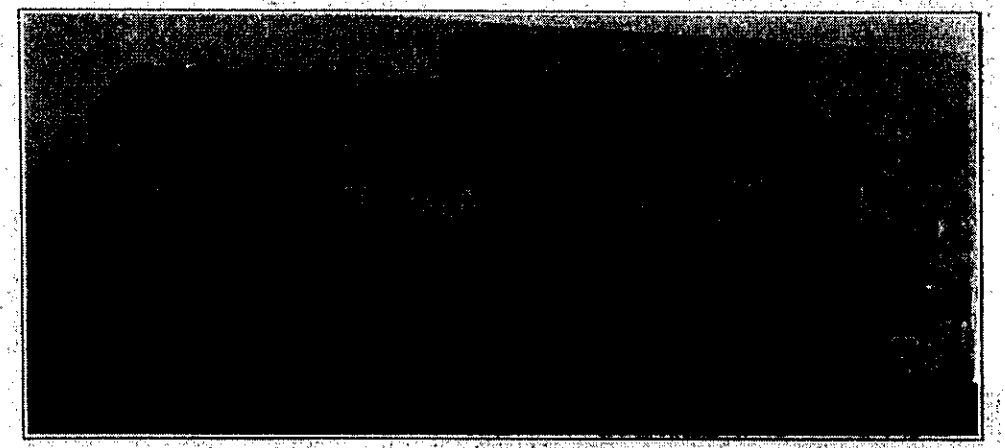
CANADIAN PACIFIC EQUIPMENT

Canadian Pacific Railway Fire Fighting Cars.

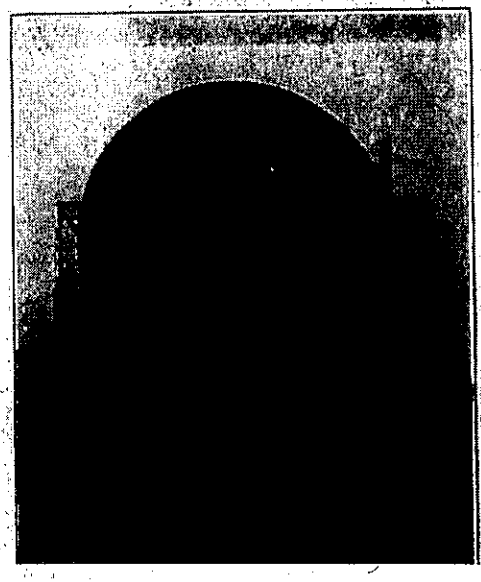
A novel departure has been made by the C.P.R. in the construction of a couple of tank cars specially equipped for fire fighting. In general, they are of the standard M.C.B. tank car construction. Two cars have been built, as they are intended to operate in pairs. Apart from the end arrangement of the auxiliary equipment, they are identical in construction. Each car carries a tank of 8,428 imp. galls. capacity. On the end of one car there is a 7 x 10 x 10 in. duplex fire pump, using steam from the locomotive boiler. The corresponding end of the other car has a rack construction on which can be carried 6,000 ft. of 2½ in. fire hose.

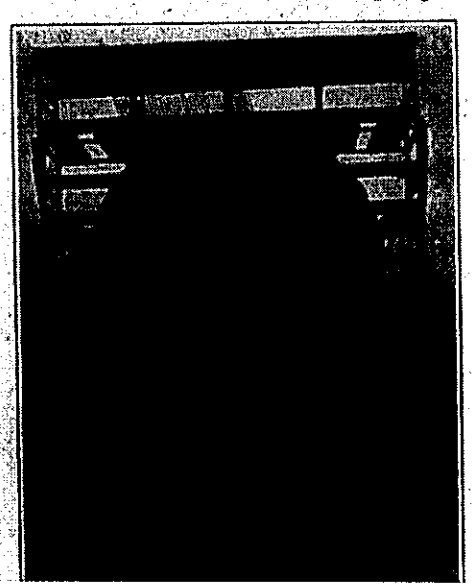
The tanks are 92½ ins. diameter by 28 ft. long, made from 5|16 in. plate. Over the centre is the usual dome, 44 ins. diameter, inside of which is a 23 in. opening, a light metal ladder being provided inside for entry purposes. Inside the dome, there is a valve wheel, connected with a 6 in. valve in the bottom of the tank, with the usual outlet below. The centre sill of the car is built up of two 15 in. 55 lb. channels, these comprising contains a 6 in. T connection to the pumps. In both cars the connecting length has a globe valve.

The hose racks on the rack car are made up of 1 in. extra heavy piping, made into sectional openings, 27 ins. square. There are 16 of these openings, 40 ins.



C.P.R. Fire Fighting Tank Car, With Duplex Pump.





dry Co., and are in service in the operating department, being located at Brownville Jct., Me.

Customs Regulations on the Importation of Foreign Repair Parts.—The importance of conforming to Customs regulations when shipping repair parts from U.S. lines into Canada is a most vital question with the store and car departments of the dif-

the absence of properly vouched for inferent Canadian lines, as, on account of voices accompanying the parts, they are usually held pending correspondence from the Canadian consignee to advise the U.S. consignor of the difficulty. In the meantime, the car is held on the bad order track, where it is not only freed from the per diem regulations, but also blocks up necessary home repairs. This subject has been treated in a thorough manner by L. E. Thomson, Storekeeper, Canadian Northern Ontario Ry., in a paper at the Railway Storekeepers' Association Convention in Chicago recently. In his paper, all the considerations involved in the resulting delay are dwelt upon, and the necessary procedure in forwarding the parts so as to avoid this delay is explained. It is to be hoped that the presentation of the paper will have the desired effect, as a proper following of the Customs regulations will mean a considerably increased repair track capacity for Canadian lines.

