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This document contains the necessary recalculated figures for 2018Q4, 2019Q1, and 2019Q2 as directed by the Surface Transportation Board in a decision served March 20, 2019. Not all pages of the RCAF filing are affected by the revised calculations requested by the Board; as such, only the relevant pages are included in this filing.

This submission is the AAR forecast of the second quarter 2019 All-Inclusive Index and Rail Cost Adjustment Factor, filed in Ex Parte No. 290 (Sub-No. 5) (2019-2) *Quarterly Rail Cost Adjustment Factor*. The versions of RCAF-related indices covered in this filing are: the All-Inclusive Index (initiated in the second quarter of 1985), the Unadjusted RCAF (produced since October 1982), the Adjusted RCAF (first published in the second quarter of 1989), and the RCAF-5 (created by the STB in its Ex Parte No. 290 (Sub-No. 7) decision served October 3, 1996). The table below summarizes the restated 2018Q4, 2019Q1, and 2019Q2 results. All quarters are shown on a 4Q\2017=100 base.

	<u>2018Q4</u>	<u>2019Q1</u>	<u>2019Q2</u>	<u>% Change</u>
All-Inclusive Index	108.1	107.1	106.7	-0.4
Preliminary RCAF	1.081	1.071	1.067	-0.4
Forecast Error Adjustment	-0.002	-0.013	-0.002	
RCAF (Unadjusted)	1.079	1.058	1.065	0.7
Productivity Adjustment Factor	2.3617	2.3593	2.3621	
RCAF (Adjusted)	0.457	0.448	0.451	0.7
PAF-5	2.5260	2.5235	2.5210	
RCAF-5	0.427	0.419	0.422	0.7

In its October 3, 1996 decision in Ex Parte No. 290 (Sub-No. 7), *Productivity Adjustment - Implementation*, the STB noted its intent to publish, in addition to the RCAF (Unadjusted) and RCAF (Adjusted), an RCAF-5 (i.e., a calculation of the productivity adjusted RCAF values as if the agency had always used a 5-year rolling average to calculate the productivity adjustment). In response to a request by STB staff, the AAR is including a calculation of the RCAF-5 in its quarterly RCAF filing. The AAR and its members, however, do not believe the publication of a third RCAF index is required or permitted by the applicable statute (49 U.S.C. § 10708) and do not endorse its publication.

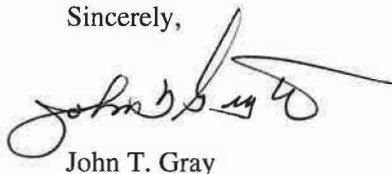
On March 5, 2019, the AAR submitted its quarterly filing as required. AAR was unable to use an updated productivity figure in its calculation because, at the time of its filing, the Board had not issued the productivity change for 2017 and for the 2013-2017 averaging period. Accordingly, AAR used last year's productivity figures in its filing and noted in its pleadings and workpapers that it had done so.

On March 11, 2019, the Board served a decision proposing to adopt 1.005 (0.5% per year) as the measure of average change in railroad productivity for the 2013-2017 period. In this decision, the Board noted that it had also used recalculated 2017 R-1 figures to compute the new productivity values. A prior decision, *Railroad Revenue Adequacy - 2017 Determination*, EP 552 (Sub-No. 22) et. al. (STB served December 6, 2018), made one time adjustments to remove accounting impacts of the Tax Cuts and Jobs Act on the 2017 Cost of Capital Determination, Revenue Adequacy Determination, and Uniform Railroad Costing System calculation, but did not indicate that those changes were applicable to the computation of the RCAF. As such, the AAR filing had not used recalculated figures.

On March 18, 2019, the Board received a comment in response to AAR's March 5, 2019 filing, in which a question was raised as to whether the AAR's calculations should have used the recalculated 2017 figures, which would affect the 2017 weights the AAR uses in its calculations. By decision served March 18, 2019, AAR was directed to file a response (by March 19) addressing the comment and to submit updated calculations reflecting the current productivity figure given in the March 11 decision. The AAR complied, and on March 20, 2019, the Board served another decision directing AAR to resubmit its RCAF calculations for 2019Q2 and the prior two quarters to reflect recalculated 2017 weights, to be filed by March 26, 2019.

Our non-proprietary work papers underlying this submission are e-filed herewith, in accordance with the ICC's order in Ex Parte No. 290 (Sub-No. 2), *Railroad Cost Recovery Procedures*, served February 8, 1990. We have notified Pedro Ramirez, in the STB office handling this proceeding, of our plan to e-file the submission and non-proprietary work papers. A copy of selected highly confidential work papers will be hand-delivered to Mr. Ramirez's Data Collection and Auditing Team. All work papers are available for STB inspection. Questions should be directed to me or Tiffany Placker (202 639-2381) of this office.

Sincerely,

A handwritten signature in black ink, appearing to read "John T. Gray", with a stylized flourish at the end.

John T. Gray

Attachments

**Restated 2018Q4, 2019Q1, and 2019Q2
All-Inclusive Index**

Ex Parte No. 290 (Sub-No. 5) (2019-2)

**Quarterly Rail Cost Adjustment Factor
Surface Transportation Board**

**Policy and Economics Department
Association of American Railroads**

March 26, 2019

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Index Weights

In the Ex Parte No. 290 (Sub-No. 2) final rules, issued in April 1981, the Interstate Commerce Commission mandated that the weights of each major cost component be updated annually. These "external" weights are calculated using expense data from Schedules 410 and 210 of the R-1 annual report filed with the Surface Transportation Board by the Class I railroads. The weights are typically updated with the fourth quarter projection.

The 2017 weights were originally used in the fourth quarter of 2018. A decision served by the Board on March 20, 2019 directed the AAR to recalculate the 2017 weights using updated R-1 figures. Revised 2017 weights, original 2017 weights, and 2016 weights are shown below.

The revised weight for Fuel increased 2.2 percentage points from 2016, and Depreciation's was up 0.1 percentage points. The remaining component weights all decreased by 0.1 to 1.1 percentage points.

Weights for RCAF's All-Inclusive Index			
	2017 Revised	2017 Original	2016
Labor	34.8 %	35.0 %	35.6 %
Fuel	12.9	13.0	10.7
Materials & Supplies	4.9	4.9	5.0
Equipment Rents	5.7	5.2	5.9
Depreciation	15.7	15.8	15.6
Interest	2.1	2.1	2.2
Other	23.9	24.0	25.0
Total	100.0	100.0	100.0

Reweightings of the index is accomplished by calculating both the current quarter (normally the fourth) and prior (normally the third) quarter indexes with the new weights. The relative change between the two quarters is then multiplied times the prior quarter (usually the third) *linked* index. Use of this method ensures that the weight change, by itself, does not cause a change in the level of the All-Inclusive Index.

Internal weights in the labor and equipment rents components are updated at the same time as the external weights. When these weights are changed, they are also linked using the procedure described above in order to eliminate the effect of the change in weighting.

All-Inclusive Index Revised vs Original

The components and values of the All-Inclusive Indexes are shown below.

		Revised Forecast		
	2017R Weights	2018Q4	2019Q1	2019Q2
1. Labor	34.8%	439.2	440.3	439.7
2. Fuel	12.9%	283.9	256.8	259.2
3. M&S	4.9%	269.8	268.3	267.6
4. Equipment Rents	5.7%	236.0	236.3	237.1
5. Depreciation	15.7%	223.8	226.1	223.1
6. Interest	2.1%	62.4	62.4	62.4
7. Other	23.9%	235.5	235.8	231.8
8. Weighted Average				
a. 1980 = 100		308.9	306.1	304.8
b. 1980 = 100 (linked)		285.9	283.3	282.1
c. 4Q17 = 100		108.1	107.1	106.7

		Original Forecast		
	2017 Weights	2018Q4	2019Q1	2019Q2
1. Labor	35.0%	439.2	440.3	439.7
2. Fuel	13.0%	283.9	256.8	259.2
3. M&S	4.9%	269.8	268.3	267.6
4. Equipment Rents	5.2%	236.4	236.7	237.5
5. Depreciation	15.8%	223.8	226.1	223.1
6. Interest	2.1%	62.4	62.4	62.4
7. Other	24.0%	235.5	235.8	231.8
8. Weighted Average				
a. 1980 = 100		309.3	306.6	305.2
b. 1980 = 100 (linked)		285.8	283.3	282.0
c. 4Q17 = 100		108.1	107.1	106.6

Forecast vs. Actual All-Inclusive Index

Fourth Quarter 2018

Because of data availability, the forecast error adjustment has a two-quarter lag from each filing. As shown below, the revised fourth quarter actual index of 107.9 is 0.2 index points below the forecast value of 108.1. Therefore, the forecast error adjustment for second quarter 2019 is -0.2 index points.

