

CANADIAN PIGGYBACK OPERATIONS

Canada	14,028,369	13,977,167	12,361,846
The products handled in July, in the three years, were as follows, in tons:—			
Agricultural	3,408,841	2,512,299	1,770,520
Animal	129,083	175,255	181,980
Mine	3,004,519	4,965,427	4,862,125
Forest	1,967,573	2,067,570	1,669,536
Manufactures and miscellaneous	3,817,351	4,126,912	3,877,685
Grand total	14,028,369	13,977,167	12,361,846

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the goods delivered to the door of the consignee before noon.

"The service is speeded by the elimination of handling in freight sheds, damage is expected to be minimized, and the convenience of pickup and overnight delivery will be increased.

"Overseeing today's operations at the Place Viger terminal, Montreal depot for less than carload freight shipments, were L. G. Savage, General Agent at Place Viger, and M. R. Martin, Superintendent of C.P.R. Montreal Terminals Division. Entrusted with the job of backing the trailers onto the 53 ft. flat cars was veteran truck driver John Barrette, whose job it also was to drive the familiar green C.P.R. freight trucks through Montreal today as they picked up their shipments.

"Similar truck-train operations were being carried on today in Toronto where shippers will also be able to take advantage of the new freight service between the two cities. If the Montreal-Toronto operations prove successful, it is expected that wider application of the new service will be made."

So far (to December 24), the C.P.R. service has been given with eight trailers, carrying capacity loads in both directions, entailing operation of two flat cars in the overnight fast merchandise trains, each way, each night.

On the Canadian National, the new service was inaugurated December 12, following official inspection of the equipment and facilities by Donald Gordon, Chairman and President, S. F. Dingle, Vice President, Operation, and John Pullen, Vice President, Traffic.

Railways Begin Trailer-Flat Car Service

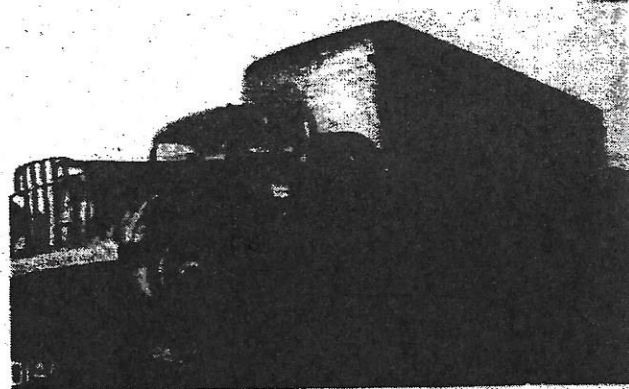
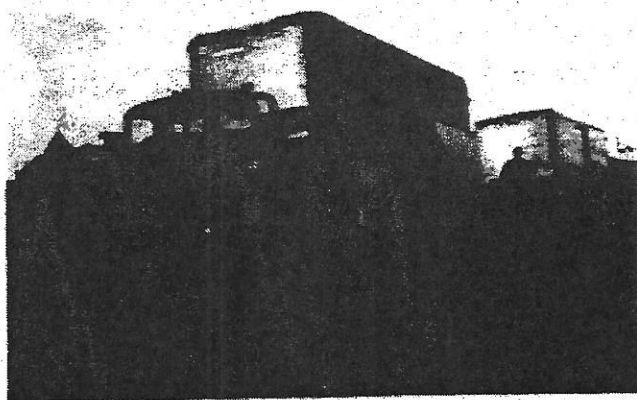
Both transcontinental railways have placed in operation, between Montreal and Toronto, the freight service wherein highway semi-trailers are given intercity rail movement on flat cars, in accordance with the plans described in our December issue.

