

Before the  
POSTAL REGULATORY COMMISSION  
WASHINGTON, DC 20268-0001

Modification of Costing Methods 2008-  
Postal Service Proposal Twelve

Docket No. RM2009-1

PUBLIC REPRESENTATIVE REPLY COMMENTS  
RELATED TO POSTAL SERVICE FLAT COST MODELS

December 10, 2008

In response to the Commission's Notice of Proposed Rulemaking on Costing Methods Used in Periodic Reporting (Order no. 130), Time Warner Inc. supports inclusion of new data developed by the Postal Service relating to the incidence of mechanized incoming secondary (IS) sorts for First Class, Standard Regular and Periodicals pieces.<sup>1</sup> Time Warner also describes why the incidence of manual sorting for Periodical pieces is likely higher than estimated by the new data. Time Warner at 16-17. They also recognize that underestimation of flat manual sorting costs is an important issue requiring resolution. *Id.* at 18. Eliminating or drastically reducing the difference between modeled manual sorting costs and the related CRA control totals would dramatically reduce the overall total modeled/CRA cost difference. The Public Representative agrees with Time Warner's comments in this regard and submits the following amplifying comments for consideration.

In Modification 8, the Postal Service proposes a new method for calculating the percentage of non-carrier route flat volume that passes through mechanized IS

---

<sup>1</sup> Initial Comments of Time Warner Inc. in Response to Order No. 130, December 1, 2008 at 15 (Time Warner).

sorting. This method effectively adjusts the previous set of coverage factors applied to machinable mail passing through an IS sort. The Postal Service proposes to calculate the new percentage by dividing TPH for mechanized IS flat pieces using MODS data by the total First Class, Standard and Periodicals non-carrier route pieces from the RPW. The resulting figure of 74.3 percent is virtually the same as the previous figure of 74.7 percent used in the Annual Compliance Determination (ACD) and calculated using another method. Therefore the new figure would appear to validate the previous assumption that even in facilities where piece sorting equipment exists, some pieces entering these facilities still receive a manual IS sort.<sup>2</sup>

Time Warner supports the Postal Service's new approach. However, because the new figure applies to all flat volumes, Time Warner believes that the portion of mechanized sorting applying to Periodicals is probably lower for several reasons. First, Periodicals are more likely than other flats to destinate to facilities without flat sorting equipment. Even when mechanized sorting is possible, the incidence of manual sorting for Periodicals is higher than the average because they are entered at lower volumes per mailing and are generally less machinable compared to other flat pieces. Time Warner also reiterates that there is a significant gap between manual sorting costs and the respective CRA totals. According to them, correcting for the higher incidence of mechanized IS sorting for Periodicals would help close the gap.

---

<sup>2</sup> Annual Compliance Determination, March 27, 2008 at 71-72 (ACD). The Commission continued relying on a key assumption from Docket No. R2006-1 that the 85 percent adjustment factor only applied to facilities with flat sorting equipment. Therefore the previous coverage factor for machinable IS sortation was calculated as  $.747 = .85 * .8788$ , where  $.8788$  is the sum of the equipment related Periodicals coverage factors documented in USPS-LR-1-44, Docket No. R2006-1.

The Public Representative also supports the Postal Service's change in method for calculating a flat coverage factor for IS mechanized sorting. It represents an important step for developing more precise and disaggregated piece sorting coverage factors using data that are readily available and annually updated. At the same time, the Public Representative would also support extending such a direct method for calculating coverage factors to other piece sort schemes. In particular, for reasons given below, there appears to be a sound basis for believing that the present set of coverage factors might understate the extent of flat manual sorting at the system level.

#### PAST AND PROPOSED ADJUSTMENTS OF COVERAGE FACTORS

In the FY 2007 ACD, the Commission adjusted the 12.12 percent Periodicals coverage factor for manual IS piece sorts based on a number of qualitative factors. ACD at 72. This unadjusted figure represents a sampling estimate of total Periodicals volume destinating to facilities without mechanized sorting capacity.<sup>3</sup> The Commission further adjusted this figure by assuming that 15 percent of IS piece sorts at mechanized facilities (87.88 percent of the total) would actually receive a manual IS sort at satellite DDUs. Thus the unadjusted coverage factor was increased to about 25 percent ( $.2530 = .1212 + .8788 \cdot .15$ ), effectively doubling the scope of manual sortation.