	2017R	Fourth Quarter 2018		Amt
	Weights	Forecast	Actual	Difference
1. Labor	34.8%	439.2	439.2	
2. Fuel	12.9%	283.9	297.4	
3. M&S	4.9%	269.8	269.8	
4. Equipment Rents ¹	5.7%	236.0	235.7	
5. Depreciation	15.7%	223.8	225.1	
6. Interest	2.1%	62.4	62.4	
7. Other	23.9%	235.5	233.3	
8. Weighted Average				
a. 1980 = 100		308.9	310.3	
b. 1980 = 100 (linked)		285.9	285.3 ²	
c. 4Q17 = 100 ³		108.1	107.9	-0.2

Forecast error —————→ **-0.2 index points**

Notes: New weights have been utilized. The standard linking procedure has been used to eliminate any changes to indexes that would be caused by updating weights. The Q3 unlinked weighted averages for the All-Inclusive Indexes (forecast and actual) and for Equipment Rents (forecast and actual) were recalculated using the new (2017) weights.

¹	2017R	Fourth Quarter 2018	
	Weights	Forecast	Actual
Car-Hire	60.5%	216.4	216.7
Lease Rentals	39.5%	235.5	233.3
Weighted Average		223.9	223.3
Weighted Average (linked)		236.0	235.7

² Linked actual index = (actual index / previous actual index) x previous linked actual index.
 285.3 = 310.3 / 304.7 x 280.2

³ The 4Q17 based indexes are 1980 based indexes divided by the 4Q17 basing factor (264.5/100).
 Other basing factors are: 4Q12 = 297.6; 4Q07 = 245.9; 4Q02 = 192.1; 4Q97 = 173.2; and 4Q92 = 156.9.

Productivity

On March 11, 2019, the Surface Transportation Board served a decision which proposed to adopt 0.5 percent as the geometric average productivity change for the five most recent years available. Their five year rolling geometric average calculation added the year 2017 and removed the year 2012. The components of this average annual value are shown on the following table in ratio format – therefore, 1.005 is the same as an increase of 0.5 percent. Productivity changes are calculated by multiplying each of the five productivity changes together and taking the result to the one-fifth power. The productivity adjustment factors (PAF) for each quarter are calculated by increasing the previous quarter's PAF by quarterly versions of the annual rate, which are the fourth root of the geometric average annual growth rate. The difference between the PAF and the PAF-5 is the timing of the five-year productivity trend. The tables below show the current productivity numbers that would have been used in the March 5 filing if they had been available. Late on March 18, 2019, the Board served a decision which directed the AAR to submit updated calculations with the new productivity figures which were released on March 11.

Comparison of Output, Input, & Productivity

2013 - 2017

Year	Output Index (1)	Input Index (2)	Productivity Changes (3)
2013	1.022	1.018	1.003
2014	1.055	1.036	1.018
2015	0.913	0.972	0.939
2016	0.955	0.941	1.015
2017	1.045	0.992	1.053
Average			1.005
Previous Average (2012-2016)			0.996

Calculation of PAF and PAF-5

For 2013-2017, use fourth root of avg. productivity change = 1.0012

For 2012-2016, use fourth root of avg. productivity change = 0.9990

Quarter	Year	PAF	PAF-5	
Q1	2019	2.3593	2.5235	2012-2016
Q2	2019	2.3621	2.5210	
Q3	2019	2.3649	2.5185	2013-2017
Q4	2019	2.3677	2.5160	
Q1	2020	2.3705	2.5190	

Rail Cost Adjustment Factor

Second Quarter 2019

Four RCAF values are presented in this filing. Two are not modified for productivity (Preliminary RCAF and RCAF Unadjusted), and two incorporate a productivity calculation (RCAF Adjusted and RCAF-5). The revised versus the original figures are shown below. Note that beginning with the 2018Q1 index, the All-Inclusive Index was rebased to a 2017Q4=100 basis as required in the applicable statute.

	Revised		
	2018Q4	2019Q1	2019Q2
All-Inclusive Index ¹	108.1	107.1	106.7
Preliminary RCAF ²	1.081	1.071	1.067
Forecast Error Adjustment ³	-0.002	-0.013	-0.002
RCAF (Unadjusted) ⁴	1.079	1.058	1.065
Productivity Adjustment Factor ⁵	2.3617	2.3593	2.3621
RCAF (Adjusted) ⁶	0.457	0.448	0.451
PAF-5 ⁷	2.5260	2.5235	2.5210
RCAF-5 ⁸	0.427	0.419	0.422

	Original		
	2018Q4	2019Q1	2019Q2
All-Inclusive Index	108.1	107.1	106.6
Preliminary RCAF	1.081	1.071	1.066
Forecast Error Adjustment	-0.002	-0.013	-0.003
RCAF (Unadjusted)	1.079	1.058	1.063
Productivity Adjustment Factor	2.3617	2.3593	2.3621
RCAF (Adjusted)	0.457	0.448	0.450
PAF-5	2.5260	2.5235	2.5210
RCAF-5	0.427	0.419	0.422

¹ See All-Inclusive Index on page 2.

² All-Inclusive Index divided by the All-Inclusive Index in the base period (100.0).

³ The current figure is from Forecast vs. Actual All-Inclusive Index

⁴ Preliminary RCAF plus the forecast error adjustment.

⁵ See Productivity on page 4.

⁶ RCAF (Unadjusted) divided by the Productivity Adjustment Factor (PAF).

⁷ See Productivity on page 4.

⁸ RCAF (Unadjusted) divided by the PAF-5.

Equipment Rents

Second Quarter 2019

The Equipment Rents Index consists of two components – car hire and lease rentals. The methodologies used to create these two components, and the final Equipment Rents Index, are explained below.

Car Hire

The car hire component is indexed using data from the Car Hire Accounting Rate Master (CHARM) file. Car hire rates for the forecast quarter are estimated based on data for active freight cars using the most recent data available. For the first quarter, December 1 of the previous year is typically used. For the second, third and fourth quarters; March 1, June 1, and September 1 are usually used, respectively. Using data retrieved from the latest CHARM file, an average rate per car is developed. Next, those average rates are grouped into four car type categories to create an overall summary of car hire rates. The summary rates are then compared from quarter to quarter, and weighted, to determine the Car Hire Index.

Lease Rentals

The lease rentals portion of the Equipment Rents Index uses the Producer Price Index for Industrial Commodities less Fuel and Related Products and Power (PPI-LF). The Commission adopted this surrogate in its decision served March 13, 1987. The AAR uses six years of historical data to derive its forecast for the PPI-LF. The forecast is used not only for lease rentals, but also for the "Other" component of the All-Inclusive Index. Appendix G discusses the forecast in more detail.

Equipment Rents Index Calculation

The table below shows the results of the Equipment Rents Index calculation. Due to the revision of 2017 weights, the revised version is compared to the original version below.

	2017R	Revised		
	Weight	2018Q4	2019Q1	2019Q2
Car Hire	60.5%	216.4	216.7	220.5
Lease Rentals	39.5%	235.5	235.8	231.8
Weighted Average		223.9	224.2	225.0
Weighted Average (Linked)		236.0	236.3	237.1

	2017	Original		
	Weight	2018Q4	2019Q1	2019Q2
Car Hire	61.5%	216.9	217.2	221.1
Lease Rentals	38.5%	235.5	235.8	231.8
Weighted Average		224.1	224.4	225.2
Weighted Average (Linked)		236.4	236.7	237.5

AAR Workpapers for Restated 2018Q4, 2019Q1, and 2019 Q2 RCAF

March 26, 2019

1. Index Calculation Spreadsheet Revised(index_calc.xlsx, 2 pages)
2. 2017 Revised RCAF Weights (weights2017R, 2 pages)
3. Car Hire Forecast and Actual Spreadsheet Revised (3 pages)
4. Forecast Error calc. for 2018Q4 (unchanged) 2019Q1 (unchanged) and 2019Q2 (revised) - (3 pages)
5. All Inclusive Actual Spreadsheet Revised (1 page)

RCAF All-Inclusive Index's Labor Index Based on 2017 Benchmarks
Includes Revised 2017 Weights

