

connection between the centre sills and side girders, but it is undoubtedly a fact that the crossties, bolsters and end sills, tie these two members together in such a way that a far greater strength is obtained from them together than is apparently obtained by adding the strengths of the two members; that is, considering the steel in the side girder and centre sills as one member, and taking the centre of gravity of the entire construction, a much higher section modulus than that given would be obtained, with consequent lower fibre stresses.

It was deemed unnecessary to compute the buffing stresses, as it was considered

that in an extremely long car such as this, if it is designed to take care of the loading for this span, there can be no question about the margin of safety for any buffing stresses that might develop. In addition, the spring capacity of the platform springs amounting to 42,000 lbs., and the centre line of the draft being below the centre of gravity of the section, creates a tendency to react with an upward stress at the centre of the car, which is counteracted by the superstructure weight.

We are indebted to A. L. Graburn, Mechanical Engineer, C.N.R., for the data from which the foregoing is compiled.

Birthdays of Transportation Men in September.

Many happy returns of the day to:—

G. W. Alexander, Local Treasurer, G.T.R., Western Lines, Detroit, Mich., born at Lightcliff, Yorks., Eng., Sept. 10, 1859.

H. Bailey, Bridge and Building Master, Dominion Atlantic Ry., Yarmouth, N.S., born at Huntsville, Ont., Sept. 2, 1879.

W. B. Bamford, Division Freight Agent, Atlantic Division, C.P.R., St. John, N.B., born at Belleville, Ont., Sept. 10, 1863.

G. T. Bell, Passenger Traffic Manager, G.T.R. and G.T.P.R., Montreal, born there, Sept. 7, 1861.

W. H. Biggar, K.C., General Counsel, G.T.R. and G.T.P.R., Montreal, born at The Carrying Place, near Trenton, Ont., Sept. 19, 1852.

E. R. Bremner, ex-Division Freight Agent, G.T.R., Ottawa Division, Ottawa, born at Toronto, Sept. 9, 1875.

M. H. Brown, Division Freight Agent, Ontario Division, C.P.R., Toronto, born at Victoria Square, Ont., Sept. 2, 1866.

W. B. Bulling, ex-Assistant Freight Traffic Manager, Eastern Lines, C.P.R., Montreal, born there, Sept. 16, 1858.

W. E. Burke, Assistant Manager, Canada Steamship Lines, Ltd., Montreal, born at Belleville, Ont., Sept. 23, 1881.

C. F. Burns, Auditor of Disbursements, Intercolonial Ry., Moncton, N.B., born at Clements Port, N.S., Sept. 10, 1854.

A. D. Cartwright, Secretary, Board of Railway Commissioners, Ottawa, born at Kingston, Ont., Sept. 20, 1864.

A. W. Davis, Locomotive Foreman, G.T.R., Stratford, Ont., born at Sittingbourne, Kent, Eng., Sept. 5, 1854.

A. S. Dawson, M. Can. Soc. C.E., Chief Engineer, Department of Natural Resources, C.P.R., Calgary, Alta., born at Picton, N.S., Sept. 6, 1871.

O. L. Dickeson, President, White Pass and Yukon Route, Vancouver, B.C., born at Ottumwa, Ia., Sept. 16, 1877.

M. B. Dube, General Foreman, Transcona Shops, G. T. Pacific Ry., Transcona, Man., born at Quebec, Que., Sept. 6, 1877.

W. E. Duperow, Assistant General Passenger Agent, Grand Trunk Pacific Ry., Winnipeg, born at Stratford, Ont., Sept. 4, 1872.

W. H. Estano, Traffic Auditor, Intercolonial Ry., Moncton, N.B., born at Halifax, N.S., Sept. 29, 1874.

C. B. Foster, Assistant Passenger Traffic Manager, Eastern Lines, C.P.R., Montreal, born at Kingston, N.B., Sept. 30, 1871.

J. P. Ferguson, representing Galena Signal Oil Co., Ottawa, Ont., born at Drummondville, Que., Sept. 12, 1856.

R. S. Gosset, Auditor of Disbursements, Canadian Northern Ry., Toronto, born there, Sept. 28, 1879.

John Gray, General Agent, G.T.R., Toronto, born at River Beaudette, Que., Sept. 28, 1863.

D. W. Hatch, Travelling Agent, Atchison, Topeka and Santa Fe Ry., Montreal, born at Bedford, Que., Sept. 1, 1841.

W. R. Howard, Chief Dispatcher and Trainmaster, District 1, Atlantic Division,

C.P.R., Brownville Jct., Me., born at St. Andrews, N.B., Sept. 14, 1871.

E. Humphreys, Fuel Agent, Alberta Division, C.P.R., Calgary, born at Hull, Eng., Sept. 24, 1869.

J. E. Hutcheson, General Manager, Montreal Tramways Co., Montreal, born at Brockville, Ont., Sept. 15, 1858.

C. B. King, Manager, London St. Ry., London, Ont., and President, Canadian Electric Railway Association, born at Galena, Ind., Sept. 12, 1871.

S. King, ex Superintendent, Canadian Car and Foundry Co., Montreal, Director, National Steel Car Co., Ltd., Hamilton, Ont.,

The War

THE shutting off of imports from Continental Europe into Canada, due to the War, gives many home industries an unexampled opportunity for immense and immediate development.

