mile basis. The premium costs were calculated as the difference between accrued CNET costs and volume-variable CNET costs. CNET premium costs were treated as incremental to Priority Mail. As described in

the testimony of witness Pickett (USPS-T-17) and USPS LR-J-39 in Docket No. R2001-1, the CNET distribution key used CNET operational weight data from distribution and routing (D&R) tags to aggregate TRACS distributions for commercial and network air costs.

In order to perform the calculations in the old methodology, two types of information were required. First, total pounds for CNET operations were needed to calculate the premium. Second, the relative D&R tag pounds were needed to construct the distribution key. In FY 2002, it appeared that substantial weight data were missing from the D&R tag operational data, making the accurate calculation of a premium impossible. The Postal Service however did continue to use the relative volumes of CNET D&R tag data to compute a distribution key. Since commercial air costs were no longer part of the calculation, this new key was based not on pound miles but on a weighted cubic-foot mile aggregation of FedEx Day turn, FedEx night turn, and Passenger Air TRACS distribution keys. Cubic foot miles were calculated by multiplying pound-miles by surface density factors. Owing to similar problems with the operational data, the same methodology was used in FY 2003.

In FY 2004 a new approach is being used. Rather than construct a key based on a weighted aggregation of TRACS distribution keys, I distribute CNET costs based on the FedEx Day Turn cost distributions for PQ1 (during which the Christmas mailing season occurred). This is appropriate for two reasons. First, CNET operational data continue to be suspect. Second, CNET distribution keys have been largely the result of the FedEx Day Turn TRACS distribution key. The FY03 FedEx Day Turn cost distribution is very similar to the FY03 CNET distribution as can be seen by comparing the two relevant distributions from Postal Quarter 2 of

FY 2003.[2] The FedEx Day Turn distribution factor for Priority Mail was 0.8911; the CNET distribution factor for Priority Mail was 0.8894. The respective First Class factors were 0.0801 and 0.0769. This is not surprising since data from the Day Turn were the major component of the CNET distribution key. These distribution factors are applied to the CNET cost pool in the Cost Segment 14 Excel workbook which is used by witness Meehan (USPS-T-9).

IV. ALASKA AIR ADJUSTMENT FACTOR

The Postal Service attributes only a portion of non-preferential Alaska air costs, using what has come to be known as the Alaska air adjustment factor. The factor is the ratio of the hypothetical costs of transporting mail in Alaska by highway divided by the actual cost incurred for non-preferential air service. The remaining Alaska non-preferential air costs are treated as institutional. The Alaska adjustment factor uses the same methodology as in the last omnibus case. In calculating the adjustment, the cost per cubic foot-mile by highway contract type is used. The calculation of this input can be found in USPS LR-K-36. The Alaska Adjustment factor for each of three years, BY2004, FY2005, and FY2006 are calculated in an Excel spreadsheet in USPS LR-K-36. The factor is applied in the workpapers of Witness Meehan (USPS-T-9); the 2005 and 2006 factors are applied to test year non-preferential Alaska air costs in workpapers of witness Waterbury (USPS-T-10).

[2] Christmas occurred in Postal Quarter 2 during FY03

V. BASE YEAR PRIORITY MAIL AIR VOLUMES BY ZONE

I have calculated the weight by zone of Priority Mail transported by air that has been traditionally provided to the Priority Mail rate design witness. This calculation has been performed in past cases and no changes have been made to the methodology. Library Reference LR-K-38 contains the program and results.

VI. AMTRAK ROLLFORWARD ADJUSTMENTS

At the end of FY 2004, Amtrak ceased carrying mail under contract to the Postal Service. This mail is now being transported by other modes. Therefore, an adjustment must be made to future costs to account for this operational change. According to the USPS Logistics office, Amtrak service has been replaced by a combination of air transportation and highway service. The air service expense for the transport of mail transported by air such as First-Class Mail and Priority Mail is expected to be $4 million in FY 2005. Accordingly, I distribute this cost to First-Class and Priority Mail based on the proportion of First-Class and Priority Mail only in the Amtrak cost distribution in FY 2004. This equation represents the calculation I perform:

First Class % = FC / (FC + PM); Priority Mail % = PM / (FC + PM)

Another $12 million will be spent to move Periodicals, Standard and Package Services using highway transportation in FY 2005. I distribute these costs to mail classes based on the relative proportions of these classes of mail moved on Amtrak in FY 2004 (akin to the methodology described above). These costs adjustments and cost distributions are performed in USPS LR-K-38 and provided to roll forward witness Waterbury (USPS-T-10).

VII. UPDATE OF TRACS SURFACE DENSITY FACTORS

The primary purpose of the 2001 Density Study was to gather cubic foot and weight information for the calculation of densities for the classes and subclasses of mail identified in the Transportation Cost System (TRACS). During a TRACS data collection test, sample mail is weighed, but cubic feet are not recorded. The density factors developed from this study will be used to convert the sample weights in TRACS to cubic feet. The density factors are estimates of the relative weight per cubic foot of mail loaded in mail transport equipment (e.g., letter trays, flat tubs, and hampers). These density factors have not been updated in approximately ten years. In FY 2001, a study update was conducted. This study is contained in USPS LR-K-33. As the study describes, trained data collectors deployed at sites throughout the country collected samples of mail in appropriate containers of known dimension and weighed the loaded containers. Multiple samples were taken for each mail category of interest on each day of the week. The surface density study is provided to Witness Hunter (USPS-T-3) for use in the relevant TRACS systems. The surface density is also provided to Witness Meehan (USPS-T-9) for use in Cost Segment 8 (Vehicle Service Drivers) and Cost Segment 14 (Transportation).

VIII. UPDATE OF PLANT LOAD DISTRIBUTION KEYS

Plant Loading is an operation in which the Postal Service receives mail at a mailer plant and transports it to bypass handling that would otherwise be required at one or more postal facilities. The distribution keys for mail moved on plant load contracts had not been updated since the mid-1990s. A study update was conducted in FY 2003. This study can be found in Library Reference K-34. It should

be noted that over the last 15 years, plant load activity has declined rather markedly. In FY04, Highway plant load expenses were only $31 million and rail plant load expenses were only a little over $5 million. The following table highlights the decline as a percentage of overall costs over time:

($000)	Highway PLD	Highway Total	% Spend	Rail PLD	Rail Total	% Spend
FY90	41,663	1,065,778	3.9%	66,514	254,639	26.12%
FY94	31,369	1,361,491	2.3%	27,051	248,925	10.87%
FY04	31,519	2,391,389	1.3%	5,116	183,419	2.79%

These distribution factors are applied to the highway and rail plant load cost pools in the Cost Segment 14 Excel workbook which is used by witness Meehan (USPS-T-9).