	17 Wts.	3Q/18	3Q/18 Rebenchd As Info Only	% Chg	4Q/18	% Chg	1Q/19	% Chg	2Q/19	% Chg	3Q/19	% Chg
Straight Time		\$35.154	\$35.524	1.1%	\$35.537	1.1%	\$35.857	0.9%	\$35.857	0.0%		--
PFTNW		\$6.839	\$6.933	1.4%	\$6.936	1.4%	\$6.956	0.3%	\$6.956	0.0%		--
Total		\$41.993	\$42.457	1.1%	\$42.473	1.1%	\$42.813	0.8%	\$42.813	0.0%	\$0.000	--
Adjustments												
Lump Sum		\$0.390	\$0.401		\$0.400		\$0.399		\$0.539			
Back Pay		\$1.232	\$1.268		\$1.283		\$0.773		\$0.584			
Other		\$0.177	\$0.182		\$0.182		\$0.182		\$0.182			
Total Wages		\$43.792	\$44.308	1.2%	\$44.338	1.2%	\$44.167	-0.4%	\$44.118	-0.1%	\$0.000	--
Pre-Tax Reduction		(\$1.361)	(\$1.362)		(\$1.362)		(\$1.362)		(\$1.362)			
Taxable Wages		\$42.431	\$42.946		\$42.976		\$42.805		\$42.756		\$0.000	
H & W		\$8.101	\$8.229	1.6%	\$8.229	1.6%	\$8.302	0.9%	\$8.302	0.0%		--
RR Ret & Medicare		\$8.867	\$9.064	2.2%	\$9.069	2.3%	\$9.124	0.6%	\$9.116	-0.1%		--
Unemp. Insurance		\$0.365	\$0.360	-1.4%	\$0.360	-1.4%	\$0.333	-7.5%	\$0.333	0.0%		--
Other		\$0.288	\$0.297	3.1%	\$0.146	-49.3%	\$0.234	60.3%	\$0.212	-9.4%		--
Total		\$17.621	\$17.950	1.9%	\$17.804	1.0%	\$17.993	1.1%	\$17.963	-0.2%	\$0.000	--
Adjustments												
Total Supplements		\$17.621	\$17.950	1.9%	\$17.804	1.0%	\$17.993	1.1%	\$17.963	-0.2%	\$0.000	--
Total Labor		\$61.413	\$62.258	1.4%	\$62.142	1.2%	\$62.160	0.0%	\$62.081	-0.1%	\$0.000	--
Wage Rate Index	0.6950	374.8	379.2	1.2%	379.4	1.2%	378.0	-0.4%	377.6	-0.1%	0.0	--
Supplements Index	0.3050	651.2	663.3	1.9%	657.9	1.0%	664.9	1.1%	663.8	-0.2%	0.0	--
Total Labor Index '16 Wts.		455.5										
Total Labor Index '17 Wts.		459.1	465.9	1.5%	464.3	1.1%	465.5	0.3%	464.9	-0.1%	0.0	--
Labor Index (Linked)		434.3			439.2	1.1%	440.3	0.3%	439.7	-0.1%	0.0	-100.0%

All Inclusive Index and RCAF using 2017 Benchmarks and Weights
Includes Revised 2017 Weights

	17 Wts.	3Q/18	17 Wts. 3Q/18	% Chg	4Q/18	% Chg	1Q/19	% Chg	2Q/19	% Chg	3Q/19	% Chg
Labor	0.348	434.30	434.3	0.0%	439.2	1.1%	440.3	0.3%	439.7	-0.1%	0.0	-100.0%
Fuel	0.129	291.00	291.0	0.0%	283.9	-2.4%	256.8	-9.5%	259.2	0.9%		--
M&S	0.049	263.70	263.7	0.0%	269.8	2.3%	268.3	-0.6%	267.6	-0.3%		--
Equip. Rents	0.057	230.50	230.5	0.0%	236.0	2.4%	236.3	0.1%	237.1	0.3%	0.0	-100.0%
Depreciation	0.157	223.50	223.5	0.0%	223.8	0.1%	226.1	1.0%	223.1	-1.3%		--
Interest	0.021	60.50	60.5	0.0%	62.4	3.1%	62.4	0.0%	62.4	0.0%	62.4	0.0%
Other	0.239	231.50	231.5	0.0%	235.5	1.7%	235.8	0.1%	231.8	-1.7%		--
Weighted Avg.	1.000	306.60	306.4	-0.1%	308.9	0.8%	306.1	-0.9%	304.8	-0.4%	1.3	-99.6%
Linked		283.60			285.9	0.8%	283.3	-0.9%	282.1	-0.4%	1.2	-99.6%
	Basing Factor											
10/1/80 basis	102.7	276.1			278.4	0.8%	275.9	-0.9%	274.7	-0.4%	1.2	-99.6%
10/1/82	120.9	234.6			236.5	0.8%	234.3	-0.9%	233.3	-0.4%	1.0	-99.6%
4Q/87	132.2	214.5			216.3	0.8%	214.3	-0.9%	213.4	-0.4%	0.9	-99.6%
4Q/92	156.9	180.8			182.2	0.8%	180.6	-0.9%	179.8	-0.4%	0.8	-99.6%
4Q/97	173.2	163.7			165.1	0.9%	163.6	-0.9%	162.9	-0.4%	0.7	-99.6%
4Q/02	192.1	147.6			148.8	0.8%	147.5	-0.9%	146.9	-0.4%	0.6	-99.6%
4Q/07	245.9	115.3			116.3	0.9%	115.2	-0.9%	114.7	-0.4%	0.5	-99.6%
4Q/12	297.6	95.3			96.1	0.8%	95.2	-0.9%	94.8	-0.4%	0.4	-99.6%
4Q/17 basis	264.5	107.2			108.1	0.8%	107.1	-0.9%	106.7	-0.4%	0.5	-99.5%
Car Hire	0.605	210.40	210.4	0.0%	216.4	2.9%	216.7	0.1%	220.5	1.8%		--
Lease Rents	0.395	231.50	231.5	0.0%	235.5	1.7%	235.8	0.1%	231.8	-1.7%	0.0	--
Weighted Avg Eq Rents		219.20	218.7	-0.2%	223.9	2.4%	224.2	0.1%	225.0	0.4%	0.0	--
Linked Equipment Rents		230.50			236.0	2.4%	236.3	0.1%	237.1	0.3%	0.0	-100.0%
Preliminary RCAF		1.072			1.081	0.84%	1.071	-0.9%	1.067	-0.4%	0.005	-99.5%
Forecast Error Adj.		(0.011)			(0.002)		(0.013)		(0.002)			
RCAF Unadjusted		1.061			1.079	1.70%	1.058	-1.9%	1.065	0.7%	0.005	-99.5%
PAF		2.3641			2.3617	-0.10%	2.3593	-0.10%	2.3621	0.12%		--
RCAF Adjusted		0.449			0.457	1.78%	0.448	-2.0%	0.451	0.7%	#DIV/0!	--
PAF-5		2.5298			2.5260	-0.15%	2.5235	-0.10%	2.5210	-0.10%		--
RCAF-5		0.419			0.427	1.91%	0.419	-1.9%	0.422	0.7%	#DIV/0!	--

RCAF Weights

	U.S.
Labor	\$16,802,934
Fuel	6,243,720
Mat & Sup.	2,370,769
Equip. Rents	2,733,784
Depreciation	7,578,549
Interest	1,031,957
Other	11,537,192
Total	\$48,298,905

Check

410 620f	47,266,948
Interest	1,031,957
Total	48,298,905
	ok

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2017 Revised	2017 Original	2016	Amt Chg	2015	2014
34.8%	35.0%	35.6%	-0.8%	35.0%	31.7%
12.9%	13.0%	10.7%	2.2%	13.4%	20.9%
4.9%	4.9%	5.0%	-0.1%	5.4%	5.2%
5.7%	5.2%	5.9%	-0.2%	5.8%	5.4%
15.7%	15.8%	15.6%	0.1%	13.9%	12.6%
2.1%	2.1%	2.2%	-0.1%	1.9%	1.5%
23.9%	24.0%	25.0%	-1.1%	24.6%	22.7%
100.0%	100.0%	100.0%		100.0%	100.0%

Bolded number was adjusted to force rounded numbers to add to 100.0%.

Analysis of Other -- as info only

Other	U.S.
Purch Service	\$7,740,042
Taxes	1,384,652
Cas & Insuran	544,528
Loss & Dam	87,286
Gen & Admn	1,780,684
Total	\$11,537,192

2017 Revised	2017 Original	2016	Amt Chg.
16.0%	16.1%	16.5%	-0.5%
2.9%	2.9%	2.9%	-0.1%
1.1%	1.1%	1.3%	-0.2%
0.2%	0.2%	0.2%	0.0%
3.7%	3.7%	4.1%	-0.4%
23.9%	24.0%	25.0%	-1.1%

RCAF Internal Weights

	U.S.	2017 Revised	2017 Original	2016	Amt Diff
Labor					
Wages	11,685,610	69.5%	69.5%	70.8%	-1.3%
Wage Supplem	5,117,324	30.5%	30.5%	29.2%	1.3%
Total	16,802,934	100.0%	100.0%	100.0%	
Check	ok				

Equip. Rents					
Car Hire	1,655,234	60.5%	61.5%	58.3%	2.2%
Lease Rents	1,078,550	39.5%	38.5%	41.7%	-2.2%
Total	2,733,784	100.0%	100.0%	100.0%	
Check	ok				

Car Hire					
RR Time excl Autork	120,969	7.3%	* 0.4%	9.1%	-1.8%
RR Mileage excl Auto	81,724	4.9%	5.3%	5.8%	-0.9%
Private excl Autorack	1,367,248	82.2%	88.3%	76.2%	6.0%
Autorack	93,912	5.6%	6.0%	8.9%	-3.3%
Total	1,663,853	100.0%	100.0%	100.0%	
	ok				

from Sch. 414

Car Hire, Adjusted to eliminate negative numbers					
RR Time excl Autork	120,969	7.3%	0.4%	9.1%	-1.8%
RR Mileage excl Auto	81,724	4.9%	5.3%	5.8%	-0.9%
Private excl Autorack	1,367,248	82.2%	88.3%	76.2%	6.0%
Autorack	93,912	5.6%	6.0%	8.9%	-3.3%
Total	1,663,853	100.0%	100.0%	100.0%	

* The railroad that caused the big change in weights for Railroad Time excluding Autoracks said the cause was related to the impact of the Tax Cuts and Jobs Act on affiliates.