The plans developed by the managements of the two transcontinental railways for the inauguration of a new type of freight service between Montreal and Toronto, wherein loaded semi-trailers are hauled by highway tractor to the freight yards, the semi-trailers are backed on flat cars and secured thereon, the flat cars are hauled by rail to destination, and the semi-trailers are then unloaded from the flat cars and hauled by highway tractor to the consignee's premises, were described in our December issue, pg. 670, and the statements issued by the Canadian National and Canadian Pacific managements in regard to the matter were reproduced. The C.P.R. statement noted that the service was beginning December 1, and that the semi-trailers, each 20 ft. long, would be loaded two on a flat car; it was also mentioned that the trailers would be equipped with both side and end doors, to facilitate handling on city

streets. The C.N.R. statement noted that six 50-ton steel flat cars were being specially equipped for the new service, and that they would have roller bearings and automatic brake cylinder slack adjusters, and would also be equipped with rolled steel wheels. Each car would carry two trailers. It was indicated that twelve 24-ft. trailers would be provided, each with 12-ton capacity. The expectation was expressed that the new service would speed the movement of merchandise traffic, reduce handling at railway freight warehouses, and curtail loss and damage claims.

The C.P.R. new service began December 1, with the loading of two trailers on a flat car at the Place Viger freight terminal in Montreal. A statement issued by the C.P.R. in regard to the commencement of the service said:—

"The whole operation is designed to speed up the railway's fast freight



Handling Semi-Trailers in the Canadian Pacific By Trailer-on-Flat Car Montreal-Toronto Freight Service. In the view at the left, L. G. Savage, General Agent, Place Viger freight terminal, Montreal, directs driver John Barrette as he backs the trailer up the ramp and on to the flat car. In the view at the right, Mr. Barrette watches as freight handlers Beachamp and Gifford secure the trailer on to the flat car for movement to Toronto by fast overnight freight train.

connections (both imports and in-transit freight) in tons, July, 1952, 1951 and 1950:—

Province	July, 1952	July, 1951	July, 1950
Newfoundland	200,646	129,061	129,311
Prince Edward Island	9,861	22,329	8,467
Nova Scotia	853,431	828,523	864,037
New Brunswick	351,938	435,332	310,321
Quebec	2,807,723	2,324,181	2,640,922
Ontario	3,690,342	6,124,304	5,248,720
Manitoba	728,378	700,962	590,658
Saskatchewan	1,386,844	1,024,128	731,731
Alberta	1,254,186	860,102	897,568
British Columbia	944,806	1,026,204	931,938
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Flat Car for Heavy Loads

Advice from Westinghouse Electric Corp., Pittsburgh, is that it has acquired a specially-built flat car of great strength and fitted with four four-wheel trucks (16 wheels in all) for use in shipping extremely heavy units, chiefly large generators from East Pittsburgh. The car, of about usual length, has a load limit of 493,000 lb., and is equipped with extra heavy journals, enabling transportation of all but the very largest generators as completely assembled units. Weight of car is about 106,000 lb. The car's first job was handling of a 163-ton stator (the stationary part of a turbine generator) to the power station of Duquesne Light Co. at Elrama, Pa.

service between Montreal and Toronto by the utilization of the truck trailers and the flat cars. Under the new system shipments are picked up throughout the city by the trucks which are then loaded onto flat cars by means of a ramp.

Tractors back the trailers onto the flat cars and are then detached. Two trailers are loaded on one flat car.

Today's shipment will be sped to Toronto by a fast overnight merchandise freight train, where other tractors will be attached to the trailers and the goods delivered to the door of the consignee before noon.

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streets. The C.N.R. statement noted that six 50-ton steel flat cars were being specially equipped for the new service, and that they would have roller bearings and automatic brake cylinder slack adjusters, and would also be equipped with rolled steel wheels. Each car would carry two trailers. It was indicated that twelve 24-ft. trailers would be provided, each with 12-ton capacity. The expectation was expressed that the new service would speed the movement of merchandise traffic, reduce handling at railway freight warehouses, and curtail loss and damage claims.