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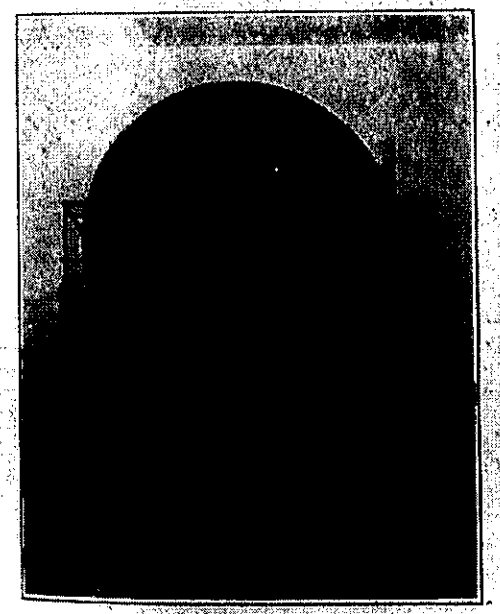
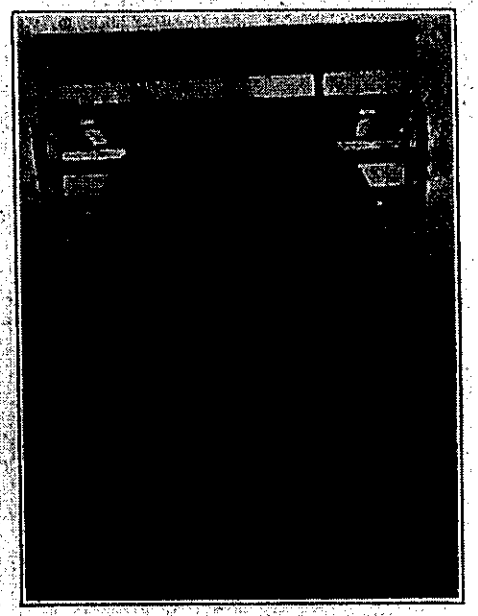


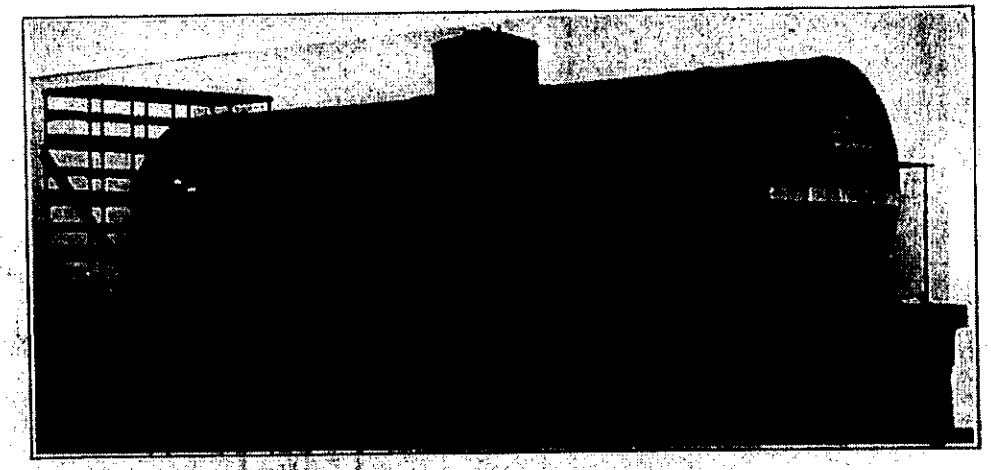
Pump on Fire Fighting Tank Car.



Hose Rack on Fire Fighting Tank Car.

the whole longitudinal sill construction of the car, except for the reinforcements for the body bolsters over the truck. Draft gear is attached to the ends, housed in a pressed steel end sill. The car is designed for a weight capacity of 100,000 lbs., standard 50 ton trucks are employed

The tanks are placed a little further to one end than is usual, the platform space thus provided at the open end being used in the one case for the pump, and in the other for the hose racks. In both tanks, the suction is through a 6 in. pipe near the bottom and to one side of the centre line, forming a U bend, the open end of which drops down to within an inch of the bottom of the tank. The suction pipe, from the point it leaves the tank, passes along the side of the tank on the deck, to the open platform ends. In the rack, this terminates in a capped end, to which can be connected a short section of 6 in. rubber hose, supplied with the car, for connecting up with the pump car. In the pump car the connections are somewhat similar, with a capped end pipe, but this short length of pipe from the tank to the capped end



C.P.R. Fire Fighting Tank Car, With Hose Rack.

deep, in which the rolls of hose are placed on edge, in rolls up to 27 ins. diameter. The accommodation is for 6,000 ft., which can be connected up to the pump.