Further in R2006-1, Postal Service witness McCrery testified that the percentage of flat pieces receiving a manual IS sort was even higher (44.7 percent).<sup>4</sup>

---

<sup>3</sup> USPS-LR-L-44, Docket No. R2006-1.

<sup>4</sup> PRC Opinion R2006-1 at 339.

Accepting the unadjusted 12.12 percent figure, witness McCrery's estimate implies that over one third of the pieces (37 percent) entering mechanized facilities are manually sorted. Fortunately, the Postal Service's new estimate appears to have resolved this large difference with a figure that is remarkably close to the estimate used last year by the Commission.

However absent any other adjustments, the Postal Service continues to apply the unadjusted coverage factors for all other piece sort levels. Yet as Time Warner notes, in R2006-1, witness McCrery testified that a portion of non-carrier route flats might be sorted manually at mechanized sites, regardless of sorting level, for any number of reasons. Time Warner at 17. The reasons cited by witness McCrery are not exceptions. They appear to be endemic to plant level operational realities.

For example in explaining why manual sortation could occur at mechanized facilities, witness McCrery states that "mailings could be entered after the automation incoming secondary processing window had expired". *Id.* The Public Representative believes that the "tightness" of mechanized processing windows, to which witness McCrery refers, is driven in large part by the large number of sortation schemes and necessary turn-around times when switching from one scheme to another. Therefore unless a particular mailing arrives before the initial sorting scheme corresponding to its level of presort begins, pieces from the mailing are likely to be manually sorted.

For example In R2001-1, witness Kingsley testified that on average each flat sorting machine is subject to 10.71 sort plan changes.<sup>5</sup> Under these conditions it can

---

<sup>5</sup> Direct Testimony of Linda A. Kingsley on Behalf of the United States Postal Service, September 24, 2001, at 31 (USPS-T-39).

be expected that operational managers would need to schedule start times for initial sorting runs well in advance of dispatch times, while at the same time ensuring subsequently that sorting equipment is utilized close to peak capacity. This is not an easy task, especially when flow rates for pieces entering facilities are uneven. For example, if start times are too early, then there is a risk that sorting equipment will incur excess capacity before dispatch times are reached. On the other hand if start times are too late, then dispatch times will be missed for pieces sorted on the last set of runs. Witness McCrery gives a clear example of the latter when he states “mail for a class with significantly higher volume (e.g. Standard Mail) could be given processing precedence over mail for a class with lower volume if classes are processed to maintain a separation and the equipment cannot be used to finalize both mail classes within the processing window”. *Id.*

However regardless of actual start times, the window for entering pieces into a mechanized piece sorting stream can be expected to be limited once initial runs begin. For example assume that there are (X) number of incoming primary (IP) sorting schemes assigned to a particular machine in a particular facility. The individual runs on that machine can then be ordered from one to (X). Further, suppose a particular mailing arrives requiring a sort on a particular run (J) within the sequence. If the mailing arrives before run (J) starts, allowing for enough container handling and mail prep lead time, then presumably pieces from that mailing are sorted on run (J) and the subsequent corresponding IS sort. However if the mailing arrives too late for run (J), then at least a manual IP sort for that mail can be expected. Of course, time

restrictions for five digit presorted mailings are not as tight. These can arrive later before mechanized IS sorts begin.

For these reasons, it appears inevitable that some permanent level of manual sorting is always required even for bundles entering mechanized facilities. Further, it would appear that the incidence of manual sorting will vary directly with the number of sorting passes required. That is a greater percentage of pieces entered at less finely presorted levels will be manually sorted because mechanized processing windows for these pieces are tighter.

For the upcoming FY 2008 ACR, the Public Representative recommends that all coverage factors be adjusted in a manner similar to what the Postal Service proposes for IS piece sorts. The current set of factors assume unrealistically that all pieces entering mechanized facilities are equipment sorted. To this end, it might be possible to match billing determinants volume data with MODS TPH data at the appropriate level of detail. At a minimum, the Postal Service's new figure of 74.3 percent for IS sorts should be applied to all other piece sorts until a suitable alternative is found.