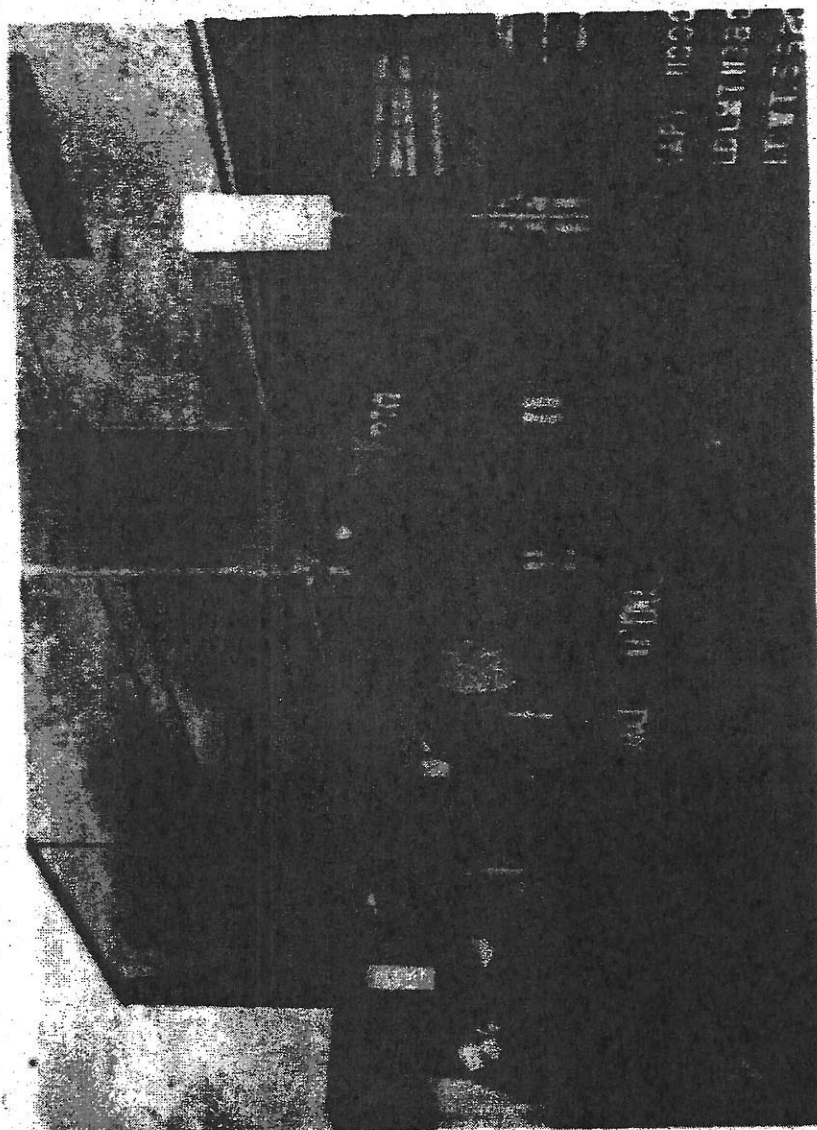
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"J. W. McCaig, retiring president of the Canadian Automotive Transportation Association, stated during the Association's recent annual meeting in Montreal: 'This is the kind of enterprise and competition we understand and appreciate. We'll do our best to meet it by providing better truck service, but we certainly have no intention of opposing the railways' move."

"He denied earlier reports that the truckers' group would oppose the railway plan, and said he hoped the railways' move would mark the opening of a new era in rail-truck relations. 'For years,' he said, 'the railways have advocated restriction of the trucking industry as a means of increasing their own business. Our reply has been that the railways would do better to concentrate on improving their own service, taking advantage of modern developments. The trailer-on-flat-car service is an indication that they are now thinking on those lines.'"

"Mr. McCaig said he wished to make it clear that his industry would continue to oppose rail entry into the general field of highway trucking as a matter of public interest. 'Our feeling in this matter is that the transportation needs of Canada can best be met by free competition,' he said. 'We believe that large scale entry of the railways into trucking would be a move against this principle and towards a transport monopoly.' However, he added, the latest rail-truck plan is something quite different from this, hence the absence of any objection from the truckers' association."



Canadian National Ry. Officers Note Inauguration of Trailer-on-Flat Car Service
From left to right are John Pullen, Vice President, Traffic; S. F. Dingle, Vice President, Operation, and Donald Gordon, Chairman and President

A statement issued by the C.N.R. in regard to commencement of the service mentioned the flat car features referred to above, and added that they have been so equipped that the trailers can be securely placed to prevent shifting in transit. Three-foot, hinged type, steel counterbalanced aprons at one end of each car bridge the ramps and the cars. Twelve 20-ft. trailers, equipped with special devices, are being used in the initial service.