The two cars were built to the C.P.R. designs by the American Car and Foun-

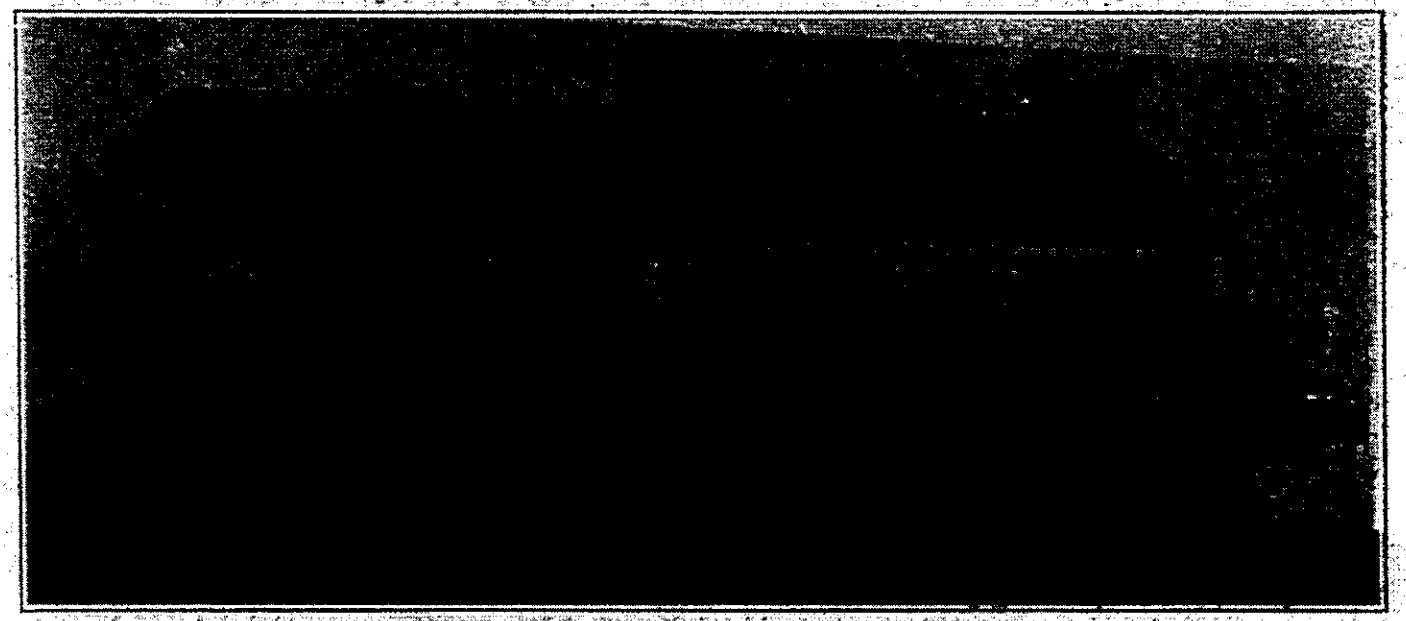
C.P.R. Fire Fighting Tank Car, With Duplex Pump.

the absence of properly vouched for inferent Canadian lines, as, on account of voices accompanying the parts, they are usually held pending correspondence from the Canadian consignee to advise the U.S. consignor of the difficulty. In the meantime, the car is held on the bad order track, where it is not only freed from the per diem regulations, but also blocks up necessary home repairs. This subject has been treated in a thorough manner by L. E. Thomson, Storekeeper, Canadian Northern Ontario Ry., in a paper at the Railway Storekeepers' Association Convention in Chicago recently. In his paper, all the considerations involved in the resulting delay are dwelt upon, and the necessary procedure in forwarding the parts so as to avoid this delay is explained. It is to be hoped that the presentation of the paper will have the desired effect, as a proper following of the Customs regulations will mean a considerably increased repair track capacity for Canadian lines.

Sale of Return Tickets on Trains.—The Board of Railway Commissioners has asked railway companies to state whether their conductors have instructions to sell round trip tickets to passengers boarding trains at flag stations, or at stations where no agents are on duty immediately before the departure of trains therefrom.

August 1913

There are 16 of these openings, 40 ins. the store and car departments of the dif-



C.P.R. Fire Fighting Tank Car, With Duplex Pump.

August 1913

rocks can be creditably compared in hardness with the diked Trenton limestone now being excavated in the Mount Royal tunnel. However, as the rock encountered in the Loetschberg tunnel was sufficiently hard to require the use of air drills, that progress of 1,013 ft. will undoubtedly stand as a world's record for a long time, and certainly stands as a monument to good tools, good management, and good men.

The rock in the Dorchester St. heading of the Mount Royal tunnel, while not so hard as it is back of the mountain, is a very good Trenton limestone, which makes an excellent concrete stone, being sharp and not too high in lime. All stone coming from the tunnel is being crushed and what is not used by the company is being sold for massive and reinforced concrete, principally in Montreal.

The break ups, as they are called, where the full sized tunnel is excavated, are opened at as many intervals as desired. This excavation is extremely cheap and rapid. In one break up about 200 cu. yds. are now being excavated per day with two shifts of drillers. Jumbo timbers are framed into the headings at the break ups, so that the heading traffic is never interfered with, and the bulk of the break up muck drops into the cars by gravity. It is to permit the use of a fairly broad gauge double track at these break ups that the Mount Royal headings are driven 8 to 10 ft. high by 12 ft. wide.

