

Docket No. R2001-1

USPS-LR-J-118

**TY Cost Savings Estimate for Bundle Breakage Reduction
For Flats Mail**

Introduction

This library reference provides the supporting documentation and analyses used to estimate the test year cost savings associated with reduction in bundle breakage for flats mail. This is a Category 2 Library Reference associated with the testimony of witness Schenk (USPS-T-43). The methodology used in this analysis is described below.

This library reference relies on other witnesses' library references and testimony in this docket. The following sources are used:

- USPS-LR-J-61: flats mail processing cost models.
- USPS-LR-J-125, Table 125-1: test year before rates volumes.

Witness Patelunas (USPS-T-12) incorporates these cost savings estimates as final adjustments in the roll forward.

Organization

This library reference consists of one Excel Workbook (LR-J-118 Tables.xls) containing three spreadsheets: 'Table 1' (estimates for First-Class Mail), 'Table 2' (for Periodicals Mail), and 'Table 3' (for Standard Mail). These tables are also provided below. An electronic copy of the workbook is provided on the accompanying diskette.

The methodology used in this library reference for calculating the test year cost savings resulting from a 25 percent reduction in bundle breakage is similar for all three mail classes analyzed. This methodology is discussed in general below, with two exceptions noted afterward.

Witness Miller (USPS-T-24) has three flats mail processing cost models, corresponding to First-Class, Periodicals, and Standard Mail flats, as documented in USPS-LR-J-61. The first step in the estimation process for this library reference is to take each of these flats mail processing cost models and

eliminate the piggyback factors (in Sheet 'Piggybacks') from the cost calculations. There are two main steps used to eliminate piggyback factors from USPS-LR-J-61. Unless otherwise noted, each step is applied to the indicated spreadsheets in FCM.xls, Period.xls, and Standard.xls in USPS-LR-J-61. The first step is to set the piggyback factors given in cells B5:B11 in the spreadsheet 'Piggybacks' equal to 1.000.

The second step is to incorporate CRA costs without piggybacks in spreadsheet 'CRA Flats'. This step is achieved by the following steps: in USPS-LR-J-53 workbook Shp03usps.xls spreadsheet 'Pool', change the non-zero values in cells B29:B139 to 1.000 and in spreadsheet 'Class' change cells L7:L39 to 1.000; copy B21:BC21 from spreadsheet 'Flats(3)' in Shp03usps.xls; paste (with options special, values, and transpose) to cells H12:H65 in 'CRA Flats' in Period.xls in USPS-LR-J-61 (for FCM.xls copy cells B11:BC11, for Standard.xls copy cells B29:BC29). Column [13] with the column heading 'Total Mail Proc Unit Cost' in sheet 'CRA ADJ UNIT COSTS' provides the unit costs reported in column [2a] of Tables 1 – 3 in USPS-LR-J-118 (errata).

The resulting test year unit costs without piggyback factors are produced by the model in the sheet 'CRA ADJ UNIT COSTS.' These unit costs are shown in column [2a] of the 'Table 1' spreadsheet of LR-J-118 Tables (revised).xls for First-Class Mail (Tables 2 and 3 for Periodicals and Standard Mail, respectively).

The next step in the estimation process for this library reference is to run the modified cost models (i.e., those without piggyback factors) with the test year bundle breakage rates, which are 25 percent lower than the current bundle breakage rates. Two steps are needed to estimate the Test Year costs savings for a 25 percent reduction in bundle breakage rates. After the piggyback factor adjustments described in part (b) have been done, the next step is that the figure for the cell labeled [9] in sheet 'CRA ADJ UNIT COSTS' (i.e., for the CRA Proportional Adjustment, which is in cell F25 in FCM.xls, in cell F27 in

Periodicals.xls, and in cell F24 in Standard.xls) must be copied and pasted (values) to the same cell. Then the bundle breakage rates are adjusted by multiplying the current rates in cells C8, C10, C12, C14, D8, D10, D12, and D14 of sheet 'Package Data' in FCM.xls, Period.xls, and Standard.xls in USPS-LR-J-61 by 0.75. Column [13] with the column heading 'Total Mail Proc Unit Cost' in sheet 'CRA ADJ UNIT COSTS' then provides the unit costs reported in column [3a] of Tables 1 – 3 in USPS-LR-J-118 (errata).