Reaction of Inter-city Truckers
From the Canadian Automotive Transportation Association, representative of the highway intercity truck transport service throughout Canada, we have obtained the following statement:—

"Trucking industry leaders have indicated interest but not opposition to the trailers-on-flat-car service which the two major railroads are operating between Toronto and Montreal."

Canadian Transportation

Rail Flat Car Movement of Highway Trailers

Over the past 14 years, The New York, New Haven and Hartford Rd. Co. has developed, in New England, a type of traffic in which loaded highway trailers are given rail movement on flat cars. The business has increased to the point where more than 3,000 trailers per month are handled. Last year 200 flat cars of special design and construction were added to the road's equipment for the handling of this type of traffic. To cope with the growing demand for TOFC service, orders were recently placed for 200 additional flat cars of the same design.

In an address presented at last year's annual meeting of the American Society of Mechanical Engineers, by G. L. Goebel, Mechanical Engineer, of the New York, New Haven and Hartford Rd. Co., progress made by that company in development of an unusual type of freight traffic, over the past 14 years, was described thoroughly, and accompanying illustrations, prepared from photographs supplied by the author, provide particulars of the way in which the traffic, furnishing an outstanding example of co-ordination between highway and railway transportation, is handled. The traffic has now been developed to the point at which more than 700 trailers per week are handled on railway flat cars, the trailers, or more properly semi-trailers, being handled by highway tractor from the original freight loading point to the railway yard, and then being loaded on flat cars for shipment by rail to the point of destination, where the trailers are taken

off the flat cars and given highway movement by tractor to the final point of freight unloading.

In handling this traffic, the railroad offers its facilities to any highway truck operation firm legally entitled to use the highways, and to any manufacturer, wholesaler or other shipping concern operating its own tractors and semi-trailer equipment, but all highway transport concerns participating in the co-ordinated highway-rail movement must meet all of the requirements imposed by the Interstate Commerce Commission, and must also comply with the railroad's regulations covering dimensions and mechanical condition of the trailer equipment offered for movement. At the present time, a number of different highway operators are taking advantage of the co-ordinated highway-rail service.

It must be evident that to provide an efficient co-ordinated service of this type, a very complete organization, with adequate and smoothly-

operating transfer facilities at loading and unloading points, is required, and this the railroad has provided. The equipment employed in loading the trailers on the flat cars at shipping points, and in unloading them at points of destination, effects prompt handling of the trailers. Specially designed flat cars, to the number of 200, are part of the railroad's rolling stock, provided with the handling of the trailer traffic in view, and the methods used at transfer points are such that the time consumed in loading and unloading is kept to a minimum. An additional 200 similar flat cars were recently ordered.

The service is so organized as to provide overnight movement of the trailers between New York and Boston, New York and Providence, New York and Springfield, and Boston and New Haven. In order to ensure that the freight trains (known as "Trailiners") handling the flat cars with the trailers aboard leave on time, a time



Street Trailer Terminal, New York, on the New York, New Haven and Hartford

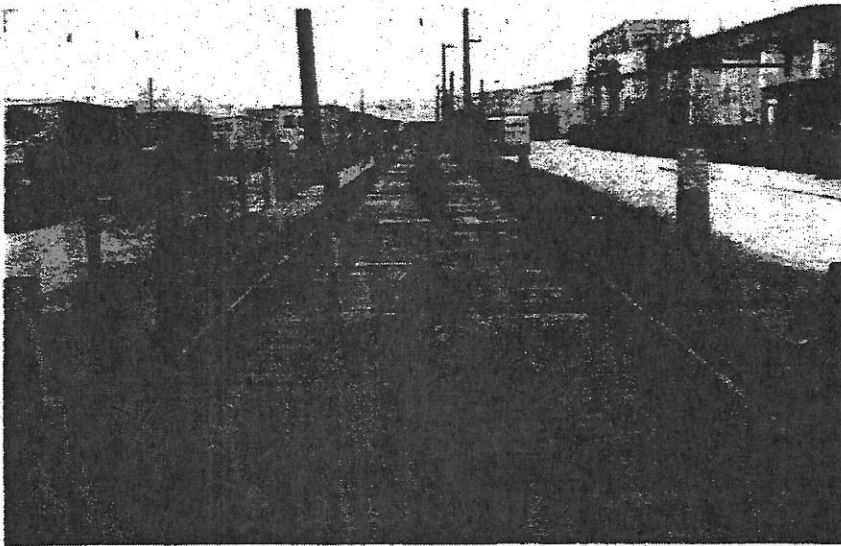
limit for receipt of trailers in the railway yard is set, and rigidly adhered to. As in the case at many freight stations, most of the trailers arrive at the railway yard late in the day, and not long before the scheduled time of train departure. With the loading time thus restricted, the transfer operations must proceed smoothly and without interruption. It has been found, employing the new specially-designed flat cars, that the loading time is shortened greatly if only one trailer is loaded on each car; therefore these cars have been designed to