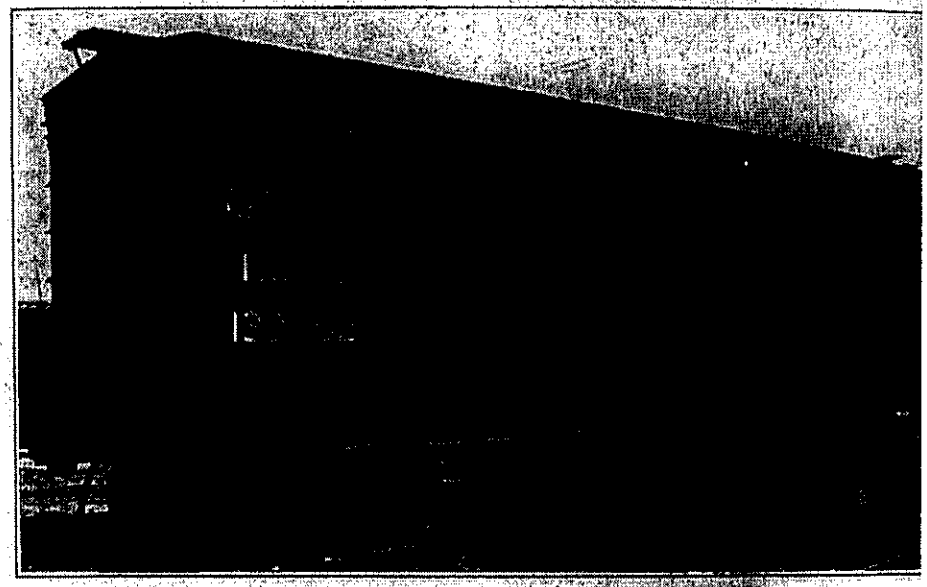
While so large a cross-section very materially reduces the progress of the headings driven each month, it very greatly increases the economy of further excavation and construction. Back of the mountain, where the very hard rock is encountered and the drill carriage is in use, the heading averages about 10 x 12.5 ft., and the May progress was 510 ft. in 27 working days. At the city end, where the record was made, it was permitted to reduce this to about 8 x 12 ft. in order to assist the progress. It is expected to remove most of the benches below the level of the jumbo timbers with a steam shovel.

consists of R. Byers, General Superintendent, West; E. Duffy, General Superintendent, East; W. C. Lancaster, Electrical and Mechanical Engineer; H. T. Fisher, Tunnel Engineer; H. D. Robinson, Engineer of Design, and J. C. K. Stuart, First Assistant Engineer. writer is managing engineer for Mac zie, Mann & Co., Ltd., and Chief gineer of the Canadian Northern M real Tunnel & Terminal Company, Lt Engineering Record.

Hopper Bottom Grain and Coal Car Built for Canadian Pac Railway.

Ever since grain has been handled in box cars, the construction of a suitable grain door has been one of the most difficult problems in car design, and up till recently it has remained the one unfinished part of the car. A satisfactory grain door is one that will hold grain as securely as any other part of the car body, is always there when required, will not be demolished in unloading, does not obstruct or decrease lading room when not in use, and is of reasonable first cost and low cost of maintenance. A grain car so constructed that

out and as railroading as a whol becoming more efficient and ref there will be a demand for a higher gree of efficiency in the handling grain. Working to this end, the C dian Pacific Ry. has built 200 Bu hopper bottom grain cars, shown in accompanying illustrations.



Hopper Bottom Grain and Coal Car for C.P.R.

There are several new features i hopper door. The hinge is made terlocking the edge of the hopper and floor, making a continuous which, instead of weakening the strengthens it the same as would th

ling traffic and mechanical departments of

stipulations that have influenced its adoption are discussed in detail, particularly as

ling of trains than is prevalent today. The steel underframe car was built mainly to

First Inside Sheathed Steel Frame Box Car for Canadian Pacific Railways

the railways are enumerated as follows: Now

tare weight. Clean inside finish. Essen-

viewed by the Canadian Pacific Ry. The

information and

secure a stronger centre construction for

December 1913

Seventy-Five Ton Pit Car for Canadian Pacific Railway.

The accompanying illustrations show a 75 ton pit car, which the C. P. R. has had built recently to handle heavy structural and machinery parts. The Canadian General Electric Co. had requisitioned the C.P.R. for special cars to transport electrical machinery, such as transformers, etc., designs for which were prepared. Before actual work on these cars had commenced, the St. Lawrence Bridge Co. also applied to the C.P.R. for some heavy cars to handle the heavy steel members to be used in the Quebec bridge, all of which are being fabricated in the bridge company's shops at Lachine, Que., and must be transported to Quebec. The initial designs for the heavy cars were therefore modified so as to produce a car that would meet the requirements of both services, and are now such that they may be employed in ordinary heavy traffic when the special requirements for which they have been built are met. An order of six has been completed.

