

ASSOCIATION
OF AMERICAN
RAILROADS

Craig F. Rockey
Vice President - Policy

March 5, 2001

The Honorable Vernon A. Williams
Secretary
Surface Transportation Board, Room 711
1925 K Street, N.W.
Washington, DC 20423-0001

Dear Mr. Williams:

This submission is the AAR forecast of the second quarter 2001 All-Inclusive Index and Rail Cost Adjustment Factor, filed in Ex Parte No. 290 (Sub-No. 5) (2001-2), *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 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 second quarter 2001 results, and shows the percentage changes from the previous quarter.

	<u>2001Q1</u>	<u>2001Q2</u>	<u>% Change</u>
All-Inclusive Index	107.9	107.2	-0.6
Preliminary RCAF	1.079	1.072	-0.6
Forecast Error Adjustment	0.006	0.004	
RCAF (Unadjusted)	1.085	1.076	-0.8
Productivity Adjustment Factor	1.8180	1.8305	
RCAF (Adjusted)	0.597	0.588	-1.5
PAF-5	1.8888	1.9050	
RCAF-5	0.574	0.565	-1.6

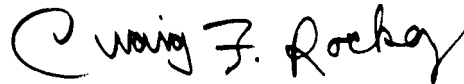
Page 2

March 5, 2001

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.

Two copies of the quarterly non-proprietary workpapers underlying this submission are 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. A third copy of the working papers has been delivered to Jeff Warren in the STB office handling this proceeding. All workpapers are available for STB inspection. Questions should be directed to me or Clyde Crimmel (639-2309) of this office.

Sincerely,

A handwritten signature in black ink that reads "Craig F. Rockey". The signature is written in a cursive style with a large, stylized initial "C".

Craig F. Rockey

Attachments

**Second Quarter 2001
All-Inclusive Index**

Ex Parte No. 290 (Sub-No. 5) (2001-2)

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

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

March 5, 2001

Table of Contents

Subject	Page
Introduction	1
Index Weights	2
All-Inclusive Index - Second Quarter 2001	3
Forecast vs. Actual All Inclusive Index - Fourth Quarter 2000	4
Productivity	5
Rail Cost Adjustment Factor - Second Quarter 2001	6
Appendices	
A Labor	
B Fuel	
C Materials & Supplies	
D Equipment Rents	
E Depreciation	
F Interest	
G Other Expenses	

Introduction

On January 2, 1985, the Interstate Commerce Commission (ICC) [now the Surface Transportation Board (STB)] adopted the All-Inclusive Index of Railroad costs as the basis for the Rail Cost Adjustment Factor (RCAF). The quarterly projection of railroad costs, as documented herein, employs the All-Inclusive Index as required by the regulations. Also presented in this submission is the RCAF, both Adjusted and Unadjusted, as required by the ICC in its decision in Ex Parte No. 290 (Sub-No. 4), *Rail Cost Recovery Procedures - Productivity Adjustment*, served March 24, 1989. In addition, the AAR has included (but does not endorse) the RCAF-5, which was instituted by an STB decision served October 3, 1996 in Ex Parte No. 290 (Sub-No. 7), *Productivity Adjustment - Implementation*. This quarter's projection of railroad costs is for the second quarter of 2001.

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. The external weights are calculated using 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 previous (1998) weights were used for the fourth quarter of 1999 through the third quarter of 2000. Beginning with the fourth quarter of 2000, the 1999 weights are used. Because of an October revision by one railroad to its annual report (after the 2000Q4 RCAF had been approved), the 1999 weights have been revised slightly. More detail on the revision can be found in the (2001Q1) December 5, 2000 RCAF filing. The forecast error in this (2001Q2) filing accounts for the revision to the 1999 weights. All changes from 1998 to 1999 were by less than 1 percentage point. The current 1999 (with revisions) and 1998 weights are shown below.

RCAF Weights		
	Previous 1998	Current 1999
Labor	39.9 %	39.3 %
Fuel	7.0	7.1
Materials & Supplies	5.5	5.3
Equipment Rents	10.8	11.4
Depreciation	10.6	10.6
Interest	4.8	4.6
Other	21.4	21.7

Reweighting 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 linked in order to eliminate the effect of the change in weighting.

All-Inclusive Index Second Quarter 2001

The components and values of the current and previous All-Inclusive Indexes are shown below. Details of the construction of each component of the index are contained in the Appendices.

