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Treatment of Depreciation in Railway Income Statements

By THOMAS R. LILL.

The purpose of this article is to show that depreciation, now required by the interstate commerce commission to be included as a part of the operating expenses of railroads, should be eliminated therefrom and shown as a separate item of expense.

Authorities agree that depreciation should be deducted from gross revenue before the net profit is determined. Hatfield says: "The strong position taken by the interstate commerce commission (in showing depreciation as a part of operating expenses) is theoretically correct, for depreciation is an expense."

The amount of depreciation, however, which has taken place and the consequent wastage of values which should be taken into consideration before arriving at the net profit must of necessity be estimated. Such estimate may be based upon proved experience tables or on more or less scientific methods, but it is none the less an estimate.

There are, then, two classes of expenses included in the operating expenses of railroads—actual expenses, which include the known cost of labor hired and property consumed in operation, and estimated expenses, which represent the unknown but estimated value of property consumed in operation.

Actual expenses are variable according to the law of supply and demand. Estimated expenses are variable according to the ability, honesty and experience of the estimator; and persons equal in these respects have been known to disagree regarding the amount of depreciation which has taken place.

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There is no question that depreciation should be taken into consideration before net profits are determined; but the indiscriminate mixture of such estimated expenses with actual expenses, which is required by the interstate commerce commission, is not conducive to clear thinking, is frequently the cause of false conclusions being drawn regarding the results of operations, and affords an easy method of manipulation which persons may avail themselves of with little danger of discovery.

To illustrate the manner in which results may apparently be altered by fluctuations in the amount of depreciation charged to operating expenses, an analysis was made of the annual reports of the Pennsylvania Railroad Company for the years 1912 to 1915 inclusive.

On page seven of the 1912 report, the president of the company stated that rail operating revenues had increased 10.87 per cent. and that rail operating expenses had increased 11.84 per cent. as compared with the year 1911, indicating that operating expenses were increasing at a faster ratio than operating revenues.

At this time considerable agitation was current for increased freight rates and the statement above was quoted as showing that increased freight rates were necessary.

The results of operations for the year 1912 were shown by the report to be as follows, the segregation of the depreciation charges being the result of an analysis of the detailed operating statements on pages 62 to 65 of the 1912 report:

	1911	1912	Per cent. of increase
Actual expenses	\$108,839,403	\$119,942,805	10.20
Estimated expenses (depreciation)	4,388,990	6,695,139	52.54
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Total operating expenses per report	\$113,228,393	\$126,637,944	11.84

It is apparent that the amount of operating expenses for the year 1912 has been materially raised by an increase of the estimated amount of depreciation.

Was the property of the Pennsylvania Railroad wearing out one-half again as fast in 1912 as it did in 1911?

Treatment of Depreciation in Railway Income Statements

INCOME STATEMENT, PENNSYLVANIA RAILROAD COMPANY

for the years ended December 31st

	1911	1912	1913	1914	1915
Railway operating revenues.....	157,487,412.70	174,607,598.22	185,400,825.37	187,251,851.22	196,628,170.10
Percentage of increase or decrease.....		+ 10.87	+ 6.18	+ 8.69	+ 5.00
Railway operating expenses, excluding depreciation.	108,839,402.99	119,942,805.16	132,019,510.62	137,564,802.35	135,258,616.94
Percentage of increase or decrease.....		+ 10.20	+ 10.07	+ 9.08	- 1.68
Net operating revenues.....	48,648,009.71	54,664,793.06	53,381,314.75	49,687,048.87	61,369,553.16
Deductions from net operating revenues:					
Uncollectible railway revenues.....				11,313.24	46,280.71
Loss from auxiliary operations. Note A.....	1,525,201.96	1,147,985.23	1,904,281.08		
Railway tax accruals.....	6,795,885.74	7,128,535.02	7,326,660.27	7,689,523.47	7,594,403.88
Depreciation.....	4,388,990.04	6,695,139.43	5,967,890.23	6,727,440.56	7,477,943.89
Percentage of increase or decrease (depreciation)		+ 52.54	- 10.86	+ .50	+ 11.16
Total.....	12,710,077.74	14,971,659.68	15,198,831.58	14,428,277.27	15,118,628.48
Railway operating income.....	35,937,921.97	39,693,133.38	38,182,483.17	35,258,771.60	46,250,924.68
Recapitulation of percentages relating to the in- creases or decreases in operating expenses:					
Actual expenses, excluding depreciation.....		+ 10.20	+ 10.07	- 9.08	- 1.68
Estimated expenses (depreciation).....		+ 52.54	- 10.86	+ .50	+ 11.16
As reported by company.....		+ 11.84	+ 8.96	- 8.67	- 1.10

Note A—In accordance with the revised classification of operating revenues and expenses of the interstate commerce commission effective July 1, 1914, the revenues and expenses of auxiliary operations are included in railway operating revenues and expenses for the years 1914 and 1915.

Note B—The accounts for the year 1914 include the operations of the Northern Central Lines for the entire year and increases or decreases are the result of a comparison with similar combined results for 1913.