The bridge requirements called for a car that would carry members weighing 130,000 lbs., and 16 ft. high. The clearance limit made necessary the pit construction. Following are the principal dimensions:—

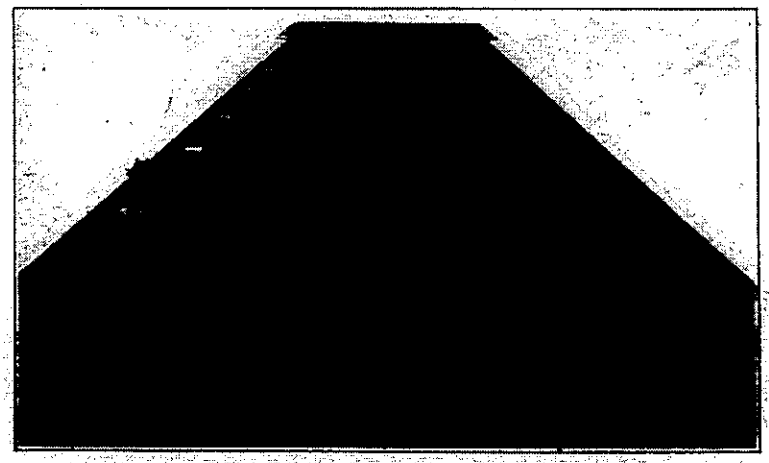
Length	35¾ ft.
Width	10 ft.
Top of rail to top of deck	4 ft. 2¼ ins.
Truck centres	26½ ft.
Truck wheel base	5½ ft.
Length of pit	18 ft. 1 in.
Width of pit	6 ft.
Wheels	33 in. rolled steel
Journals	6 by 11 ins.
Draft gear	Twin M.C.B. class G springs
Load limit	150,000 lbs.
Average tare weight	48,000 lbs.

The pit cover is made in two pieces, and when the open pit is required, the two parts of the cover are carried on the ends of the car, where they are held in place by stakes and large steel angles rivetted to the deck. The covers are composed of heavy wooden decking attached to steel I beams, the ends of which are equipped with cast steel lugs, resting on the top of longitudinal sills. The entire top of the car is covered with heavy wooden decking, and is provided with holes for bolting down blocking for the loads. When the pit covers are in place, the car presents the appearance on top of the ordinary flat car.

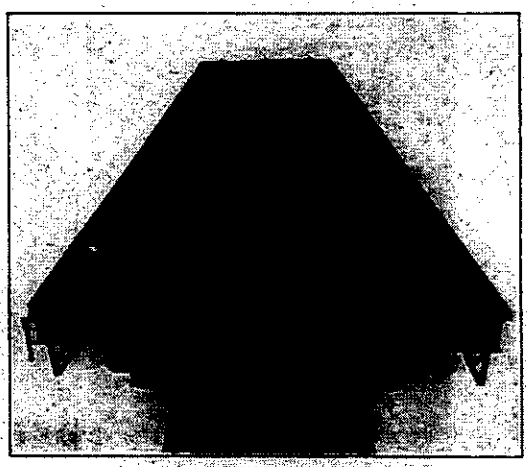
Each car has two complete sets of brakes, one for each truck. They are of the Canadian Westinghouse Co.'s schedule K.D. 312. The cars were designed in the office of R. W. Burnett, General Master Car Builder, to whom we are indebted for the data on which the foregoing information was compiled, and they were built by the Canadian Car and Foundry Co.

We are officially advised that the four 75 ton pit cars, which the Intercolonial Railway has ordered from the Eastern Car Co., Ltd., will be exactly the same as the C.P.R. cars above described.

C.P.R. 75 Ton Pit Car for Carrying Heavy Bridge Members Up to 16 ft. Deep.



Open Pit in C.P.R. 75 Ton Pit Car.



C.P.R. Pit Car as Ordinary Flat Car.

Work Train Service at a Gravel Pit.

By T. Hickey, Roadmaster, Michigan Central Road, St. Thomas, Ont.

The cars and appliances necessary for proposed work should be switched on some track together, where they can be readily picked up by the work train crew at the time ordered. Cars are liable to get blocked in large yards, causing serious delay both to the train crew and to laborers expected to do the work. I arrange, when necessary, for an auxiliary tank to be attached to the work train locomotive, to serve as an additional water supply. I find this to be a saving in time, that may otherwise mean considerable delay to the work. All work should be done under the direction of an assistant roadmaster, or an experienced foreman, understanding fully the work to be done.

The proper handling of the work and work trains depends primarily upon the amount and kind of work to be done, as well as the length of haul of material and other general conditions. I have a gravel pit, 2½ miles from the main track, from which a great deal of material has been taken for the past 12 years, and more particularly during the past 4 years. The haul on this material was 46 miles, over 15 miles of single and 30 miles of double track.

A certain class of locomotives suitable for the work are requested and also certain enginemen and train conductors who have been tried before in this service. A water plant is provided at the pit sufficient to supply the steam shovel and pit locomotive, and occasionally one of the road locomotives, when necessary. A telegraph office is also located in the pit, from which all conductors leaving the pit receive train orders. A car repairer is stationed here to do the necessary oiling of cars and make other light repairs. One locomotive and crew is stationed in the pit with the steam shovel and two crews are assigned to hauling, each train containing 50 cars. The shovel loads 150 cars each day, or about 2,250 cu. yds. There is scarcely any failure in making this daily average, and each hauling crew makes 135 miles a day, or a trip and a half.

The time that the first train leaves the pit each morning, as well as the place of unloading, is well understood, not only by the train crews, but by all others interested in the work, with the result that each crew makes its trips regularly. The pit conductor is in full charge of the work in the pit. He makes a daily inspection of material and supplies on hand and orders additions in sufficient time to prevent the supply becoming entirely exhausted.—Railway Age Gazette.