Note: These numbers are all rounded to 3 digits after the decimal or 1 digit after the decimal for a percentage. In the event that the rounded percentages do not sum to 100.0%, the number that is closest to rounding in the other direction will be changed to force a 100.0% total. The number is identified by a **bold** font.

Car Hire for RCAF - Revised 2017 Weights

Car Hire Index used in RCAF's All-Inclusive Index (Forecast)

	1980	June 3Q/18	Sept. 4Q/18	Dec. 1Q/19	Mar. 2Q/19	June 3Q/19
RATE						
RR-OWNED TIME	31.00	64.00	64.00	64.00	65.00	--
RR-OWNED MILEAGE	4.69	6.60	6.70	6.70	6.70	--
PRIVATELY-OWNED CARS	25.47	55.51	57.27	57.30	58.58	--
AUTORACKS	47.00	84.84	87.00	87.67	83.67	--
INDEX						
RR-OWNED TIME	100.0	206.5	206.5	206.5	209.7	--
RR-OWNED MILEAGE	100.0	140.7	142.9	142.9	142.9	--
PRIVATELY-OWNED CARS	100.0	217.9	224.8	225.0	230.0	--
AUTORACKS	100.0	180.5	185.1	186.5	178.0	--
CAR HIRE INDEX (old wts) 2016	100.0	209.1	--	--	--	--
CAR HIRE INDEX (new wts) 2017	100.0	211.2	217.2	217.5	221.3	--
CAR HIRE INDEX (LINKED)	100.0	210.4	216.4	216.7	220.5	--

Note: The Car Hire Index for third quarter using *old weights* and *linked* should match that quarter's filing. The third quarter *new weights* version is used in the fourth quarter linked index calculation to ensure that the transition from old weights to new weights does not impact the linked index.

Note: Indexes are rounded, rates are full float.

Car Hire for RCAF - Revised 2017 Weights

Car Hire Index used in RCAF's All-Inclusive Index (Actual)

		1980	Aug 3Q/18	Nov 4Q/18	Feb 1Q/19	May 2Q/19	Aug 3Q/19
RATE							
	RR-OWNED TIME	31.00	64.00	64.00	65.00	--	--
	RR-OWNED MILEAGE	4.69	6.70	6.70	6.70	--	--
	PRIVATELY-OWNED CARS	25.47	55.66	57.29	57.29	--	--
	AUTORACKS	47.00	86.16	87.67	82.67	--	--
INDEX							
	RR-OWNED TIME	100.0	206.5	206.5	209.7	--	--
	RR-OWNED MILEAGE	100.0	142.9	142.9	142.9	--	--
	PRIVATELY-OWNED CARS	100.0	218.5	224.9	225.0	--	--
	AUTORACKS	100.0	183.3	186.5	175.9	--	--
CAR HIRE INDEX (old wts)	2016	100.0	209.9	--	--	--	--
CAR HIRE INDEX (new wts)	2017	100.0	211.9	217.4	217.1	--	--
CAR HIRE INDEX (LINKED)		100.0	211.2	216.7	216.4	--	--

Note: Indexes are rounded, rates are full float.

Car Hire Data From CHARM

	2018 (first day of month)						2019 (first day of month)							
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Railroad Equipment														
No. of Cars (cars with rates only)														
Superstructures (Vehicular Flats)	10,741	10,849	10,867	10,873	10,859	10,867	10,980	10,987	11,107					
Rate (in cents)														
Superstructures #3 - Auto Rack	86.0	87.0	87.0	87.0	86.0	86.0	86.0	86.0	87.0					
All other #1 - Time	64.0	64.0	64.0	64.0	64.0	64.0	64.0	65.0	65.0					
All other #2 - Mileage	6.6	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7					
Private Equipment														
No. of Cars (cars with rates only)														
Superstructures (Vehicular Flats)	55,504	55,500	55,392	55,268	55,162	55,158	55,092	55,090	55,038					
Covered Hoppers	421,139	422,430	423,225	424,175	425,349	426,465	426,889	427,681	428,680					
Tank Cars	405,718	405,541	405,949	406,278	406,924	407,122	407,849	408,068	408,804					
Others	291,908	291,714	292,215	292,904	295,029	295,548	296,028	296,805	296,959					
Rate (in cents)														
Superstructures #1 - Time	84.0	84.0	84.0	84.0	84.0	84.0	85.0	85.0	86.0					
Superstructures #2 - Mileage	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4					
Superstructures #3 - Auto Rack	86.0	86.0	87.0	87.0	88.0	88.0	82.0	82.0	83.0					
Covered Hoppers #2 - Mileage	46.2	46.2	46.2	46.3	46.3	46.3	45.2	45.3	45.4					
Tank Cars #2 - Mileage	89.9	90.0	94.6	94.7	94.7	94.8	94.5	94.6	98.1					
Others #1 - Time	89.0	90.0	90.0	90.0	90.0	90.0	98.0	98.0	98.0					
Others #2 - Mileage	8.2	8.2	8.3	8.3	8.3	8.3	8.2	8.2	8.3					
AVERAGE RATES														
Private Superstructures	21.14	21.14	21.14	21.14	21.14	21.14	21.38	21.38	21.61	0.00	0.00	0.00	0.00	0.00
Private Others	27.96	28.18	28.28	28.28	28.28	28.28	29.96	29.96	30.06	0.00	0.00	0.00	0.00	0.00
Private Total	55.58	55.66	57.27	57.33	57.29	57.30	57.24	57.29	58.58	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Autoracks	86.00	86.16	87.00	87.00	87.67	87.67	82.66	82.67	83.67	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Car Hire Weights	"Old Wts" New Wts"	
	2016	2017
For RCAF & RCR		
RR-owned Time	0.091	0.073
RR-owned Mileage	0.058	0.049
Privately-owned Cars	0.762	0.822
Autoracks	0.089	0.056
----- Check sum	1.000	1.000

Weights for Equipment Rents		
(not used in Car Hire calculation)		
	2016	2017
Car Hire - U.S.	0.583	0.605
Lease Rentals - U.S.	0.417	0.395
----- Check sum	1.000	1.000

Notes:

The Car Hire Index and Lease Rentals Index are weighed together to calculate the Equipment Rents Index

CHARM is the Car Hire Accounting Rate Master

The 4 bold lines are used for the Car Hire Rate. Private Total uses a weighted average of the Covered Hoppers, Tank Cars, Combined Private Superstructures, and Combined Private Others rates.

Forecast Error Calculation - Unchanged from original filed for 2019Q1

		Third Quarter 2018		Pct.	Notes
	2016	2018Q3	2018Q3	Diff.	
	Weight	Forecast	Actual		
Labor	35.6%	434.3	434.3	0.0	* actual= forecast
Fuel	10.7%	291.0	274.0	-17.0	from 1st month of quarter (MRFcalcs spreadsheet, RCAF tab linked index)
M&S	5.0%	263.7	263.7	0.0	* actual=forecast
Equip Rents	5.9%	230.5	231.8	1.3	from Equipment Rents below
Depreciation	15.6%	223.5	224.6	1.1	PPI-RE 202.40 202.40 204.10 0.9040
Interest	2.2%	60.5	60.5	0.0	* actual= forecast
Other	25.0%	231.5	232.5	1.0	PPI-LF 207.50 207.40 207.40 0.8920
Weighted Avg	100.0%				
1980 = 100		306.6	305.3		calculated
1980 = 100 (linked)		283.6	280.2		calculated
4Q17 = 100	2.645	107.2	105.9		calculated
4Q12 = 100	2.976	95.3	94.2		calculated
4Q07 = 100	2.459	115.3	113.9		calculated
4Q02 = 100	1.921	147.6	145.9		calculated
4Q97 = 100	1.732	163.7	161.8		calculated
Forecast Error	—————>	-1.3			calculated -0.013 = RCAF adj.
Prior Quarter					
1980 = 100		297.2	298.8 **		
1980 = 100 (linked)		274.9	274.2		
4Q12 = 100		103.9	103.7		calculated
4Q07 = 100		92.4	92.1		calculated
4Q02 = 100		111.8	111.5		calculated
4Q97 = 100		143.1	142.7		calculated
4Q92 = 100		158.7	158.3		calculated
Equipment Rents					
Car Hire	58.3%	210.4	211.2		from Equipment Rents/CHARM
Lease Rentals	41.7%	231.5	232.5		(equals PPI-LF from above)
Weighted Average		219.2	220.1		calculated
Linked		230.5	231.8		calculated
Prior Quarter					
Weighted Average		217.7	218.8 **		
Linked		228.9	230.4		
Sum of Weights	ok				** if fourth quarter, weighted avg for prior needs to use new
Sum of ER Wt.	ok				weights (applies to both columns C and D, rows 24 and 39), linked is ok
					D24 and D39 would come from All-InclusiveActual.xlsx (column E) in RCAF/8AI
					C24 and 39 would come from 3Q rebenchd column in indexcalc.xls