removal of the trailer from the flat car, requires between four and five minutes on the average. While the highway truck operator, or firm employing its own tractor-trailer equipment, hauls the trailers from point of freight loading to the railway yard, these privately-owned tractors are not allowed to participate in the actual work of transferring the trailers to the decks of the flat cars. When the tractor which has hauled the trailer to the yard arrives there, it leaves the trailer at a designated parking space, where the trailer is then picked up by

which the trailer must pass to attain the height of the flat car deck. While the cost of furnishing this extra low reverse gear exceeds \$600 for each tractor so equipped, experience has shown that the expense has been more than justified, for the reason that in addition to securing greater facility in handling the loaded trailers, tractor maintenance expenses have been reduced in great measure.

Each loading track in the railroad yard, with capacity up to 12 cars, has at its stub end a concrete ramp, with 10% grade which extends for about 35 ft., ending with a five-foot level portion at flat car deck height, adjoining the end of the track. All of the flat cars on one track are loaded serially from this one ramp. Alongside each loading track is a platform or catwalk 3½ ft. high and three ft. wide, fitted with a railing carrying sealed beam lights. This platform is of great assistance to the men employed in loading and unloading the trailers, particularly during the winter. At convenient points along the platform, there are bins provided for storage of materials and repair parts required in the work. Adequate shelter for employees is provided. The yard track area has black top surfacing, and elevated floodlights, in addition to those on the catwalk rails, provide adequate yard lighting. At the Harlem River (New York) yard, a 50 ft. tractor-trailer platform weighing scale of automatic type, with capacity up to 50 tons, has been installed, to permit quick automatic weighing of vehicles as the combination moves into the yard.

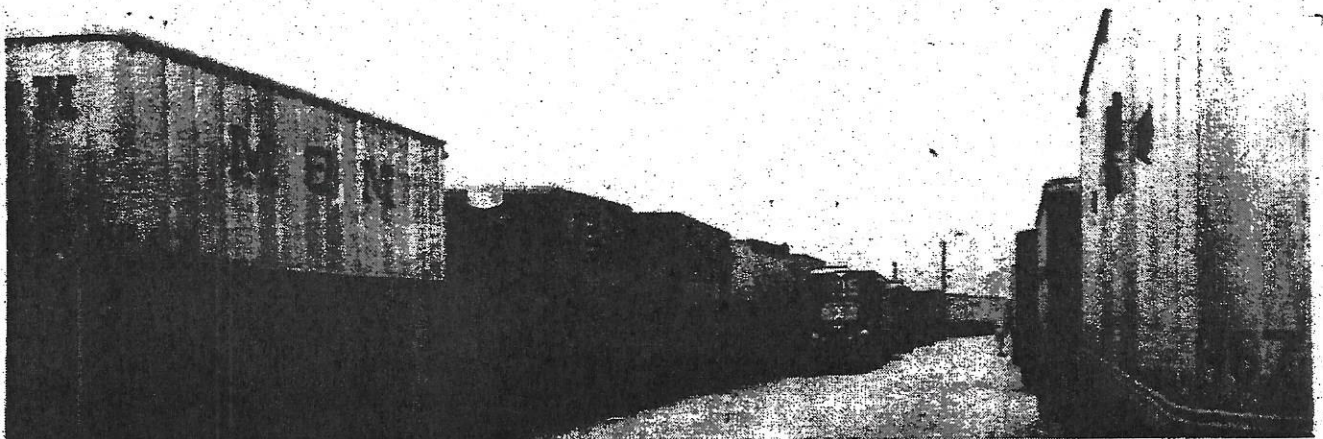
When a semi-trailer is being loaded on a car, being backed up the ramp by the tractor with special low gear, the auxiliary wheels at the front of the trailer are lowered just enough to provide contact with the car floor, and in this manner these trailer wheels are made to afford stabilization laterally, thus assisting in this function the jacks which are employed to support