Life of Locomotives and Passenger Cars.—It is estimated by the Pennsylvania Rd. that passenger cars and locomotives have a useful life of 20 years, at the end of which time their value as scrap will be only about 20% of their original cost. An allowance of 3% for depreciation and renewal is made for freight cars and of 4% for locomotives and passenger cars. Because of the absence of sufficiently lengthy experience in steel cars, an allowance of 4% is made for depreciation and renewal.

The Royal Canadian Humane Association's medal was presented recently to L. B. O. Wakelam, a C.P.R. employe, for saving two lives at a railway crossing accident at Port Burwell, Ont., in January last.

Military Commissary Kitchen Cars on the C.P.R.

In the transporting of troops from various points to the concentration camp at Valcartier, Que., a big problem was presented, for while the transportation itself was a considerable task, the problem of feeding the men through the journey presented greater difficulties, as none of the existing railway equipment could be directly used for the service, the dining car service being entirely inadequate and unsuited to the requirements. The C.P.R. solved the difficulty by converting 12 standard 60 ft. baggage cars into commissary kitchen cars. This conversion was made at the company's Angus shops, Montreal, to the designs of W. A. Cooper, Manager, Sleeping, Dining and Parlor Cars and News Service, and under his personal supervision. The layout of the cars is shown herewith.

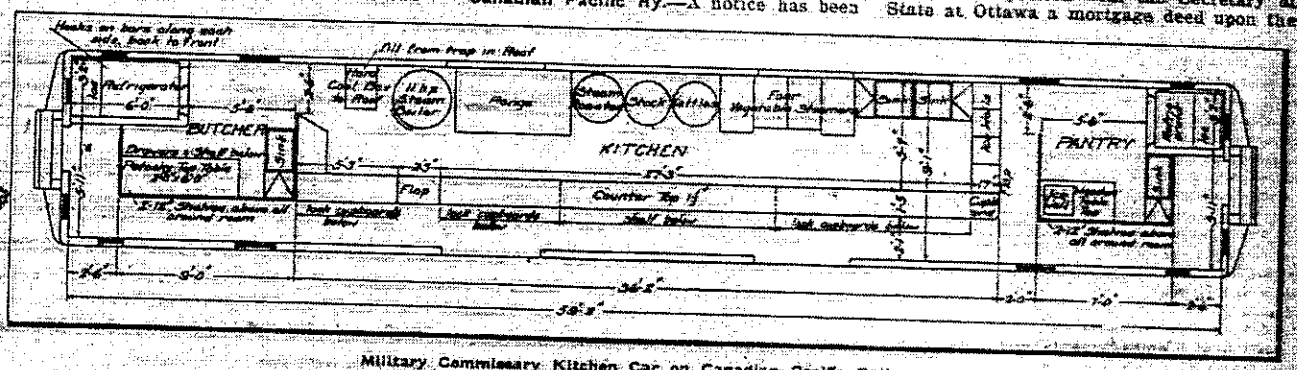
Essentially, each of the cars is a well appointed hotel kitchen on wheels, and comprises three main sections, kitchen proper, butcher shop and pantry. The interior corridor arrangement resembles the company's compartment cars, as from each end the passage leads from the central entranceway and along a 2 ft. 1 in. corridor on one side of the car. The two baggage door openings on the corridor side are fitted with permanent screens for ventilation purposes, and the similar openings on the other side have been blocked up.

The butcher shop and pantry are in partitioned off rooms, while between the two is the main part of the kitchen, 36 ft. 2 ins. long. Along the corridor side of this kitchen is a full length counter, with two flap entrances, with cupboards and shelves below, through the full length. Along the blind wall of the car is arranged the cooking apparatus, consisting of steam roaster, 2 stock kettles, 4 vegetable steamers, a large range, and other facilities. These are nearly midway in the kitchen proper, with two sinks at one end and an 11 h.p. vertical steam boiler, with adjacent hard coal bin, at the other end, for supplying steam to the cookers.

The butcher shop contains a large table, 2 by 6 ft., with a sink in one corner, the rear corner being occupied by a 6 by 2 ft. 2 in. refrigerator, wherein the meat is kept fresh. The pantry at the other end of the car contains a table, sink and a smaller refrigerator. It has two 12 in. shelves all round the room.

The agateware plates used are suspended from the roof, and the shelves and cupboards under the counter are used for storing plates, saucers and dishes of various kinds, and also the knives, forks and spoons. The urns for soup and coffee carrying cans are suspended directly over the counter. Vegetables are stored in boxes underneath the car. In addition to an overhead storage of water, there are suspended beneath the car three tanks of water, giving a total capacity of 1,490 imp. gals. All the sinks have a supply of both hot and cold water. The windows and doors are equipped with screens, to keep out insect pests.

For serving the meals the orderlies from each company file in from one end of the car, line up in front of the counter, are allotted the portions for their men, and pass out of the other end as rapidly as served. The operation of the car is said to be most satisfactory, exceeding the expectations, the capacity of each car being 1,000 meals, three times a day. The crew consists of 12 men in charge of a steward, one of the twelve being a boiler man, and the others cooks.



Military Commissary Kitchen Car on Canadian Pacific Railway.