Forecast Error Calculation - Revised 2017 Weights - Changed from original for 2019Q2

	2017 Weight	Fourth Quarter 2018		Difference		Notes
		2018Q4 Forecast	2018Q4 Actual	Pt.	Pct.	
Labor	34.8%	439.2	439.2	0.0	0%	* actual=forecast
Fuel	12.9%	283.9	297.4	13.5	5%	from 1st month of quarter
M&S	4.9%	269.8	269.8	0.0	0%	* actual=forecast
Equip Rents	5.7%	236.0	235.7	-0.3	0%	from Equipment Rents below
Depreciation	15.7%	223.8	225.1	1.3	1%	PPI-RE
Interest	2.1%	62.4	62.4	0.0	0%	* actual=forecast
Other	23.9%	235.5	233.3	-2.2	-1%	PPI-LF
Weighted Avg	100.0%					
1980 = 100		308.9	310.3			calculated
1980 = 100 (linked)		285.9	285.3			calculated
4Q17 = 100	2.645	108.1	107.9			calculated
4Q12 = 100	2.976	96.1	95.9			calculated
4Q07 = 100	2.459	116.3	116.0			calculated
4Q02 = 100	1.921	148.8	148.5			calculated
4Q97 = 100	1.732	165.1	164.7			calculated
Forecast Error		-0.2				calculated
						-0.002 = RCAF adj.
Prior Quarter						
1980 = 100		306.4	304.7 **			Re-calculated using new weights
1980 = 100 (linked)		283.6	280.2			
4Q17 = 100		107.2	105.9			calculated
4Q12 = 100		95.3	94.2			calculated
4Q07 = 100		115.3	113.9			calculated
4Q02 = 100		147.6	145.9			calculated
4Q97 = 100		163.7	161.8			calculated
Equipment Rents						
Car Hire	60.5%	216.4	216.7			from Equipment Rents/CHARM
Lease Rentals	39.5%	235.5	233.3			(equals PPI-LF from above)
Weighted Average		223.9	223.3			calculated
Linked		236.0	235.7			calculated
Prior Quarter						
Weighted Average		218.7	219.6 **			Re-calculated using new weights
Linked		230.5	231.8			
Sum of Weights	ok					** if fourth quarter, weighted avg for prior needs to use new weights, linked is ok
Sum of ER Wt.	ok					

Factors to change from
1982=100 to 1980 = 100

0.9040

0.8920

All-Inclusive Index (Actual) - Revised 2017 Weights

	17 Wts	3Q/18 16 Wts	3Q/18 17 Wts	% Chg.	4Q/18 17 Wts	% Chg.	1Q/19 17 Wts	% Chg.	2Q/19 17 Wts	% Chg.	3Q/19 17 Wts	% Chg.
Labor	34.8%	434.3	434.3	0.0%	439.2	1.1%		NA		NA		NA
Fuel	12.9%	274.0	274.0	0.0%	297.4	8.5%		NA		NA		NA
M&S	4.9%	263.7	263.7	0.0%	269.8	2.3%		NA		NA		NA
Equipment Rents	5.7%	231.8	231.8	0.0%	235.7	1.7%	0.0	NA	#DIV/0!	NA	#DIV/0!	NA
Depreciation	15.7%	224.6	224.6	0.0%	225.1	0.2%		NA		NA		NA
Interest	2.1%	60.5	60.5	0.0%	62.4	3.1%	62.4	0.0%	62.4	0.0%	62.4	0.0%
Other	23.9%	232.5	232.5	0.0%	233.3	0.3%		NA		NA		NA
	1.0000											
Weighted Avg.		305.3	304.7	-0.2%	310.3	1.8%	1.3	NA	#DIV/0!	NA	#DIV/0!	NA
Linked		280.2			285.3	1.8%	1.2	NA	#DIV/0!	NA	#DIV/0!	NA
10/1/80	1.027	272.8			277.8	1.8%	1.2	NA	#DIV/0!	NA	#DIV/0!	NA
10/1/82	1.209	231.8			236.0	1.8%	1.0	NA	#DIV/0!	NA	#DIV/0!	NA
4Q/87	1.322	212.0			215.8	1.8%	0.9	NA	#DIV/0!	NA	#DIV/0!	NA
4Q/92	1.569	178.6			181.8	1.8%	0.8	NA	#DIV/0!	NA	#DIV/0!	NA
4Q/97	1.732	161.8			164.7	1.8%	0.7	NA	#DIV/0!	NA	#DIV/0!	NA
4Q/02	1.921	145.9			148.5	1.8%	0.6	NA	#DIV/0!	NA	#DIV/0!	NA
4Q/07	2.459	113.9			116.0	1.8%	0.5	NA	#DIV/0!	NA	#DIV/0!	NA
4Q/12	2.976	94.2			95.9	1.8%	0.4	NA	#DIV/0!	NA	#DIV/0!	NA
4Q/17	2.645	105.9			107.9	1.9%	0.5	NA	#DIV/0!	NA	#DIV/0!	NA
Equipment Rents												
Car Hire	60.5%	211.2	211.2	0.0%	216.7	2.6%		NA		NA		NA
Lease Rentals	39.5%	232.5	232.5	0.0%	233.3	0.3%	0.0	NA	0.0	NA	0.0	NA
	1.0000											
ER Weighted Avg		220.1	219.6	-0.2%	223.3	1.7%	0.0	NA	0.0	NA	0.0	NA
ER Linked		231.8			235.7	1.7%	0.0	NA	#DIV/0!	NA	#DIV/0!	NA

Impact/Check of weight change	16 Wts	17 Wts
Labor	137.673	151.136
Fuel	57.266	35.346
Material & Supplies	13.712	12.921
Equipment Rents	12.517	13.213
Depreciation	28.300	35.262
Interest	0.908	1.271
Other	52.778	55.568
Weighted Avg.	303.153	304.717
ER Weighted Avg.	220.4655	219.6135

As info only

AAR Workpapers for Restated 2018Q4, 2019Q1, and 2019 Q2 RCAF

March 26, 2019

1. Index Calculation Spreadsheet Revised(index_calc.xlsx, 2 pages)
2. 2017 Revised RCAF Weights (weights2017R, 2 pages)
3. Car Hire Forecast and Actual Spreadsheet Revised (3 pages)
4. Forecast Error calc. for 2018Q4 (unchanged) 2019Q1 (unchanged) and 2019Q2 (revised) - (3 pages)
5. All Inclusive Actual Spreadsheet Revised (1 page)

RCAF All-Inclusive Index's Labor Index Based on 2017 Benchmarks
Includes Revised 2017 Weights