The next step in the process is to calculate the cost savings that result from a 25 percent reduction in bundle breakage rates. This involves subtracting the test year unit costs without piggyback factors and with new bundle breakage rates from the test year unit costs without piggyback factors and with current bundle breakage rates by rate element. This difference is the test year unit cost savings by rate element for a 25 percent reduction in bundle breakage rates, and is shown in column [4a] of each table in LR-J-118 Tables.xls. Test year volumes by rate element (column [1a]) are applied to these unit cost savings estimates and the results (column [5a]) are summed across rate element to obtain an estimate of total mail processing cost savings due to a 25 percent reduction in bundle breakage rates.

As described below, there are two exceptions to the above methodology because the models in USPS-LR-J-61 do not include cost models for Within County Periodicals and Standard ECR flats.

For Within County Periodicals flats, the test year unit cost savings by rate element for Outside County Periodicals are applied to test year before rates Within County volumes to determine the total cost savings for a 25 percent reduction in bundle breakage rates for Within County Periodicals flats.

For Standard ECR, the test year unit cost savings for 3/5-Digit Nonauto Presort Standard mail is applied to test year before rates Standard ECR volume to

determine the total cost savings for a 25 percent reduction in bundle breakage rates for Standard ECR flats mail.

Table 1 (Revised): Cost Analysis of a 25 Percent Reduction in Bundle Breakage Rates (both initial and subsequent handlings) -- First-Class Presort

Rate Category	[1a] TYBR Volumes	[2a] Unit Cost (current breakage rates; in cents)	[3a] Unit Cost (incorporating a 25% reduction in breakage rates; in cents)	[4a] Cost difference (cents per piece)	[5a] Total Cost Difference
Nonauto Presort	230,127,844	20.9092	20.8977	0.0115	\$26,572
Mixed ADC Auto Presort	82,141,537	25.5410	25.5410	0.0000	\$0
ADC Auto Presort	43,997,187	20.0702	20.0550	0.0152	\$6,693
3-Digit Auto Presort	58,394,364	20.0331	20.0089	0.0242	\$14,139
5-Digit Auto Presort	477,333,746	13.8953	13.8799	0.0154	\$73,462
Total	891,994,678				\$120,865

[1a] USPS-LR-J-125, Table 125-1

[2a] Unit mail processing cost (without piggybacks) when First-Class Flats model (USPS LR-J-61) is run with current breakage rates

[3a] Unit mail processing cost (without piggybacks) when First-Class Flats model (USPS LR-J-61) is run with 25% reduction in breakage rates

[4a] [2a] - [3a]

[5a] [1a] * ([4a] / 100)

Table 2 (Revised): Cost Analysis of a 25 Percent Reduction in Bundle Breakage Rates (both initial and subsequent handlings) – Periodicals

Rate Category	(1a) TYBR Volumes	(2a) Unit Cost (current breakage rates, in cents)	Unit Cost (incorporating a 25% reduction in breakage rates, in cents)	Outside County (3a) rates, in cents	(4a) Cost difference (cents per piece)	(5a) Total Cost Difference (Outside County)	(6a) Within County TYBR Volumes	(7a) Total Cost Difference (Within County)
Basic Nonauto Presort	441,918,033	16.3783	16.2697	16.2697	0.1086	\$479,822	63,618,774	\$68,856
3-Digit Nonauto Presort	462,868,719	13.2407	13.1919	13.1919	0.0488	\$225,743	31,271,844	\$15,200
5-Digit Nonauto Presort	536,620,838	8.9102	8.9007	8.9007	0.0095	\$50,856	111,118,033	\$10,389
Carr Rte Nonauto Presort	3,917,676,293	4.3980	4.2548	4.2548	0.1432	\$5,609,704	510,925,160	\$728,097
Basic Auto Presort	144,680,162	13.2345	13.1979	13.1979	0.0366	\$52,920	740,114	\$270
3-Digit Auto Presort	1,113,186,555	11.2799	11.2734	11.2734	0.0065	\$72,361	2,671,212	\$173
5-Digit Auto Presort	2,422,383,053	8.2209	8.1966	8.1966	0.0243	\$588,771	26,526,551	\$6,402
Total	9,039,333,654					\$7,080,177		\$829,387