	1999 Weights	Forecast		Percent Change
		Previous 2001Q1	Current 2001Q2	
1. Labor	39.3%	254.4	254.5	0.0 %
2. Fuel	7.1%	129.7	102.7	-20.8
3. M&S	5.3%	148.7	149.5	0.5
4. Equipment Rents	11.4%	174.7	177.9	1.8
5. Depreciation	10.6%	150.3	150.2	-0.1
6. Interest	4.6%	94.9	94.9	0.0
7. Other	21.7%	161.0	161.7	0.4
8. Weighted Average				
a. 1980 = 100		192.2	190.9	
b. 1980 = 100 (linked)		186.9	185.6 ¹	
c. 4Q97 = 100		107.9	107.2 ²	-0.6

¹ To calculate the 1980 = 100 Linked Index:

$$\text{Index}_{80} = (\text{Current Index} / \text{Previous Index}) * \text{the Previous Quarter Linked Index}$$

$$= 190.9 \text{ divided by } 192.2 \text{ times } 186.9$$

$$= 185.6$$

² To calculate the 4Q97 = 100 index:

$$\text{Index}_{4Q97} = (\text{Current Linked Index} / \text{4Q97 Index}) * 100$$

$$= 185.6 \text{ divided by } 173.2 \text{ times } 100$$

$$= 107.2$$

4Q92 based index = 118.3
4Q87 based index = 140.4

Forecast vs. Actual All-Inclusive Index Fourth Quarter 2000

The components and values of the All-Inclusive Index are shown below. Details of the construction of each component of the index are contained in the Appendices.

	1999 Weights	Fourth Quarter 2000		Amt Difference
		Forecast	Actual	
1. Labor	39.3%	247.1 ¹	245.5	
2. Fuel	7.1%	123.4	130.7	
3. M&S	5.3%	150.1	150.1	
4. Equipment Rents ²	11.4%	174.2	174.5	
5. Depreciation	10.6%	150.3	150.2	
6. Interest	4.6%	94.9	94.9	
7. Other	21.7%	160.3	160.2	
8. Weighted Average				
a. 1980 = 100		188.9 ¹	188.7	
b. 1980 = 100 (linked)		183.5	184.1 ³	
c. 4Q97 = 100 ⁴		105.9	106.3	0.4

Forecast error —————▶ **0.4 index points**

¹ Calculated using original 1999 weights which were subsequently revised. See note 1 on page 3 of Appendix A in the December 5, 2000 RCAF filing.

	1999 Weights	Fourth Quarter 2000	
		Forecast	Actual
Car-Hire	54.9%	177.5	177.5
Lease Rentals	45.1%	160.3	160.2
Weighted Average		169.3 ¹	169.7
Weighted Average (linked)		174.2	174.5

³ Linked actual index = (actual index / previous actual index) x previous linked actual index.

$$184.1 = 188.7 / 187.1 \times 182.5$$

Note: the previous actual index has been recalculated using 1999 weights.

⁴ The 4Q97 based indexes are 1980 based indexes divided by the 4Q97 index (173.2/100).
 4Q92 based indexes are the 1980 based indexes divided by the 4Q92 index (156.9/100).
 2000Q4 actual index based on 4Q92: —————▶ 117.3

Productivity

On January 25, 2001, the STB served a decision in Ex Parte 290 (Sub-No. 4) which added the year 1999 to the Productivity Adjustment Factor (PAF) and deleted the year 1994. This creates an average annual productivity for 1995 through 1999 of 2.8 percent – a decrease from the 1994 through 1998 average of 3.5 percent. The components of this average annual value are shown on the following table. Productivity changes are calculated by dividing the output index by the input index. The average annual rate is calculated by multiplying each of the the five productivity changes together and taking the result to the one fifth power. The quarterly productivity adjustment factors (PAF) are calculated by increasing the previous quarter's PAF by quarterly versions of the annual rate which are the fourth root of the average annual growth rate. The difference between the PAF and the PAF-5 is the timing of the 5-year productivity trend.

Comparison of Output, Input, & Productivity			
1995 - 1999			
Year	Output Index (1)	Input Index (2)	Productivity Changes (3)
1995	1.058	1.045	1.012
1996	1.038	0.913	1.137
1997	1.007	1.019	0.988
1998	1.005	1.018	0.987
1999	1.028	1.003	<u>1.025</u>
Average			1.028
Previous Average (1994-1998)			1.035

Calculation of PAF and PAF-5			
For 1995-1999 use fourth root of avg. productivity change			1.0069
For 1994-1998 use fourth root of previous avg. change			1.0086
Quarter	Year	PAF	PAF-5
Q1	2001	<u>1.8180</u>	1.8888 ← 1994-1998
Q2	2001	1.8305	1.9050 ←
Q3	2001	1.8431	1.9214 ← 1995-1999
Q4	2001	1.8558	1.9379
Q1	2002	1.8686	1.9513

Rail Cost Adjustment Factor Second Quarter 2001

Four RCAF values are presented in this filing. Two of the indexes, the All-Inclusive Index and the Unadjusted RCAF, are not modified for productivity, while the Adjusted RCAF and the RCAF-5 incorporate a productivity calculation. The All-Inclusive Index and all four RCAF values, plus the percent change for each, are shown below.