17 Wts.	3Q/18	3Q/18 Rebench As Info Only	% Chg	4Q/18	% Chg	1Q/19	% Chg	2Q/19	% Chg	3Q/19	% Chg
Straight Time	\$35.154	\$35.524	1.1%	\$35.537	1.1%	\$35.857	0.9%	\$35.857	0.0%		--
PFTNW	\$6.839	\$6.933	1.4%	\$6.936	1.4%	\$6.956	0.3%	\$6.956	0.0%		--
Total	\$41.993	\$42.457	1.1%	\$42.473	1.1%	\$42.813	0.8%	\$42.813	0.0%	\$0.000	--
Adjustments											
Lump Sum	\$0.390	\$0.401		\$0.400		\$0.399		\$0.539			
Back Pay	\$1.232	\$1.268		\$1.283		\$0.773		\$0.584			
Other	\$0.177	\$0.182		\$0.182		\$0.182		\$0.182			
Total Wages	\$43.792	\$44.308	1.2%	\$44.338	1.2%	\$44.167	-0.4%	\$44.118	-0.1%	\$0.000	--
Pre-Tax Reduction	(\$1.361)	(\$1.362)		(\$1.362)		(\$1.362)		(\$1.362)			
Taxable Wages	\$42.431	\$42.946		\$42.976		\$42.805		\$42.756		\$0.000	
H & W	\$8.101	\$8.229	1.6%	\$8.229	1.6%	\$8.302	0.9%	\$8.302	0.0%		--
RR Ret & Medicare	\$8.867	\$9.064	2.2%	\$9.069	2.3%	\$9.124	0.6%	\$9.116	-0.1%		--
Unemp. Insurance	\$0.365	\$0.360	-1.4%	\$0.360	-1.4%	\$0.333	-7.5%	\$0.333	0.0%		--
Other	\$0.288	\$0.297	3.1%	\$0.146	-49.3%	\$0.234	60.3%	\$0.212	-9.4%		--
Total	\$17.621	\$17.950	1.9%	\$17.804	1.0%	\$17.993	1.1%	\$17.963	-0.2%	\$0.000	--
Adjustments											
Total Supplements	\$17.621	\$17.950	1.9%	\$17.804	1.0%	\$17.993	1.1%	\$17.963	-0.2%	\$0.000	--
Total Labor	\$61.413	\$62.258	1.4%	\$62.142	1.2%	\$62.160	0.0%	\$62.081	-0.1%	\$0.000	--
Wage Rate Index	0.6950	374.8	1.2%	379.4	1.2%	378.0	-0.4%	377.6	-0.1%	0.0	--
Supplements Index	0.3050	651.2	1.9%	657.9	1.0%	664.9	1.1%	663.8	-0.2%	0.0	--
Total Labor Index '16 Wts.	455.5										
Total Labor Index '17 Wts.	459.1	465.9	1.5%	464.3	1.1%	465.5	0.3%	464.9	-0.1%	0.0	--
Labor Index (Linked)	434.3			439.2	1.1%	440.3	0.3%	439.7	-0.1%	0.0	-100.0%

All Inclusive Index and RCAF using 2017 Benchmarks and Weights

Includes Revised 2017 Weights

17 Wts.

	17 Wts.	3Q/18	3Q/18	% Chg	4Q/18	% Chg	1Q/19	% Chg	2Q/19	% Chg	3Q/19	% Chg
Labor	0.348	434.30	434.3	0.0%	439.2	1.1%	440.3	0.3%	439.7	-0.1%	0.0	-100.0%
Fuel	0.129	291.00	291.0	0.0%	283.9	-2.4%	256.8	-9.5%	259.2	0.9%	--	--
M&S	0.049	263.70	263.7	0.0%	269.8	2.3%	268.3	-0.6%	267.6	-0.3%	--	--
Equip. Rents	0.057	230.50	230.5	0.0%	236.0	2.4%	236.3	0.1%	237.1	0.3%	0.0	-100.0%
Depreciation	0.157	223.50	223.5	0.0%	223.8	0.1%	226.1	1.0%	223.1	-1.3%	--	--
Interest	0.021	60.50	60.5	0.0%	62.4	3.1%	62.4	0.0%	62.4	0.0%	62.4	0.0%
Other	0.239	231.50	231.5	0.0%	235.5	1.7%	235.8	0.1%	231.8	-1.7%	--	--
Weighted Avg.	1.000	306.60	306.4	-0.1%	308.9	0.8%	306.1	-0.9%	304.8	-0.4%	1.3	-99.6%
Linked		283.60			285.9	0.8%	283.3	-0.9%	282.1	-0.4%	1.2	-99.6%
Basing Factor												
10/1/80 basis	102.7	276.1			278.4	0.8%	275.9	-0.9%	274.7	-0.4%	1.2	-99.6%
10/1/82	120.9	234.6			236.5	0.8%	234.3	-0.9%	233.3	-0.4%	1.0	-99.6%
4Q/87	132.2	214.5			216.3	0.8%	214.3	-0.9%	213.4	-0.4%	0.9	-99.6%
4Q/92	156.9	180.8			182.2	0.8%	180.6	-0.9%	179.8	-0.4%	0.8	-99.6%
4Q/97	173.2	163.7			165.1	0.9%	163.6	-0.9%	162.9	-0.4%	0.7	-99.6%
4Q/02	192.1	147.6			148.8	0.8%	147.5	-0.9%	146.9	-0.4%	0.6	-99.6%
4Q/07	245.9	115.3			116.3	0.9%	115.2	-0.9%	114.7	-0.4%	0.5	-99.6%
4Q/12	297.6	95.3			96.1	0.8%	95.2	-0.9%	94.8	-0.4%	0.4	-99.6%
4Q/17 basis	264.5	107.2			108.1	0.8%	107.1	-0.9%	106.7	-0.4%	0.5	-99.5%
Car Hire	0.605	210.40	210.4	0.0%	216.4	2.9%	216.7	0.1%	220.5	1.8%	--	--
Lease Rents	0.395	231.50	231.5	0.0%	235.5	1.7%	235.8	0.1%	231.8	-1.7%	0.0	--
Weighted Avg Eq Rents		219.20	218.7	-0.2%	223.9	2.4%	224.2	0.1%	225.0	0.4%	0.0	--
Linked Equipment Rents		230.50			236.0	2.4%	236.3	0.1%	237.1	0.3%	0.0	-100.0%
Preliminary RCAF		1.072			1.081	0.84%	1.071	-0.9%	1.067	-0.4%	0.005	-99.5%
Forecast Error Adj.		(0.011)			(0.002)		(0.013)		(0.002)			
RCAF Unadjusted		1.061			1.079	1.70%	1.058	-1.9%	1.065	0.7%	0.005	-99.5%
PAF		2.3641			2.3617	-0.10%	2.3593	-0.10%	2.3621	0.12%	--	--
RCAF Adjusted		0.449			0.457	1.78%	0.448	-2.0%	0.451	0.7%	#DIV/0!	--
PAF-5		2.5298			2.5260	-0.15%	2.5235	-0.10%	2.5210	-0.10%	--	--
RCAF-5		0.419			0.427	1.91%	0.419	-1.9%	0.422	0.7%	#DIV/0!	--

RCAF Weights

	2017 Revised	2017 Original	2016	Amt Chg	2015	2014
	34.8%	35.0%	35.6%	-0.8%	35.0%	31.7%
	12.9%	13.0%	10.7%	2.2%	13.4%	20.9%
	4.9%	4.9%	5.0%	-0.1%	5.4%	5.2%
	5.7%	5.2%	5.9%	-0.2%	5.8%	5.4%
	15.7%	15.8%	15.6%	0.1%	13.9%	12.6%
	2.1%	2.1%	2.2%	-0.1%	1.9%	1.5%
	23.9%	24.0%	25.0%	-1.1%	24.6%	22.7%
	100.0%	100.0%	100.0%		100.0%	100.0%

Bolded number was adjusted to force rounded numbers to add to 100.0%.

	U.S.
Labor	\$16,802,934
Fuel	6,243,720
Mat & Sup.	2,370,769
Equip. Rents	2,733,784
Depreciation	7,578,549
Interest	1,031,957
Other	11,537,192
Total	\$48,298,905

Check

410 620f	47,266,948
Interest	1,031,957
Total	48,298,905
	ok

key this cell only

Analysis of Other -- as info only

Other	U.S.	2017 Revised	2017 Original	2016	Amt Chg.
Purch Service	\$7,740,042	16.0%	16.1%	16.5%	-0.5%
Taxes	1,384,652	2.9%	2.9%	2.9%	-0.1%
Cas & Insuran	544,528	1.1%	1.1%	1.3%	-0.2%
Loss & Dam	87,286	0.2%	0.2%	0.2%	0.0%
Gen & Admn	1,780,684	3.7%	3.7%	4.1%	-0.4%
Total	\$11,537,192	23.9%	24.0%	25.0%	-1.1%

RCAF Internal Weights

	U.S.	2017 Revised	2017 Original	2016	Amt Diff
Labor					
Wages	11,685,610	69.5%	69.5%	70.8%	-1.3%
Wage Supplem	5,117,324	30.5%	30.5%	29.2%	1.3%
Total	16,802,934	100.0%	100.0%	100.0%	
Check	ok				

Equip. Rents

Car Hire	1,655,234	60.5%	61.5%	58.3%	2.2%
Lease Rents	1,078,550	39.5%	38.5%	41.7%	-2.2%
Total	2,733,784	100.0%	100.0%	100.0%	
Check	ok				

Car Hire

RR Time excl Autork	120,969	7.3%	* 0.4%	9.1%	-1.8%
RR Mileage excl Auto	81,724	4.9%	5.3%	5.8%	-0.9%
Private excl Autorack	1,367,248	82.2%	88.3%	76.2%	6.0%
Autorack	93,912	5.6%	6.0%	8.9%	-3.3%
Total	1,663,853	100.0%	100.0%	100.0%	

from Sch. 414

ok

Car Hire, Adjusted to eliminate negative numbers

RR Time excl Autork	120,969	7.3%	0.4%	9.1%	-1.8%
RR Mileage excl Auto	81,724	4.9%	5.3%	5.8%	-0.9%
Private excl Autorack	1,367,248	82.2%	88.3%	76.2%	6.0%
Autorack	93,912	5.6%	6.0%	8.9%	-3.3%
Total	1,663,853	100.0%	100.0%	100.0%	

* The railroad that caused the big change in weights for Railroad Time excluding Autoracks said the cause was related to the impact of the Tax Cuts and Jobs Act on affiliates.