A String of Flat Cars Ready to Receive Trailers

transport but one trailer to a flat car. On the average, with the equipment and procedure as developed to date, it takes between six and seven minutes to load a trailer on a flat car, this covering the time required to get the trailer into its place on the car and to fasten it securely. The reverse operation at point of destination, viz., the

a special tractor owned by a highway subsidiary of the railroad, the New England Transportation Co. These special tractors, employed to do the actual work of loading trailers on the flat cars, are equipped with an extra low reverse gear, provided to afford the additional power required to back the loaded trailer up the incline over



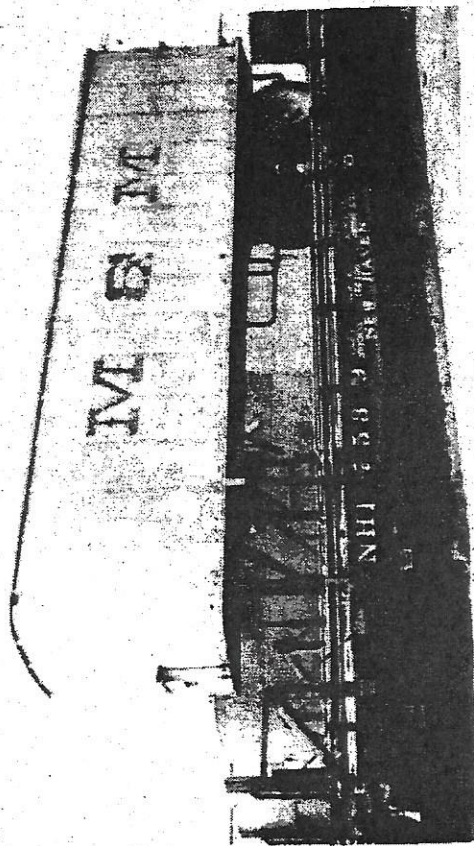
the front end of the trailer, as shown in accompanying illustrations. To save time, and the expense of an additional man to perform the work of adjusting the height of the trailer auxiliary wheels manually, the special tractors used in loading the trailers are equipped with a device, operated by hydraulic pressure, which is operated by controls inside the tractor cab, and which is employed to lift the end of the trailer without adjusting its auxiliary wheels, when backed into its position on the car, and then lower the front of it to the desired height in relation to the jacks. While this equipment costs about \$1,500 for each tractor, it was a good investment in view of the fact that the expense of an extra employee is avoided.

The time limit for receipt of loaded trailers at the various terminals is, as stated, adhered to closely, and once the trains containing the loaded flat cars are made up, they are given high speed road movement, these freight trains maintaining average speed approaching 50 m.p.h. At Boston, the trailers are loaded from 3.00 p.m. to 9.30 p.m., but the yard is closed to acceptance of further trailers at 7.00 p.m., if they are for an early evening train, and at 9.00 p.m. if for a later evening train, the early train leaving at 8.00 p.m. and the later one at 10 p.m. At Providence, the loading period is from 6.00 p.m. to 10.00 p.m., with time limit of 9.00 p.m. for receiving trailers for the early train and 10.00 p.m. for a later train, the train departure times being 10.50 p.m. and 11.24 p.m. Similarly, exact schedules are in effect at the yards at Springfield, New Haven and New York. As concerns handling of the inbound trailers, all trains make their 207-mile runs between terminals in six hours and twenty minutes, and arrivals are in the early morning hours. Cars are placed on the unloading tracks within 20 minutes after arrival of trains.