Canada will prosper at the expense of Continental Europe. This is not a time in Canada for repining on the part of the business man. We must be careful, even frugal, but we must also be bold.

Victory is to him who has courage.

now of London, Ont., born at Thetford, Norfolk, England, Sept. 12, 1853.

E. L. Landorff, Resident Engineer, C. P.R., Brandon, Man., born at Copenhagen, Denmark, Sept. 9, 1888.

R. E. Larmour, Assistant General Freight Agent, C.P.R., Vancouver, born at Brantford, Ont., Sept. 26, 1868.

H. D. Lumsden, M. Can. Soc. C. E., engineering department, C.P.R., Toronto, born at Belhaire, Scotland, Sept. 7, 1844.

G. S. Lytle, Car Service Agent, Manitoba Division, C.P.R., Winnipeg, born at Denison, Ia., Sept. 23, 1878.

F. J. Mahon, Superintendent Telegraphs, Eastern Division, C.P.R., Montreal, born there, Sept. 18, 1865.

R. E. Merkley, Trainmaster, District 3, Saskatchewan Division, C.P.R., Saskatoon, born at Ottawa, Sept. 3, 1882.

J. F. Mundle, City Freight Agent, C.P.R., Montreal, born at Prescott, Ont., Sept. 20, 1857.

M. B. Murphy, Superintendent, District 2, Central Division, Canadian Northern Ry., Winnipeg, born at Napa, Cal., Sept. 11, 1866.

K. F. Nystrom, chief draughtsman, Car Department, G.T.R., Montreal, born in Sweden, Sept. 2, 1881.

J. Paul, District Freight Agent, Canadian Northern Ry., Winnipeg, born in Euphrasia tp., Grey Co., Ont., Sept. 13, 1858.

W. J. Pickrell, Superintendent, District 2, Atlantic Division, C.P.R., Arrostook Jct., N.B., born at London, Ont., Sept. 15, 1880.

C. S. Richardson, District Freight Agent, C.P.R., Buffalo, N.Y., born at New York City, Sept. 26, 1870.

W. D. Robb, Superintendent of Motive Power, G.T.R., Montreal, born at Longueuil, Que., Sept. 21, 1857.

F. W. Sterling, District Freight Agent, C.P.R., Nelson, B.C., born at Thornbury, Ont., Sept. 14, 1881.

E. W. Taylor, General Freight Agent, Reid Newfoundland Co., St. John's Nfld., born at Carbonear, Nfld., Sept. 8, 1870.

F. G. Wood, Commercial Agent, Canadian Northern Ry., St. Louis, Mo., born at Toronto, Sept. 15, 1890.

H. A. Young, Ontario Storage and Cartage, Ltd., Toronto, born at Brooklyn, N.Y., Sept. 1, 1864.

R. N. Young, Superintendent of Telegraphs, Alberta Division, C.P.R., Calgary, born at Cayuga, Ont., Sept. 4, 1870.

Master Car and Locomotive Painters' Association of the United States and Canada.—The 45th annual convention will be held at Nashville, Tenn., Sept. 8 to 11. The subjects to be covered are, the finishing of steel passenger car equipment, rust inhibitive paints, interior finish of passenger cars, varnish for locomotive tenders, classification of passenger car paint repairs, apprenticeship in the paint shop, sand blast vs. commercial paint removers, blister proof finish for heated locomotive parts, and standard freight car lettering.

Additional Terminal Elevator at Fort William.—It was announced recently that the N. M. Patterson Elevator Co. has decided to build the first unit of 100,000 bush. capacity, of what will eventually be a 1,000,000 bush. terminal elevator, at Fort William, without delay. It will be equipped with the most modern cleaning and drying machinery. The site has been secured about 888 ft. below the G. T. Pacific Ry. swing bridge over the Kaministiquia River, and the contract has been awarded to S. J. McQueen, Fort William.

Railway Lands Patented.—During June, letters patent were issued in respect of railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres.
Alberta Central Ry.	6.17
Calgary and Edmonton Ry.	1,603.00
Canadian Northern Ry.	1,476.45
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co.	3,511.59

Total 6,597.21

Steam Railway Fatalities.—During June, 17 employees were killed in the course of their work in connection with the operation of steam railways throughout the Dominion. The fatalities were caused, as follows:—Run over by locomotives, cars or trains 10, head on collisions 5, derailment of locomotive 1 and by falling from a train 1.

Many cases of bad clinkering and honeycombing have been eliminated by giving the locomotive ashpan more opening. Where brick arches are used, no trouble is experienced. Boilers in poor condition, with leaky flues, full of scale, or with rough projections, are more liable to honeycomb than if in good condition.

Experiments with locomotives have shown that after a relation of 0.14 sq. ft. of air inlet per sq. ft. of grate was reached, no further decrease of draught occurred when the air inlets were increased; and when the air inlets were less than 0.11 sq. ft. per sq. ft. of grate, the draught necessary to supply air increased very rapidly.

One pound of coal used in a freight locomotive will provide enough energy to carry one ton 15 or 16 miles, and in a modern train it will be fed the boiler every 52 ft. of distance travelled.