Note: These numbers are all rounded to 3 digits after the decimal or 1 digit after the decimal for a percentage. In the event that the rounded percentages do not sum to 100.0%, the number that is closest to rounding in the other direction will be changed to force a 100.0% total. The number is identified by a **bold** font.

Car Hire for RCAF - Revised 2017 Weights

Car Hire Index used in RCAF's All-Inclusive Index (Forecast)

	1980	June 3Q/18	Sept. 4Q/18	Dec. 1Q/19	Mar. 2Q/19	June 3Q/19
RATE						
RR-OWNED TIME	31.00	64.00	64.00	64.00	65.00	--
RR-OWNED MILEAGE	4.69	6.60	6.70	6.70	6.70	--
PRIVATELY-OWNED CARS	25.47	55.51	57.27	57.30	58.58	--
AUTORACKS	47.00	84.84	87.00	87.67	83.67	--
INDEX						
RR-OWNED TIME	100.0	206.5	206.5	206.5	209.7	--
RR-OWNED MILEAGE	100.0	140.7	142.9	142.9	142.9	--
PRIVATELY-OWNED CARS	100.0	217.9	224.8	225.0	230.0	--
AUTORACKS	100.0	180.5	185.1	186.5	178.0	--
CAR HIRE INDEX (old wts) 2016	100.0	209.1	--	--	--	--
CAR HIRE INDEX (new wts) 2017	100.0	211.2	217.2	217.5	221.3	--
CAR HIRE INDEX (LINKED)	100.0	210.4	216.4	216.7	220.5	--

Note: The Car Hire Index for third quarter using *old weights* and *linked* should match that quarter's filing. The third quarter *new weights* version is used in the fourth quarter linked index calculation to ensure that the transition from old weights to new weights does not impact the linked index.

Note: Indexes are rounded, rates are full float.

Car Hire for RCAF - Revised 2017 Weights

Car Hire Index used in RCAF's All-Inclusive Index (Actual)

		1980	Aug 3Q/18	Nov 4Q/18	Feb 1Q/19	May 2Q/19	Aug 3Q/19
RATE							
RR-OWNED TIME		31.00	64.00	64.00	65.00	--	--
RR-OWNED MILEAGE		4.69	6.70	6.70	6.70	--	--
PRIVATELY-OWNED CARS		25.47	55.66	57.29	57.29	--	--
AUTORACKS		47.00	86.16	87.67	82.67	--	--
INDEX							
RR-OWNED TIME		100.0	206.5	206.5	209.7	--	--
RR-OWNED MILEAGE		100.0	142.9	142.9	142.9	--	--
PRIVATELY-OWNED CARS		100.0	218.5	224.9	225.0	--	--
AUTORACKS		100.0	183.3	186.5	175.9	--	--
CAR HIRE INDEX (old wts)	2016	100.0	209.9	--	--	--	--
CAR HIRE INDEX (new wts)	2017	100.0	211.9	217.4	217.1	--	--
CAR HIRE INDEX (LINKED)		100.0	211.2	216.7	216.4	--	--

Note: Indexes are rounded, rates are full float.

Car Hire Data From CHARM

Car Hire Data From CHARM		2018 (first day of month)						2019 (first day of month)									
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug		
Railroad Equipment																	
No. of Cars (cars with rates only)																	
Superstructures (Vehicular Flats)		10,741	10,849	10,867	10,873	10,859	10,867	10,980	10,987	11,107							
Rate (in cents)		86.0	87.0	87.0	87.0	86.0	86.0	86.0	86.0	87.0							
Superstructures #3 - Auto Rack		64.0	64.0	64.0	64.0	64.0	64.0	64.0	65.0	65.0							
All other #1 - Time		6.6	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7							
All other #2 - Mileage																	
Private Equipment																	
No. of Cars (cars with rates only)																	
Superstructures (Vehicular Flats)		55,504	55,500	55,392	55,268	55,162	55,158	55,092	55,090	55,038							
Covered Hoppers		421,139	422,430	423,225	424,175	425,349	426,465	426,889	427,681	428,680							
Tank Cars		405,718	405,541	405,949	406,278	406,924	407,122	407,849	408,068	408,804							
Others		291,908	291,714	292,215	292,904	295,029	295,548	296,028	296,805	296,959							
Rate (in cents)		84.0	84.0	84.0	84.0	84.0	84.0	85.0	85.0	86.0							
Superstructures #1 - Time		1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4							
Superstructures #2 - Mileage		86.0	86.0	87.0	87.0	88.0	88.0	82.0	82.0	83.0							
Superstructures #3 - Auto Rack		46.2	46.2	46.2	46.3	46.3	46.3	45.2	45.3	45.4							
Covered Hoppers #2 - Mileage		89.9	90.0	94.6	94.7	94.7	94.8	94.5	94.6	98.1							
Tank Cars #2 - Mileage		89.0	90.0	90.0	90.0	90.0	90.0	98.0	98.0	98.0							
Others #1 - Time		8.2	8.2	8.3	8.3	8.3	8.3	8.2	8.2	8.3							
Others #2 - Mileage																	
AVERAGE RATES																	
Private Superstructures		21.14	21.14	21.14	21.14	21.14	21.14	21.38	21.38	21.61	0.00	0.00	0.00	0.00	0.00		
Private Others		27.96	28.18	28.28	28.28	28.28	28.28	29.96	29.96	30.06	0.00	0.00	0.00	0.00	0.00		
Private Total		55.58	55.66	57.27	57.33	57.29	57.30	57.24	57.29	58.58	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
Autoracks		86.00	86.16	87.00	87.00	87.67	87.67	82.66	82.67	83.67	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		

Car Hire Weights		
"Old Wts" New Wts"		
	2016	2017
For RCAF & RCR		
RR-owned Time	0.091	0.073
RR-owned Mileage	0.058	0.049
Privately-owned Cars	0.762	0.822
Autoracks	0.089	0.056
----- Check sum	1.000	1.000

Weights for Equipment Rents		
(not used in Car Hire calculation)		
	2016	2017
Car Hire - U.S.	0.583	0.605
Lease Rentals - U.S.	0.417	0.395
----- Check sum	1.000	1.000

Notes:

The Car Hire Index and Lease Rentals Index are weighed together to calculate the Equipment Rents Index
 CHARM is the Car Hire Accounting Rate Master
 The 4 bold lines are used for the Car Hire Rate. Private Total uses a weighted average of the Covered Hoppers, Tank Cars, Combined Private Superstructures, and Combined Private Others rates.

Forecast Error Calculation - Unchanged from original filed for 2018Q4

	Second Quarter 2018			Pct. Diff.	Notes
	2016 Weight	2018Q2 Forecast	2018Q2 Actual		
Labor	35.6%	422.5	422.5	0.0	* actual= forecast
Fuel	10.7%	248.9	261.4	12.5	from 1st month of quarter (MRFcalcs spreadsheet, RCAf tab linked index)
M&S	5.0%	258.0	258.0	0.0	* actual=forecast
Equip Rents	5.9%	228.9	230.4	1.5	from Equipment Rents below
Depreciation	15.6%	224.6	223.5	-1.1	PPI-RE 202.00 202.00 202.10 0.9040
Interest	2.2%	60.5	60.5	0.0	* actual= forecast
Other	25.0%	229.5	231.1	1.6	PPI-LF 205.20 206.10 207.00 0.8920
Weighted Avg	100.0%				
1980 = 100		297.2	298.8		calculated
1980 = 100 (linked)		274.9	274.2		calculated
4Q17 = 100	2.645	103.9	103.7		calculated
4Q12 = 100	2.976	92.4	92.1		calculated
4Q07 = 100	2.459	111.8	111.5		calculated
4Q02 = 100	1.921	143.1	142.7		calculated
4Q97 = 100	1.732	158.7	158.3		calculated
Forecast Error		-0.2			calculated -0.002 = RCAf adj.
Prior Quarter					
1980 = 100		296.8	296.0 **		
1980 = 100 (linked)		274.5	271.6		
4Q12 = 100		103.8	102.7		calculated
4Q07 = 100		92.2	91.3		calculated
4Q02 = 100		111.6	110.5		calculated
4Q97 = 100		142.9	141.4		calculated
4Q92 = 100		158.5	156.8		calculated
Equipment Rents					
Car Hire		209.2	210.0		from Equipment Rents/CHARM
Lease Rentals	58.3% 41.7%	229.5	231.1		(equals PPI-LF from above)
Weighted Average		217.7	218.8		calculated
Linked		228.9	230.4		calculated
Prior Quarter					
Weighted Average		215.6	216.0 **		
Linked		226.7	227.5		
Sum of Weights	ok				** if fourth quarter, weighted avg for prior needs to use new
Sum of ER Wt.	ok				weights (applies to both columns C and D, rows 24 and 39), linked is ok
					D24 and D39 would come from All-InclusiveActual.xlsx (column E) in RCAf/8AI
					C24 and 39 would come from 3Q rebenchmarked column in indexcalc.xls