In addition to the changes discussed by Time Warner, this adjustment alone would increase total Periodicals modeled costs by shifting the mechanized/manual sorting percentages at all presort levels. Any further adjustments necessary to reach CRA control totals can be achieved through the application of cost pool specific adjustment factors, as described earlier by the Public Representative in the initial comments.

## APPENDIX

### THE EFFECT OF PIECE SORTING DEPTH ON COVERAGE FACTORS

The example presented below demonstrates how sorting depth can affect coverage factors. Suppose for a particular facility, we assume one IP sort scheme and  $N$  number of IS schemes, one for each of the  $N$  number of satellite DDUs. Then suppose we define the total mail processing window at the facility in  $T$  time units; sorting equipment idle time before the IP sort starts as  $T_i$ ; total machine run time as  $T_r$ ; and machine fixed time for set-ups and take-downs between sort schemes as  $t_f$ . Then we can define the total processing window as the sum of the indicated elements,  $T = T_i + T_r + T_f$ , where  $T_f = (1 + N) * t_f$ , if the last mechanized sorting run is completed just before dispatch.

Also assume that facility volume,  $V$ , is sorted to the three digit level and enters the facility throughout the processing window at a uniform arrival rate  $r_a = V/T$ . Therefore total pieces arriving into the facility through  $T_i$  time must be  $T_i * r_a$ . Further because all pieces that are equipment sorted must have entered the facility by time  $T_i$ , then  $T_i * r_a$  must also be the number of pieces that are equipment sorted in two passes. Therefore we have:

$$T_i * 2 * r_a = T_r * p, \quad (1)$$

where  $p$  is the productivity rate for machine run time. That is total equipment related piece sorts, defined on the RHS, are limited to the number of piece handlings required for pieces entering the facility through time  $T_i$ , defined on the LHS.

Substitution for  $T_i$ , then gives:

$$\begin{aligned} T &= T_r * [1 + p / (2 * r_a)] + T_f \\ &= T_r * (2 * r_a + p) / (2 * r_a) + T_f, \end{aligned}$$

and the solution for total run time is:

$$T_r = (T - T_f) * 2 * r_a / (2 * r_a + p). \quad (2)$$

As expected, total equipment run time varies inversely with total fixed time,  $T_f$ ; directly with the total volume level entering the facility (changes in  $r_a$ ) and inversely with the productivity rate ( $p$ ). Using (1) and (2), total equipment sorted pieces are then defined by:

$$\begin{aligned} T_i * r_a &= T_r * p / 2 \\ &= (T - T_f) * r_a * p / (2 * r_a + p). \end{aligned}$$

Finally, because the total volume entering the facility is  $T * r_a$ , the coverage factor defining the fraction of total volume that is equipment sorted must be:

$$\begin{aligned} T_i * r_a / (T * r_a) &= T_i / T \\ &= [(T - T_f) / T] * p / (2 * r_a + p). \end{aligned}$$

Since both  $(T - T_f) / T$  and  $p / (2 * r_a + p)$  are less than one, the coverage factor is less than one. Also note that as volume increases, the coverage factor decreases, meaning that the proportion of pieces that are manually sorted increases. Because total run time increases as well,  $T_i$  is reduced and the number of pieces that are

manually sorted must also increase in absolute terms. Conversely if the productivity rate increases, then the coverage factor increases.

We can view the effect of depth of sort on the coverage factor by using the more general expression  $T_i/T = [(T - T_f)/T]^p / (n^*r_a + p)$ , where (n) is a sorting depth indicator. For example, ignoring the time taken for bundle sorting, with five digit presorted pieces,  $n = 1$  and the coverage factor increases. However in this case, the time required to bundle sort to the five digit level would effectively reduce (n) to some value between 1 and 2.

Respectfully Submitted,

William Charles Miller  
Public Representative

901 New York Avenue, N.W.  
Washington, D.C. 20268-0001  
(202) 789-6829  
e-mail: [william.miller@prc.gov](mailto:william.miller@prc.gov)