RAILROAD EARNINGS.

The following are the railroad earnings for the week ended September 14th:---

	1011.	1012.	In	crease or decrease.
C.P.R	. \$2,325,000	\$2,667,000	+	\$342,000
G.T.R	. 1,026,449	1,110,000	+	84,065
C.N.R	. 378,300	360,300	+	18,000
T. & N.O.R	. 39,366	28,573	-	10,793

New records in both gross and net earnings are shown in the C.P.R. statement for the month of August, issued on Saturday. Gross exceeded by about \$200,000 the gross in July, when earnings for the first time passed the \$12,000,000-mark. Net profits were \$36,800 ahead of net in October of last year, the previous record month for the company in this respect. The gain in net in August as compared with the same month last year was \$642,354, or nearly 16 per cent. The statement for the month follows :—

		July I to
	August, 1912.	August 31, 1912.
Gross earnings	\$12,251,715.87	\$24,304,114.45
Working expenses	7,553,790.21	15,138,011.89
Net profits	\$4,717,925.66	\$9,166,102.56

In August, 1911, the net profits were \$4,075,571.01, and from July 1st to August 31st, 1911, there was a net profit of \$7,773,599.34. The gain in net profits for the same period last year is, therefore, for August, \$642,354.65; and from July 1st to August 31st, \$1,387,503.22.

A cable to The Montreal Star says :—"The Grand Trunk August statement shows that the net profits for the Grand Trunk increased £35,200 sterling. Canada Atlantic showed a net decrease of £2,550. Grand Trunk Western, net increase of £6,850. Grand Haven, net decrease of £1,950.

The total profit for the whole system increased $\pounds_{37,550}$, which is regarded by the market as a fine showing.

PANAMA CONSTRUCTION ESTIMATES

In thirteen months a vessel will go from the Atlantic to the Pacific Ocean through the Panama Canal, according to new, revised estimates recently made public by the Panama Canal Commission. October 15th, 1913, is the tentative date set for the passage of the first boat through the canal. The "christening" will be done by a naval vessel. President Taft has been advised of the latest estimates of Colonel Goethals, in charge of canal construction work. The President's approval of the new canal opening programme is awaited. Formal opening of the canal will occur January 1st, 1915, it is announced. Commercial vessels will be given its unrestricted use in December, 1913.

That the canal will be completed far below the estimated cost of \$400,000,000 is reported by Colonel Goethals. It will run as low as \$375,000,000. About another million dollars will be saved, it is declared, in interest charges.

The total amount of excavation work to September 15th is about 242,134,000 yards. A recent increase of over 16,000,-000 yards in the estimates was caused by big slides in the Obispo division. The amount of excavation completed to September 15th was 218,000,000 yards, leaving approximately 24,-000,000 yards to be dug. The average rate of excavation a month is now about 2,500,000 yards, a conservative estimate. At the present rate of progress all the digging should be finished before September 1st, 1913.

The big dam, locks and spillways projects show stages of completion varying from 75 to 90 per cent. It is estimated that the Gatun locks will require about 2,000,000 cubic yards of concrete work. To September 15th well over 19,000,000 cubic yards has been put into place. The concrete work of the Pedro Miguel locks is nearly 95 per cent. completed, and that of the Miraflores locks over 92 per cent. The Gatun spillway will probably be completed within another month. Other engineering features show an equally advanced stage toward completion.

The canal will have a summit elevation of 85 feet above sea level, to be reached by a flight of three locks located at Gatun, on the Atlantic side, and one lock at Pedro Miguel and a flight of two at Mira Flores, on the Pacific side. Each lock will have a usable length of 1,000 feet, and a width of 110 feet, which will be the minimum width of the canal.

The canal is to be about 50 miles long from deep water in the Caribbean Sea to deep water in the Pacific Ocean. The channel will vary in width from 1,000 at a point just south of the Gatun locks, to 30 feet at a point near the Pedro Miguel lock. There will be a number of places where several boats can pass abreast of each other and the minimum depth will be 41 feet.

LARGE TURBINES FOR RIO DE JANEIRO.

After having supplied, in 1908 and 1909, six units, each of 9,000 horsepower, for the Rio de Janeiro Tramway, Light and Power Company and their power station at Pirahy, Messrs. Escher Wyss and Co., of Zürich, are installing two more turbines, each of 20,000 horsepower, so that the works will altogether have available nearly 100,000 horsepower. The firm has supplied the turbines (Pelton wheels) as well as the pipe system. The turbines are provided with vertical shafts, which are suspended, the wheels being at the lower ends. The nozzles, of which there are four to each wheel, are controlled quite independently of one another by levers from a servo-motor. Two discharge-ports are provided in the wheel-casings in case of accident. A sluice-valve is also arranged on the supply main; this valve and the outlets are operated by the pressure regulator. These measures are very necessary, since the turbines work under a head of 286 m. (940 ft. nearly), and, running at 300 revolutions per minute, consume about 6.2 cu. m. (219 cu. ft.) of water per second. Each turbine is combined with a set of two threecylinder high-pressure pumps for the oil feed, which supply 360 litres (80 gallons) of oil per minute. These are also constructed by Messrs. Escher Wyss and Co., and are driven by small Pelton wheels. There is a pressure-bearing between the turbine and generator, in addition to the foot-step, which has to support a load of 76 tons-the weight of the revolving parts. The new hydraulic mains leading to the power station have a length of 700 m. (0.44 mile), and a diameter of 1,300 mm. or 1,400 mm. (51 in. or 55 in.), like the old mains, but they are secured by stand-pipes, 150 metres in length. The mains alone weigh 5,000 tons.

The government has let the contract for the last section of the Hudson Bay Railway which it is hoped to complete by 1914. The last section extending, from Split Lake to the bay, is 165 miles long to Port Nelson and 245 miles long to Fort Churchill. This last link is to be built by Mr. J. D. McArthur. It is said to be the intention of the Hon. Frank Cochrane, as the result of his visit to Hudson's Bay, to run a railroad to the bay by electricity. A plant may be built at White Mud Falls, on the Nelson River. The Nelson River, he reports, has wonderful power possibilities, and could supply electricity to the whole of the West. The total available power is estimated at 6,000,000 horsepower