The system of using only one ramp, at the stub end of a track, for the serial loading of trailers on a number of flat cars on the track, was first

begun experimentally, this method having been adopted because of the low first cost, not only as concerns terminal equipment, but also as concerns the equipment necessary to be carried on the cars for securing the trailers. Also, the whole co-ordinated highway-railroad service was decidedly experimental in nature, and it was only the part of prudence to embark upon it in limited and conservative manner. As this end loading system

To maintain a close check on possible damage claims and to secure strict enforcement of the regulations covering the condition of trailers, a daily report covering trailer defects noted is issued by each terminal; several copies of this report are made, each terminal furnishing one copy to each of the other terminals, with one going to the railroad's manager of TOFC. All trailers are rigidly inspected by a railroad mechanical department representative, to make sure that all are in



A Trailer Loaded and Secured on Flat Car

demonstrated itself as fully satisfactory, it has been retained.

As concerns the railroad's liability for the freight entrusted to it under this co-ordinated handling method, the tariff regulations provide that the railroad is not responsible for the lading itself, its responsibility being limited only to the condition of the trailer, and the only claims entertained being for damage to the trailer. Claims have been very few, in relation to the volume of traffic handled. The railroad accepts a trailer for rail movement only with doors locked and sealed by the shipper of the freight.

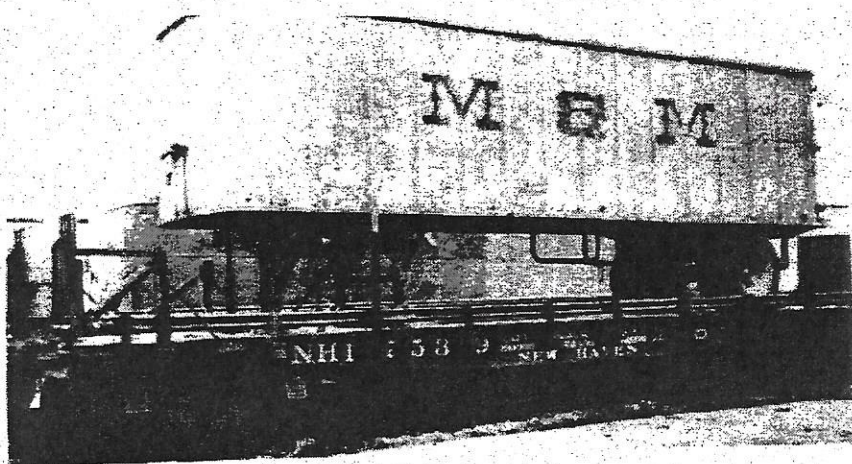
safe condition for rail movement. To ensure uniformity to greatest possible extent, and in the interests of safety, the railroad regulations covering dimensions and conditions of trailers have been printed in a booklet, and freight shippers must observe the regulations to ensure that their trailers will be accepted for rail movement.

The railroad's charges for the rail transportation of the trailers is based on trailer length, at a designated maximum weight limit for trailer and contents; if that limit is exceeded, the charge is at a fixed rate per 100 lbs. Trailers handled empty on a return

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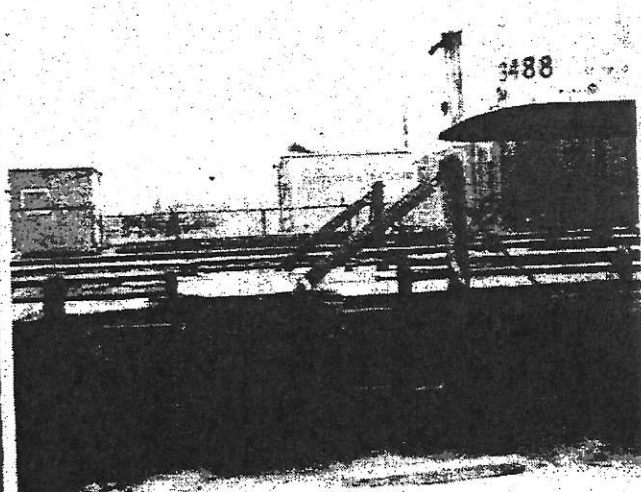
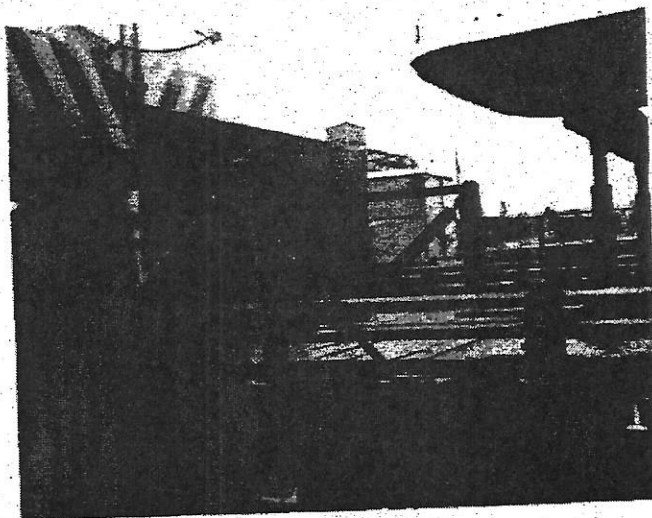
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Detail of Aprons Between Cars, Jacks, Etc., Employed in Loading and Securing Trailers.