	Previous 2001Q1	Current 2001Q2	Percent Change
All-Inclusive Index ¹	107.9	107.2	-0.6
Preliminary RCAF ²	1.079	1.072	-0.6
Forecast Error Adjustment ³	0.006	0.004	
RCAF (Unadjusted) ⁴	1.085	1.076	-0.8
Productivity Adjustment Factor ⁵	1.8180	1.8305	
RCAF (Adjusted) ⁶	0.597	0.588	-1.5
PAF-5 ⁷	1.8888	1.9050	
RCAF-5 ⁸	0.574	0.565	-1.6

¹ See All-Inclusive Index on page 3.

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 in this filing (page 4). The previous quarter figure is shown in a similar section of the previous quarter's filing.

⁴ Preliminary RCAF plus the forecast error adjustment.

⁵ See Productivity on page 5.

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

⁷ See Productivity on page 5.

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

Appendixes

Labor

Second Quarter 2001

The wage index and supplements index for the second quarter 2001 were essentially unchanged. Both indexes increased by just 0.1 index points or 0.0 percent. These changes are caused largely by a bonus payment made by one railroad. The combined impact of these changes in wages and in supplements is a similar 0.1 index points or 0.0 percent change in the overall labor index.

Wage Index

Wage Increases: There are no wage increases scheduled for the second quarter in national or independent contracts.

Lump Sums: The lump sum adjustment for the second quarter increased with the addition of the Norfolk Southern Thoroughbred Performance Bonus for its Brotherhood of Locomotive Engineers workers. The NS BLE did not receive a performance bonus in 2000, but received a 3.6 percent performance bonus in early 2001. Small lump sums were added for the Illinois Central BMW and IBFO, and for 2 Kansas City Southern shops. However, the IC and KCS lump sums had no impact on the wage index.

Back Pay: The back pay rate decreased in the second quarter. A back pay amount was added for a recent Canadian National/Illinois Central TCU agreement. This increase was more than offset by the complete amortization of two back pay amounts: back pay for the national skill adjustment for the BMW and BRS, and backpay for the Soo Line's BLE, BRS, and UTU-Yardmasters.

Other: This component contains the amortization of a profit sharing payment that the BNSF made to its Brotherhood of Locomotive Engineers employees from the former Atchison, Topeka and Santa Fe Railway in the spring of 2000. The second quarter figure remains \$0.008.

Supplements Index

The Supplements index is forecast to increase by 0.1 index points or 0.0 percent from the first quarter. Health & welfare costs, supplemental annuities, and unemployment insurance were unchanged. Railroad retirement increased by small amounts because of the slight increase in total wages caused by the lump sum/bonus payment.

Labor Index Calculation

As shown in table A-1 on the next page, the miniscule increases in the Wage Index and the Supplements Index had a combined effect of 0.1 index points or a 0.0 percent increase in the Labor Index.

Labor Second Quarter 2001

Table A-1 Labor Index

	2001Q1	2001Q2	Change	
			Percent	Amount
<u>Base Wage – Straight Time & Pay For Time Not Worked</u>	\$26.100	\$26.100	0.0%	\$0.000
Adjustments:				
Lump Sum	0.006	0.031	416.7%	0.025
Back Pay	0.059	0.051	-13.6%	-0.008
Other	0.008	0.008	0.0%	0.000
Total Wages	<u>\$26.173</u>	<u>26.190</u>	0.1%	0.017
Health & Welfare Benefits	3.684	3.684	0.0%	0.000
RR Retirement & Medicare	5.947	5.950	0.1%	0.003
Supplemental Annuities	0.232	0.232	0.0%	0.000
Unemployment Insurance	0.108	0.108	0.0%	0.000
Other	0.009	0.009	0.0%	0.000
Adjustments	0.000	0.000		
Total Supplements	<u>\$9.980</u>	<u>\$9.983</u>	0.0%	0.003
Total Labor	\$36.153	\$36.173		
Wage Index¹	224.0	224.1	0.0%	
Supplements Index²	368.8	368.9	0.0%	
Total labor Index, 1999 Weights ³	260.9	261.0		
Labor Index (linked)⁴	254.4	254.5	0.0%	