Railway Finance, Meetings, Etc.

Buffalo and Lake Huron Ry.—The available balance for the half year ended June 30, including the amount brought forward from the previous half year, is £15,020, after providing for the interest on the first and second mortgage bonds. From this amount the usual dividend of 5s. 3d. a share, amounting to £13,784, will be paid, leaving a balance of £1,235 to be carried forward to the current half year's account. This railway is operated under lease by the G.T.R.

Canadian Pacific Ry.—A notice has been issued, advising those who hold shares, which may still be registered in the names of German or Austrian subjects, to communicate with the company's London office with regard to the payment of dividends. This is following on the British Government's instructions that dividends which may be payable to German or Austrian subjects shall be withheld by the various companies concerned, and not paid to the holders of such shares, nor to their order.

Central Ry. of Canada.—There has been deposited with the Secretary of State at Ottawa a mortgage deed upon the company's undertaking and assets, made with the City Safe Deposit and Agency Co., London, Eng.

Dominion Atlantic Ry.—A special meeting of shareholders will be held in Montreal, Oct. 6, to consider the advisability of leasing the Intercolonial Ry.'s Windsor branch, and to approve and confirm the lease. The Windsor branch has been for years operated by the D.A. Ry. under an agreement with the Department of Railways on a percentage basis.

Grand Trunk Pacific Ry.—There has been deposited with the Secretary of State at Ottawa a mortgage deed made between the company, the Grand Trunk Co., and the Crown securing the issue of the company's bonds which have been guaranteed by the Dominion Government, under the provisions of the Act of Parliament of last session.

Grand Trunk Ry.—In accordance with the Grand Trunk Act of 1914, the company's accounts are now being made up annually to Dec. 31 in each year, instead of June annually, but the directors are empowered to declare an interim dividend for the first half year, as they may deem advisable, thus following the practice of other railways. They have accordingly declared the full dividend on the 4% guaranteed stock for the half year ended June 30, payable Oct. 31.

Klondike Mines Ry.—The officers and directors for the current year, elected at the recent annual meeting at Ottawa, are: President, H. B. McGiverin; Vice President, J. P. Ebbs; Secretary, A. Haydon; other directors, J. Latta and C. G. Keksewich.

Lake Erie and Northern Ry.—A meeting of shareholders will be held in Montreal, Oct. 5, to approve resolutions cancelling a mortgage of $500,000, securing second mortgage bonds, and to issue other bonds to secure further construction, to be secured by a new mortgage. This is necessary owing to the leasing of the line to the C.P.R. for 999 years at a rental equal to the interest on bonds issued or to be issued by the company. The shareholders will also be asked to approve of the lease, which will also be approved at the annual meeting of C.P.R. shareholders to be held Oct. 7.

Montreal Central Terminal Co.—There has been deposited with the Secretary of State at Ottawa a mortgage deed upon the company's undertaking and assets, made with the City Safe Deposit and Agency Co., London, Eng.

Temiscouata Ry.—Net earnings for July, $6,208.

Toronto Terminals Ry. Co.—The annual meeting was held at Montreal, Sept. 3. Following are the directors for the current year: H. G. Kelley, President; D. McNicoll, Vice President; J. W. Leonard, Managing Director; Sir Thos. G. Shaughnessy, E. L. Chamberlin, J. E. Dalrymple. The other officers are: H. Philips, Secretary; H. E. Suckling, Treasurer; W. H. Ardley, Auditor; W. C. Chisholm, General Solicitor; J. R. W. Ambrose, Chief Engineer.

White Pass and Yukon Route.—Gross earnings from Jan. 1 to Aug. 31, $1,073,362, against $602,816 for same period 1913.

Railway Lands Patented.—Letters Patent were issued during July, covering Dominion lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres
Calgary and Edmonton Ry.	[illegible]
Canadian Northern Ry.	[illegible]
Canadian Pacific Ry. grants	[illegible]
Canadian Pacific Ry. resulted and station grounds	[illegible]
Total	[illegible]

October 1914

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First Inside Sheathed Steel Frame Box Car for Canadian Pacific Railway

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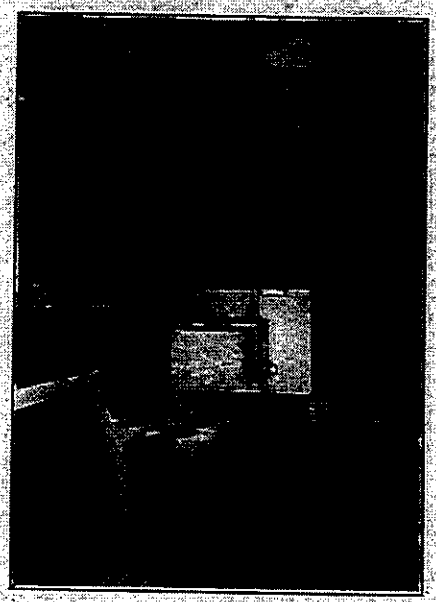
New Standard Dining Cars, Canadian Pacific Railway.