Forecast Error Calculation - Unchanged from original filed for 2019Q1

	Third Quarter 2018			Pct. Diff.	Notes
	2016 Weight	2018Q3 Forecast	2018Q3 Actual		
Labor	35.6%	434.3	434.3	0.0	* actual= forecast from 1st month of quarter (MREcalcs spreadsheet, RCAF tab linked index)
Fuel	10.7%	291.0	274.0	-17.0	
M&S	5.0%	263.7	263.7	0.0	
Equip Rents	5.9%	230.5	231.8	1.3	* actual=forecast from Equipment Rents below
Depreciation	15.6%	223.5	224.6	1.1	PPI-RE 202.40 202.40 204.10 0.9040
Interest	2.2%	60.5	60.5	0.0	* actual= forecast
Other	25.0%	231.5	232.5	1.0	PPI-LF 207.50 207.40 207.40 0.8920
Weighted Avg	100.0%				
1980 = 100		306.6	305.3		calculated
1980 = 100 (linked)		283.6	280.2		calculated
4Q17 = 100	2.645	107.2	105.9		calculated
4Q12 = 100	2.976	95.3	94.2		calculated
4Q07 = 100	2.459	115.3	113.9		calculated
4Q02 = 100	1.921	147.6	145.9		calculated
4Q97 = 100	1.732	163.7	161.8		calculated
Forecast Error		-1.3			calculated -0.013 = RCAF adj.
Prior Quarter					
1980 = 100		297.2	298.8 **		
1980 = 100 (linked)		274.9	274.2		
4Q12 = 100		103.9	103.7		calculated
4Q07 = 100		92.4	92.1		calculated
4Q02 = 100		111.8	111.5		calculated
4Q97 = 100		143.1	142.7		calculated
4Q92 = 100		158.7	158.3		calculated
Equipment Rents					
Car Hire		210.4	211.2		from Equipment Rents/CHARM
Lease Rentals	58.3% 41.7%	231.5	232.5		(equals PPI-LF from above)
Weighted Average		219.2	220.1		calculated
Linked		230.5	231.8		calculated
Prior Quarter					
Weighted Average		217.7	218.8 **		
Linked		228.9	230.4		
Sum of Weights	ok				** if fourth quarter, weighted avg for prior needs to use new
Sum of ER Wt.	ok				weights (applies to both columns C and D, rows 24 and 39), linked is ok D24 and D39 would come from All-InclusiveActual.xlsx (column E) in RCAF/8AI C24 and 39 would come from 3Q rebenchmarked column in indexcalc.xls

Forecast Error Calculation - Revised 2017 Weights - Changed from original for 2019Q2

	Fourth Quarter 2018			Difference		Notes
	2017	2018Q4	2018Q4	Pt.	Pct.	
Labor	Weight	Forecast	Actual			
Fuel	34.8%	439.2	439.2	0.0	0%	* actual=forecast
M&S	12.9%	283.9	297.4	13.5	5%	from 1st month of quarter
Equip Rents	4.9%	269.8	269.8	0.0	0%	* actual=forecast
Depreciation	5.7%	236.0	235.7	-0.3	0%	from Equipment Rents below
Interest	15.7%	223.8	225.1	1.3	1%	PPI-RE
Other	2.1%	62.4	62.4	0.0	0%	* actual=forecast
	23.9%	235.5	233.3	-2.2	-1%	PPI-LF
Weighted Avg	100.0%					
1980 = 100		308.9	310.3			calculated
1980 = 100 (linked)		285.9	285.3			calculated
4Q17 = 100	2.645	108.1	107.9			calculated
4Q12 = 100	2.976	96.1	95.9			calculated
4Q07 = 100	2.459	116.3	116.0			calculated
4Q02 = 100	1.921	148.8	148.5			calculated
4Q97 = 100	1.732	165.1	164.7			calculated

Factors to change from
1982=100 to 1980 = 100

0.9040
0.8920

Forecast Error → -0.2 calculated -0.002 = RCAF adj.

Prior Quarter
1980 = 100 306.4 304.7 **
1980 = 100 (linked) 283.6 280.2
4Q17 = 100 107.2 105.9

Re-calculated using new weights

calculated

4Q12 = 100 95.3 94.2
4Q07 = 100 115.3 113.9
4Q02 = 100 147.6 145.9
4Q97 = 100 163.7 161.8

Equipment Rents

Car Hire 60.5% 216.4 216.7
Lease Rentals 39.5% 235.5 233.3

from Equipment Rents/CHARM
(equals PPI-LF from above)

calculated

calculated

Weighted Average 223.9 223.3

Linked 236.0 235.7

Prior Quarter

Weighted Average 218.7 219.6 **

Linked 230.5 231.8

Re-calculated using new weights

** if fourth quarter, weighted avg for prior needs to use new weights, linked is ok

All-Inclusive Index (Actual) - Revised 2017 Weights

	17 Wts	3Q/18 16 Wts	3Q/18 17 Wts	% Chg.	4Q/18 17 Wts	% Chg.	1Q/19 17 Wts	% Chg.	2Q/19 17 Wts	3Q/19 17 Wts	% Chg.
Labor		434.3	434.3	0.0%	439.2	1.1%		NA		NA	NA
Fuel	34.8%	274.0	274.0	0.0%	297.4	8.5%		NA		NA	NA
M&S	4.9%	263.7	263.7	0.0%	269.8	2.3%		NA		NA	NA
Equipment Rents	5.7%	231.8	231.8	0.0%	235.7	1.7%	0.0	NA	#DIV/0!	#DIV/0!	NA
Depreciation	15.7%	224.6	224.6	0.0%	225.1	0.2%		NA		NA	NA
Interest	2.1%	60.5	60.5	0.0%	62.4	3.1%	62.4	0.0%	62.4	62.4	0.0%
Other	23.9%	232.5	232.5	0.0%	233.3	0.3%		NA		NA	NA
	1.0000										
Weighted Avg.		305.3	304.7	-0.2%	310.3	1.8%	1.3	NA	#DIV/0!	#DIV/0!	NA
Linked		280.2			285.3	1.8%	1.2	NA	#DIV/0!	#DIV/0!	NA
10/1/80	1.027	272.8			277.8	1.8%	1.2	NA	#DIV/0!	#DIV/0!	NA
10/1/82	1.209	231.8			236.0	1.8%	1.0	NA	#DIV/0!	#DIV/0!	NA
4Q/87	1.322	212.0			215.8	1.8%	0.9	NA	#DIV/0!	#DIV/0!	NA
4Q/92	1.569	178.6			181.8	1.8%	0.8	NA	#DIV/0!	#DIV/0!	NA
4Q/97	1.732	161.8			164.7	1.8%	0.7	NA	#DIV/0!	#DIV/0!	NA
4Q/02	1.921	145.9			148.5	1.8%	0.6	NA	#DIV/0!	#DIV/0!	NA
4Q/07	2.459	113.9			116.0	1.8%	0.5	NA	#DIV/0!	#DIV/0!	NA
4Q/12	2.976	94.2			95.9	1.8%	0.4	NA	#DIV/0!	#DIV/0!	NA
4Q/17	2.645	105.9			107.9	1.9%	0.5	NA	#DIV/0!	#DIV/0!	NA

Equipment Rents

Car Hire	60.5%	211.2	211.2	0.0%	216.7	2.6%		NA		NA	NA
Lease Rentals	39.5%	232.5	232.5	0.0%	233.3	0.3%	0.0	NA	0.0	0.0	NA
ER Weighted Avg	1.0000	220.1	219.6	-0.2%	223.3	1.7%	0.0	NA	0.0	0.0	NA
ER Linked		231.8			235.7	1.7%	0.0	NA	#DIV/0!	#DIV/0!	NA

Impact/Check of weight change	16 Wts	17 Wts
Labor	137.673	151.136
Fuel	57.266	35.346
Material & Supplies	13.712	12.921
Equipment Rents	12.517	13.213
Depreciation	28.300	35.262
Interest	0.908	1.271
Other	52.778	55.568
Weighted Avg.	303.153	304.717
ER Weighted Avg.	220.4655	219.6135

As info only