¹ 1980 wage rate \$11.685

² 1980 supplements rate \$2.706

³ 1999 weights: wages, supplements 74.5% 25.5%

⁴ 2001Q2 linked Index = 2001Q1_{linked} x (2001Q2 / 2001Q1)
 = 254.4 x 261.0 / 260.9

Fuel

Second Quarter 2001

The forecast for fuel is based on: (1) a survey of railroad fuel purchasing officers concerning current price and volume levels, (2) expectations of railroad purchasing officers based on discussions with their major suppliers, and (3) a consensus of petroleum industry experts and general business publications.

Railroad fuel prices are expected to be lower in the second quarter (April) than the first quarter average (January). Fuel prices have been trending lower since November. Members of OPEC have said they may need to cut oil production because of a decline in demand.

Forecasted fuel index	102.7
Increase from previous quarter forecast	-20.8%
Increase from previous quarter actual	-13.5%

Materials & Supplies

Second Quarter 2001

The materials & supplies index for second quarter 2001 is 0.5 percent higher than the previous quarter.

2001Q2 Materials & Supplies Index = 149.5

2001Q1 Materials & Supplies Index = 148.7

Difference	0.8 basis points
	or
	0.5 %

Equipment Rents Second Quarter 2001

The equipment rents index consists of two components -- car hire and lease rentals. The methodology used to create these two components and the final equipment rents index are explained below.

Car Hire

The car hire component is indexed using the Car Hire Rate Master File (CHARM). First, an average rate per car is developed. Second, those average rates are grouped into car type categories to create an overall summary of car hire rates. Car hire rates for the forecast quarter are estimated based on data for the most recent month available. The summary rates are then compared from quarter to quarter to determine the car hire index.

Lease Rentals

The lease rental 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 forecast of the PPI-LF is discussed in Appendix G.

Equipment Rent Index Calculation

The table below calculates the Equipment Rent Index.

	1999 Weight	2001Q1	2001Q2	Percent Change
Car Hire	54.9%	177.7	182.9	2.9 %
Lease Rentals	45.1%	161.0	161.7	0.4
Weighted Average		170.2	173.3	1.8
Weighted Average (Linked)		174.7	177.9	1.8

The Car Hire forecast uses the latest CHARM File rates. For the first quarter, December 1 of the previous year is used. For the second, third and fourth quarters; March 1, June 1, and September 1 are used, respectively.

The Lease Rental forecast uses the AAR PPI-LF forecast for that quarter.

Depreciation Second Quarter 2001

The Producer Price Index for Railroad Equipment (PPI-RE) is used to index depreciation expense. The PPI-RE is forecast using an ARIMA process on 6 years of monthly data (a sample size of 72) with the most recent available monthly data being the first month of the quarter prior to the forecast quarter. For a first quarter forecast, the most recent month of data available would be for October of the prior year. For a second quarter forecast, January would be the most recent monthly data available. April and July would be the most recent months available for third and fourth quarter forecasts, respectively. The output from the forecast model is shown on page 2 of this appendix for 1982=100. The value for the forecast, lower by only 0.1 index points from the previous quarter's forecast, reflects a PPI-RE that has changed very little over the last 10 months.

Forecasted depreciation index (1982=100)	135.8
Forecasted depreciation index (1980=100)	150.2
Increase from previous quarter forecast	-0.1%
Increase from actual first month of previous quarter	0.0%
Increase from same quarter of prior year	0.0%

Depreciation Second Quarter 2001

PPI RAIL EQUIPMENT

Forecast Model for PPIRE

Recommended model: Exponential Smoothing, no trend, no seasonality

<u>Component</u>	<u>Smoothing Weight</u>	<u>Final Value</u>
Level	0.62812	135.80

Within-Sample Statistics

Sample size 72	Number of parameters 1
Mean 135.5	Standard deviation 1.489
R-square 0.335	Adjusted R-square 0.335
Durbin-Watson 1.72	Ljung-Box(18)=18.35 P=0.5672
Forecast error 1.214	BIC 1.242
MAPE 0.004238	RMSE 1.206
MAD 0.5752	Forecast Report

Actual Values for the Most Recent 6 Periods:

<u>Date</u>	<u>Actual</u>
2000-08	135.700
2000-09	135.900
2000-10	135.900
2000-11	135.800
2000-12	135.800
2001-01	135.800