[1a] USPS-LR-J-125, Table 125-1

[2a] Unit mail processing cost (without piggybacks) when Periodicals Flats model (USPS LR-J-61) is run with current breakage rates

[3a] Unit mail processing cost (without piggybacks) when Periodicals Flats model (USPS LR-J-61) is run with 25% reduction in breakage rates

[4a] [2a] - [3a]

[5a] [1a] * ([4a] / 100)

[6a] USPS-LR-J-125, Table 125-1

[7a] [6a] * ([4a] / 100)

Table 3 (Revised): Cost Analysis of a 25 Percent Reduction in Bundle Breakage Rates (both initial and subsequent handlings) -- Standard Mail

Rate Category	[1a] TYBR Volumes	[2a] Unit Cost (current breakage rates; in cents)	[3a] Unit Cost (incorporating a 25% reduction in breakage rates; in cents)	[4a] Cost difference (cents per piece)	[5a] Total Cost Difference
Basic Nonauto Presort	961,554,953	12.6869	12.5926	0.0943	\$906,301
3-/5-Digit Nonauto Presort	1,640,876,134	8.3600	8.3257	0.0343	\$563,058
Basic Auto Presort	563,457,261	11.2502	11.2157	0.0345	\$194,166
3-/5-Digit Auto Presort	14,279,104,475	7.5530	7.5266	0.0265	\$3,779,283
Total Regular	17,444,992,822				\$5,442,808
Total CR	8,134,404,554			0.0342	\$2,783,377

[1a] USPS-LR-J-125, Table 125-1

[2a] Unit mail processing cost (without piggybacks) when Standard Flats model (USPS LR-J-61) is run with current breakage rates

[3a] Unit mail processing cost (without piggybacks) when Standard Flats model (USPS LR-J-61) is run with 25% reduction in breakage rates

[4a] [2a] - [3a]

[5a] [1a] * ([4a] / 100)

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Witness Miller (USPS-T-24) has three flats mail processing cost models, corresponding to First-Class, Periodicals, and Standard Mail flats, as documented in USPS-LR-J-61. The first step in the estimation process for this library reference is to take each of these flats mail processing cost models and

eliminate the piggyback factors (in Sheet 'Piggybacks') from the cost calculations. The resulting test year unit costs without piggyback factors are produced by the model in the sheet 'CRA ADJ UNIT COSTS.' These unit costs are shown in column [2a] of the 'Table 1' spreadsheet of LR-J-118 Tables.xls for First-Class Mail (Tables 2 and 3 for Periodicals and Standard Mail, respectively).

The next step in the estimation process for this library reference is to run the modified cost models (i.e., those without piggyback factors) with the test year bundle breakage rates, which are 25 percent lower than the current bundle breakage rates. Bundle breakage rates are given in sheet 'Package Data' in the cost models in USPS-LR-J-61. When the new bundle breakage rates are entered into the model in the 'Package Data' sheet, the resulting test year unit costs without piggyback factors and with new bundle breakage rates are produced by the model in the sheet 'CRA ADJ UNIT COSTS.' These unit costs are shown in column [3a] of the 'Table 1' spreadsheet of LR-J-118 Tables.xls for First-Class Mail (Tables 2 and 3 for Periodicals and Standard Mail, respectively).

The next step in the process is to calculate the cost savings that result from a 25 percent reduction in bundle breakage rates. This involves subtracting the test year unit costs without piggyback factors and with new bundle breakage rates from the test year unit costs without piggyback factors and with current bundle breakage rates by rate element. This difference is the test year unit cost savings by rate element for a 25 percent reduction in bundle breakage rates, and is shown in column [4a] of each table in LR-J-118 Tables.xls. Test year volumes by rate element (column [1a]) are applied to these unit cost savings estimates and the results (column [5a]) are summed across rate element to obtain an estimate of total mail processing cost savings due to a 25 percent reduction in bundle breakage rates.

As described below, there are two exceptions to the above methodology because the models in USPS-LR-J-61 do not include cost models for Within County Periodicals and Standard ECR flats.

For Within County Periodicals flats, the test year unit cost savings by rate element for Outside County Periodicals are applied to test year before rates Within County volumes to determine the total cost savings for a 25 percent reduction in bundle breakage rates for Within County Periodicals flats.

