

missioners, underlined with red and blue. "As constructed" plans and profiles, certified by Board of Railway Commissioners, underlined with double blue lines.

Any further revision of a certified plan and profile will be denoted by an additional line.

To withdraw a plan from the files, the applicant, after looking it up in the proper index, applies for it by number at

Charge No. 28403

May 15th 1916.

Location Plan Mile 25-30 E.L.S.&A.Ry.

R. Simcox Signature

General Drafting DEPARTMENT

Fig. 4—Receipt for plan taken from plan room.

the counter, and an attendant delivers it. Its use in the plan room is unrestricted, ample counter space being provided for unrolling large plans. In order to take it from the plan room, a receipt showing the plan number, date, description of plan and the applicant's signature and department, as shown in the accompanying fig. 4, must be left with the Check desk attendant. This card is filed in a numerical index and withdrawn and destroyed when the plan is returned. The actual plan, or a full receipt for it, is thus at all times in the plan room.

To illustrate the efficiency of the sys-

and handled an average of 250 plans a day. This is probably the economic minimum for this type of handling, although one attendant could, no doubt, handle from 75 to 100 plans with little

difficulty or delay. It may be stated, generally, that this plan room is giving entire satisfaction as to the four essentials, safety, cleanliness, efficiency, and economy.

## An Analysis of the Increases in Railway Operating Expenses.

By Sir Henry L. Drayton, Chief Railway Commissioner for Canada.

A large proportion of railway expenses is represented in the salary and wages account. The governmental statistics for all railways give the amount of salaries and wages for each year since 1907; and, what is more important, the ratio of salaries and wages each year to gross earnings and operating expenses. The statement is as follows:—

Year.	Salaries and Wages.	Ratio to Gross Earnings.	Ratio to Operating Expenses.
1907	\$58,719,493	40.01	56.70
1908	60,376,607	41.09	56.26
1909	63,216,662	43.58	60.43
1910	67,167,793	38.61	55.78
1911	74,613,738	39.79	57.92
1912	94,237,623	45.09	63.59
1913	115,749,825	45.97	62.43
1914	111,762,972		

Salaries and wages, therefore, now represent more than three fifths of the total railway expenses and have increased at a more rapid ratio than the sum of other expenses, as evidenced by the above returns. A comparison of earnings and expenses per train mile is given from 1899

effective loading, as well as the benefit of a largely increased traffic, are reflected in these figures, the percentage of increase in expenses exceeds that in earnings by 23.96%. Taking the last five year period and comparing the results of 1910 with those of 1914, the earnings have increased 10.65%, and the expenses 17.74%.

The recently published statistics for 1915 give for the year ending June 30, 1915, similar earnings and expenses at \$2.144 and \$1.585 respectively, resulting in a ratio of 74% for the train mile expenses as compared with the train mile earnings. As compared with 1910 the increase in earnings is but 5.3% and the increase in expense 12.42%. In this case the percentage of increase in expenses more than doubles that of receipts. The year, however, including as it does 11 months of operations under war conditions cannot be accepted as a fair example of the earnings of the railways based on the present rates.

## CANADIAN PACIFIC RAILWAY

OFFICE OF THE CHIEF ENGINEER

MONTREAL, September 1913

R. Simcox General Drafting Dept.

For your information 1 sheet Tracing have been indexed under No. 54683

and described as As Constructed Plan Lake Simcoe Sub-division

Mile 0 to 30 1" = 400 ft

C. E. Office,  
May 1st 1913  
Cert. Ry. Com.  
Aug. 22nd 1913

N. Willard  
Recorder of plans.

Fig. 2—Stub slip for filing plans.

in the Government statistics as follow:—

	Earnings per Train Mile.	Expenses per Train Mile.
1899	\$1.192	\$0.779
1900	1.282	0.864
1901	1.366	0.944
1902	1.501	1.028
1903	1.591	1.117
1904	1.634	1.216
1905	1.614	1.213
1906	1.723	1.198
1907	1.953	1.381
1908	1.869	1.364
1909	1.816	1.309
1910	2.036	1.409
1911	2.103	1.460
1912	2.173	1.493
1913	2.263	1.604
1914	2.253	1.659

This return shows that, while earnings per train mile have been increased by 89.00% since 1899 and down to June 30, 1914, the cost of service per train mile has increased by 112.96%. While the economies effected by increased locomotive power, better grades, and more

The statistics indicate in different directions the causes of this increase.

That the increased ratio is the result of a higher wage scale rather than improvident railway managership in unnecessarily increasing the number of their employes, is quite evident from the fact that the number of railway employes per 100 miles of line operated in 1913 was 609; in 1914 the number amounted to only 517; in 1907, when the ratio was but 56.70, 551 employes are shown per 100 miles; in 1908, where the ratio fell by 0.44, 463 were employed per 100 miles of line. Notwithstanding the resultant economies effected in the wage account by employing 19,510 less men in 1914 than in 1913, a reduction of approximately 11%, the resultant economy expressed in ratio to other operating expenses is but 1.16, while the ratio of salary and wage account to gross earn-

tem, an actual instance, which is only typical, may be cited, which occurred recently in the presence of a prominent official of another railway, who was viewing the plan room and its operation. A member of the Bridge Engineer's staff entered the plan room, referred to the bridge index, and requested a plan. An attendant started for it and stopped when the check desk attendant announced, "Out to Mr. \_\_\_\_\_, in the Building Department." The applicant left the plan room less than a minute after he had entered it, with full information as to where he could find the plan. If the plan had been in the files, he would have taken it with him inside of another minute.

In busy times a staff of 5 attendants has recorded and handled over 1,000 plans across the counter in an 8-hour day. In slack times a staff of 2 has recorded