A departure in dining car design has been made in the latest ones for this service built by the C. P. R. It has been realized for some time that the principal weak point in dining car service lay in the kitchen, where the cooks, through lack of space, were unable to fill orders as promptly as passengers frequently considered necessary. Before the order could be prepared, in the event of the dining car being well filled, the accumulation of orders unavoidably caused a delay in the preparation of the late order. From the company's standpoint, this involved a direct loss, as on the heavy runs the number of passengers desiring to avail themselves of dining car accommodation is enough to fill a car at several sittings. As nearly all desire their meals within a short period of time, the problem resolved itself, from the company's viewpoint, in either providing additional dining cars to handle the extra passengers quickly, or else so arranging the facilities that one car would meet all requirements in the limited meal period. As the kitchen had proved itself the weak point, it was to it that attention was concentrated in an endeavor to increase the car capacity.

A step in the right direction was made in dining cars some time ago, and has been quite generally adopted, viz., the utilization of one of the vestibule ends for interior purposes, leaving only one end with a vestibule, the body at the other end extending out to the buffer. In the C. P. R.'s latest design, a further step has been made in the elimination of the vestibule at the other end also, as it was realized that the dining car, being always used in conjunction with other cars, required no side vestibule entrance for passengers, and that for the employes, the side provision door would meet all requirements.

In the new cars, the dining room section, and the lockers at the end of the car are left as in the former standard design, the additional space available at the other end of the car by the elimination of the second vestibule, being added to the kitchen, leaving room for an additional range, with accommodation for increased kitchen employes. The increased kitchen accommodation is shown in one of the accompanying illustrations, looking from the car end towards the dining section. The length of the range in the foreground has been increased by the length of the standard vestibule, the car length over buffers being as before. The kitchen proper is now 14¼ ft. long, sink section, 6 ft. 5 ins., and pantry 6¾ ft.

From the diaphragm end of the kitchen, there is a low door into the passage for an emergency exit for the dining car employes. In place of the usual provision door in the blind vestibule of the usual dining car, there is a side door near the diaphragm end of the kitchen, as shown in the view of the car exterior, which is very similar, only narrower, to that of a baggage car. It is entered by a metal ladder.



Enlarged Kitchen of Canadian Pacific Railway Dining Cars.

The main part of the car is the same as in former designs, containing 6 tables for 4 and 6 for 2, giving a seating capacity of 36. With the increased kitchen accommodation, the meal serving capacity has been considerably increased, as the operation of the cars has already proved.

Canadian Pacific Railway Dining Car Without Vestibules.

Calendars for 1914 have been received from American Steel Foundries, Chicago, and Taylor and Arnold, Ltd., railway supplies, Montreal.

Interchange of Traffic With Canadian Northern Railway at Toronto.

Announcement was made in Canadian Railway and Marine World for February that there is to be a complete interchange of passenger traffic at Toronto between the Grand Trunk and Canadian Pacific on the one hand, and the Canadian Northern Eastern Lines on the other. For a number of years there have been restrictions in this interchange at Toronto that have prevented passengers coming from points on other lines travelling by Toronto, to a number of points reached by the Canadian Northern Ontario, because tickets could not be issued through. By the arrangement now entered into, passengers will be able to obtain through tickets and the benefit of the through fares to all points reached on Canadian Northern Eastern Lines.

To the East, passengers will be able to go by Toronto through to the Rideau Lakes, Ottawa, Montreal and on to Quebec and the Lake St. John country north of Quebec. North of Toronto they may go to Sparrow Lake, and to the Muskoka Lakes, where the Canadian Northern passes through the centre of the district with wharf side stations on Bala Park Island and on the shores of Lake Joseph where they have a marine railway at Lake Joseph station for the handling of motor craft direct from the cars into the water. The line runs into Parry Sound and follows the Hinterland to the Georgian Bay, crossing Bolger Lake, the Maganetewan, Pickerel and French Rivers to Sudbury. At Capreol the line from Toronto is joined by the one from Montreal now nearing completion; the steel is laid all the way to Port Arthur. At present the line is only being operated to Ruel; but when opened through shortly, it will link the eastern and western lines of the system.

Minneapolis Railway Stations.—Several plans have been prepared for a municipal railway terminal at Minneapolis, Minn., which all railways entering the city would use. Three separate stations are now in use. Three years ago the State Legislature passed a law authorizing cities of the first class, of which Minneapolis is the only one, to build union stations and to force all railways to use it. A year ago the law was amended to cover a defect, and last November the City Council ordered the city engineer to prepare plans. By the law the city can condemn property, relocate stations, design and force railways to use the municipal terminal at a rental charge which will pay interest on the bonds and create a sinking fund. The city will submit the plan to the Railway Warehouse Commission, from which body the railways may appeal to the courts in case of disagreement. The nearly completed union station for the Chicago & Northwestern Ry. and the Hill roads may or may not be utilized in the new scheme.

The Great Railway Tunnels of the World.—The world's greatest tunnels are in Europe. The greatest is the Simplon, which is 12¼ miles long. Two, the St. Gothard and Lotschberg, are over 9 1-3 miles long. The Mont Cenis is a little over 7 miles long. The Arlberg, in Austria, is 6¼ miles long. There are four tunnels between five and six miles long, five between four and five miles long, seven between three and four miles, and 16 tunnels that are over two miles long. The longest tunnel in the United States, the Hoosac, is four and one third miles long. The C.P.R. tunnel at Rogers Pass, B.C., now under construction, will be 5 miles long, and the Canadian Northern Ry. Mount Royal tunnel will be 3 1-3 miles.

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