For Standard ECR, the test year unit cost savings for 3/5-Digit Nonauto Presort Standard mail is applied to test year before rates Standard ECR volume to determine the total cost savings for a 25 percent reduction in bundle breakage rates for Standard ECR flats mail.

Table 1: Cost Analysis of a 25 Percent Reduction in Bundle Breakage Rates (both initial and subsequent handlings) -- First-Class Presort

Rate Category	[1a] TYBR Volumes	[2a] Unit Cost (current breakage rates; in cents)	[3a] Unit Cost (incorporating a 25% reduction in breakage rates; in cents)	[4a] Cost difference (cents per piece)	[5a] Total Cost Difference
Nonauto Presort	230,127,844	20.8990	20.8877	0.0114	\$26,178
Mixed ADC Auto Presort	82,141,537	25.5286	25.5286	0.0000	\$0
ADC Auto Presort	43,997,187	20.0605	20.0456	0.0149	\$6,568
3-Digit Auto Presort	58,394,364	20.0234	19.9994	0.0239	\$13,970
5-Digit Auto Presort	477,333,746	13.8886	13.8734	0.0151	\$72,263
Total	891,994,678				\$118,979

[1a] USPS-LR-J-125, Table 125-1
 [2a] Unit mail processing cost (without piggybacks) when First-Class Flats model (USPS LR-J-61) is run with current breakage rates
 [3a] Unit mail processing cost (without piggybacks) when First-Class Flats model (USPS LR-J-61) is run with 25% reduction in breakage rates
 [4a] [2a] - [3a]
 [5a] [1a] * ([4a] / 100)

Table 2: Cost Analysis of a 25 Percent Reduction in Bundle Breakage Rates (both initial and subsequent handlings) -- Periodicals

Rate Category	[1a] TYBR Volumes	[2a] Unit Cost (current breakage rates; in cents)	Outside County		[4a] Cost difference (cents per piece)	[5a] Total Cost Difference (Outside County)	[6a] Within County TYBR Volumes	[7a] Total Cost Difference (Within County)
			[3a] Unit Cost (incorporating a 25% reduction in breakage rates; in cents)	[3a] Unit Cost (incorporating a 25% reduction in breakage rates; in cents)				
Basic Nonauto Presort	441,918,033	16.3434	16.2352	0.1082	\$478,301	63,618,774	\$68,856	
3-Digit Nonauto Presort	462,868,719	13.2125	13.1639	0.0486	\$224,985	31,271,844	\$15,200	
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5-Digit Auto Presort	2,422,383,053	8.2034	8.1793	0.0241	\$584,633	26,526,551	\$6,402	
Total	9,039,333,654				\$7,045,805		\$929,387	

[1a] USPS-LR-J-125, Table 125-1

[2a] Unit mail processing cost (without piggybacks) when Periodicals Flats model (USPS LR-J-61) is run with current breakage rates

[3a] Unit mail processing cost (without piggybacks) when Periodicals Flats model (USPS LR-J-61) is run with 25% reduction in breakage rates

[4a] [2a] - [3a]

[5a] [1a] * ([4a] / 100)

[6a] USPS-LR-J-125, Table 125-1

[7a] [6a] * ([4a] / 100)

Table 3: Cost Analysis of a 25 Percent Reduction in Bundle Breakage Rates (both initial and subsequent handlings) -- Standard Mail

Rate Category	[1a] TYBR Volumes	[2a] Unit Cost (current breakage rates; in cents)	[3a] Unit Cost (incorporating a 25% reduction in breakage rates; in cents)	[4a] Cost difference (cents per piece)	[5a] Total Cost Difference
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3-/5-Digit Nonauto Presort	1,640,876,134	8.3600	8.3258	0.0342	\$561,464
Basic Auto Presort	563,457,261	11.2502	11.2158	0.0344	\$193,944
3-/5-Digit Auto Presort	14,279,104,475	7.5530	7.5267	0.0264	\$3,766,763
Total Regular	17,444,992,822				\$5,427,504
Total CR	8,134,404,554			0.0342	\$2,783,377

[1a] USPS-LR-J-125, Table 125-1

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[3a] Unit mail processing cost (without piggybacks) when Standard Flats model (USPS LR-J-61) is run with 25% reduction in breakage rates

[4a] [2a] - [3a]

[5a] [1a] * ([4a] / 100)