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To illustrate further how estimates of depreciation may vary, a comparison is presented of steam locomotive depreciation charges for the years 1911 and 1912:

Steam locomotive depreciation charged to operating expenses in 1912	\$2,547,474.00
Amount charged in 1911	1,114,267.00
	<hr/>
Increase in 1912 as compared with 1911.....	\$1,433,207.00
	or 128.66 per cent.

Did steam locomotives wear out more than twice as fast in 1912 as they did in 1911?

With a view of seeing whether the increased rate of depreciation for steam locomotives in 1912 was the result of increased usage received an examination was made of locomotive statistics on page 57 of the 1912 report, which showed that locomotive mileage increased only 9.75 per cent.

No railroad management has a higher reputation for honesty and efficiency than that of the Pennsylvania Railroad, and it should not be inferred that the increased rates of depreciation charged against operating expenses in 1912 were the result of a desire on the part of the officers of the railroad to make their report show results other than what they were. The increased rates were probably the result of a desire on the part of the management to place depreciation charges upon a proper basis, and the increased rates adopted still appear to be too low.

As stated by the president in the 1913 report, depreciation charges were on the basis of 3 per cent. for freight cars and 4 per cent. on passenger cars and locomotives. On this basis, freight cars are estimated to last thirty-three and one-third years and passenger cars and locomotives twenty-five years.

The unqualified statement, however, that operating expenses in 1912 increased 11.84 per cent. while operating revenues only increased 10.87 per cent. is not a correct statement of the results of operation. The fact that the income statement is prepared in accordance with the requirements of the interstate commerce commission is not an entire justification therefor, since railroads may publish their reports to the public in any form they see fit.

Treatment of Depreciation in Railway Income Statements

On page seven of the 1913 report the president of the company stated that, while the revenues increased 6.18 per cent., the total expenses of rail operations showed an increase of 8.96 per cent. compared with the previous year.

Eliminating depreciation charges, as was done in 1912, the report shows that operating expenses increased 10.07 per cent. instead of 8.96 per cent. as stated by the president. The error here consists of understating the percentage of increase of operating expenses, which is the reverse of that in 1912. The

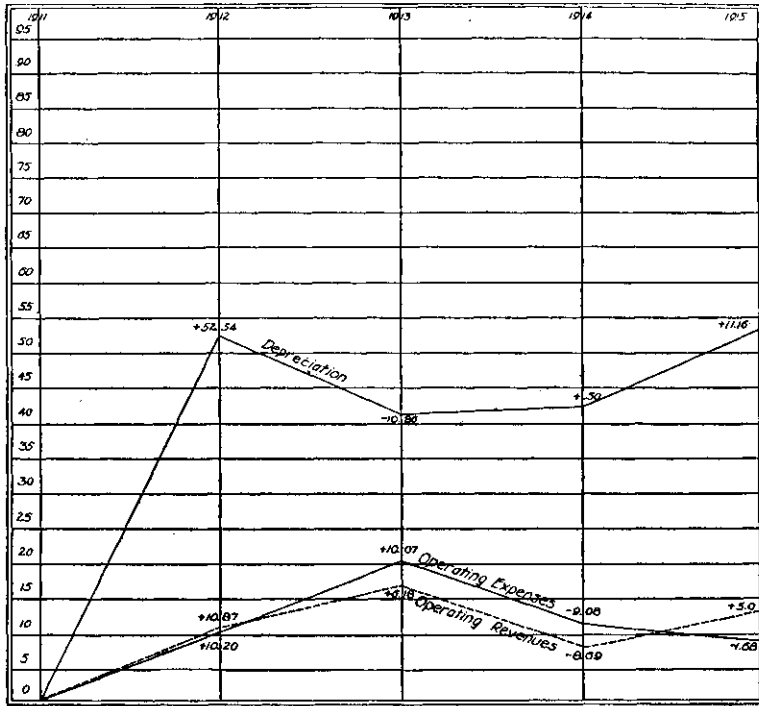


Chart of Operating Results — Pennsylvania Railroad Company.

difference is caused by an increase in actual expenses and a decrease in the estimated amount of depreciation.

On page four of the 1914 report the president stated that operating expenses decreased 8.67 per cent. Eliminating depreciation charges as before, the report shows that operating expenses decreased 9.08 per cent.

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In 1915, the president stated (on page four) that operating expenses decreased 1.1 per cent. The report shows that they decreased 1.68 per cent.

The accompanying chart shows the variations in operating revenues, expenses and depreciation for the years 1912 to 1915 inclusive. It is particularly interesting to note that notwithstanding the fact that there was a decrease of 9.08 per cent. in the operating expenses for 1914, there was a further decrease of 1.68 per cent. in 1915, while operating revenues in this year increased 5 per cent.

I think it has been demonstrated that the methods of reporting the operating expenses of railroads, which include actual and estimated expenses in one total are fundamentally incorrect.

This position is supported by the action of the Wisconsin railroad commission, which requires a separation of these two classes of expenses and the showing of the amount charged for depreciation as a distinct item in the income statement.

The income statements of the Pennsylvania Railroad for the years 1911 to 1915 inclusive, revised to show depreciation as a separate item, are presented for the purpose of study and comparison. The statements are not carried beyond railway operating income.