Forecasted Values

<u>Date</u>	<u>2.5 Lower</u>	<u>Forecast</u>	<u>97.5 Upper</u>
2001-02	133.369	135.804	138.239
2001-03	132.929	135.804	138.679
2001-04	132.547	135.804	139.061
2001-05	132.206	135.804	139.402
2001-06	131.895	135.804	139.713
QTR AVG	132.216	135.804	139.392
2001-07	131.606	135.804	140.002
2001-08	131.336	135.804	140.272
2001-09	131.082	135.804	140.526

Interest Second Quarter 2001

The Interstate Commerce Commission, in its decision served February 28, 1989, revised the All-Inclusive Index methodology to include a specific interest component, which is to track changes in the average interest rate from year to year. The interest rate is essentially the embedded cost of debt, i.e., total interest expense divided by average total long term debt. The interest rate is calculated for the most recent year and used until the next year's figures are available. Typically in the fourth quarter filing, the interest rate is updated to the new level. The source for interest expense is Schedule 210, column b, from the R-1 annual report. The lines used from current R-1 annual reports are listed below. The source for average total debt is Schedule 200 from the R-1 annual report. The sums of data from columns b and c (ending and beginning balances) are combined and divided by 2 to compute an average balance. The line numbers are listed below.

Interest Expense (Schedule 210)

Line	
42	Total Fixed Charges
44	Contingent Interest
less	
22	Release of Premium on Funded Debt

Average Total Debt (Schedule 200)

Line	
30	Current Loans and Notes Payable
39	Equipment Obligations and Other Long Term Debt Due Within One Year
41	Funded Debt Unmatured - Non-Current
42	Equipment Obligations - Non-Current
43	Capitalized Lease Obligations - Non-Current
44	Debt in Default - Non-Current
45	Accounts Payable: Affiliated Companies - Non-Current
46	Unamortized Debt Premium - Non-Current

1999	Interest Rate	7.45%
1980	Interest Rate	7.85%
2001Q2	Interest Index	94.9
2001Q1	Interest Index	94.9
	Percent Change	0.0%

Other Expenses Second Quarter 2001

The Producer Price Index for Industrial Commodities less Fuel and Related Products and Power (PPI-LF) is used to index purchased services, casualties and insurance, loss and damage, taxes (other than income and payroll), general and administrative expenses, and lease rentals. Like the PPI-RE, the PPI-LF is forecast using an ARIMA process on 6 years of monthly data (a sample size of 72) with the most recent available monthly data being the first month of the quarter prior to the forecast quarter. For a first quarter forecast, the most recent month of data available would be for October of the prior year. For a second quarter forecast, January would be the most recent monthly data available. April and July would be the most recent months available for third and fourth quarter forecasts respectively. The output from the forecast model is shown on page 2 of this appendix for 1982=100. The figure forecast by the model is 0.4 percent above the previous quarter forecast.

Forecasted Other Expense (1982=100)	144.2
Forecasted Other Expense (1980=100)	161.7
Increase from previous quarter forecast	0.4%
Increase from actual first month of previous quarter	0.5%
Increase from same quarter of prior year	1.2%

Other Expenses Second Quarter 2001

PPI INDUSTRIAL COMMODITIES LESS FUEL AND RELATED PRODUCTS AND POWER

Forecast Model for PPILF
ARIMA(1,1,1) with log transform

Term	Coefficient	Std. Error	t-Statistic	Significance
a[1]	0.8977	0.0802	11.1926	1.0000
b[1]	0.6184	0.1489	4.1542	0.9999

Within-Sample Statistics

Sample size 72	Number of parameters 2
Mean 4.94	Standard deviation 0.01027
R-square 0.975	Adjusted R-square 0.9747
Durbin-Watson 2.027	Ljung-Box(18)=14.26 P=0.2879
Forecast error 0.001634	BIC 0.2389
MAPE 0.001229	RMSE 0.2259
MAD 0.172	Forecast Report

Actual Values for the Most Recent 6 Periods:

Date	Actual
2000-08	142.500
2000-09	142.700
2000-10	143.000
2000-11	142.800
2000-12	142.800
2001-01	143.500

Forecasted Values

Date	2.5 Lower	Forecast	97.5 Upper
2001-02	143.247	143.704	144.162
2001-03	143.146	143.887	144.632
2001-04	143.033	144.052	145.077
2001-05	142.903	144.200	145.507
2001-06	142.758	144.332	145.924
QTR AVG	142.898	144.195	145.503
2001-07	142.600	144.452	146.328
2001-08	142.430	144.559	146.720
2001-09	142.252	144.656	147.099