relative to the railway at the outset, the practice of the greater part of the rail proved popular with shippers and the results were in favor of the railway. However, the railway was unable to hold this sufficient volume to warrentain the minds of the railway extending the trial period to October, 1933, when the rates were withdrawn and the railway returned to regular service. From the truckman's standpoint for the transport of loaded trailers were considered too high. An insufficient inducement in the way of rates to enforce them to the element of complete flexibility and responsibility to no fixed rates, especially as regards demurrage, to cause them eagerly to return to the rail operations.

Other railways have inaugurated trailer-on-flat car service. The New York, New Haven & Hartford being an outstanding example. That railway inaugurated the service in 1937 whereby highway trailers were transported by rail in connection between New York and Boston, Mass., on specially designated cars in regularly scheduled freight trains. Thus the congested area between the two commercial centers, while the trailers themselves were available for direct origin and destination. To make the operation possible, loading ramps were located at New York and Boston. The service is available to all highway trailers operating between the two cities. The tariff for the railway between designated tracks at New York terminals was quoted at \$16.25 for space on a loaded semi-trailer, one-half a charge of \$16.25 for space on an empty trailer previously recorded the loaded movement. A maximum charge of \$65.00 was levied on the day consignment did not exceed one loaded semi-trailer of \$32.50 when the consignment did not exceed one empty semi-trailer. These rates applied only to shipments weighing, with lading, up to 10,000 pounds; on shipments of two loaded trailers made on the same day, the weight of the two loaded trailers was required not to exceed 20,000 pounds. A rate of 15 cents per hundred pounds was levied on loadings in excess of these standards. Current rates between New York and Boston, and New York and New Haven, and New York and Springfield, in connection with the original New York

the flat cars and hauled by highway tractor to the warehouse or plant of the consignee. This type of freight business has been developed on the New Haven to the point where more than 4,000 semi-trailers were handled during the month of October, 1952, and not long ago the railway installed 200 specially designed and built cars for handling the semi-trailers and an additional 200 cars are at present on order. When delivery of this order is consummated the total fleet will number about 630 flat cars. Numbered among other railways offering similar service are several prominent Midwestern carriers, and here also the service is reported to be successful.

The two transcontinental Canadian railways inaugurated trailer-on-flat-car service between Montreal and Toronto, the Canadian Pacific on December 1, 1952 and the Canadian National on December 12, 1952. Both railways, of course, improved their service by eliminating the time consumed in handling shipments through freight houses, by minimizing damage to shipments, and by accelerating the service through assigning the cars to fast overnight trains between the two Canadian cities. The statement relative to the service issued by the Canadian Pacific contains the following information: "The trailers, after being loaded, will be moved on to the flat cars by tractors and secured for the trip to their destination. Ramps and loading platforms will be used for the loading of the trailers, and at destination a tractor will pull the trailers from the flat cars and immediately handle them to the consignee. To secure the trailers on flat cars, jacks are used to raise the weight of the trailer from its own tires and spring suspension. Steel blocks steady the wheels at front and rear. Anchor chains hold the trailer in place. Steel guard rails on the sides of the flat car guide the truck while being moved into place on the flat cars by the tractors. Folding steel aprons allow the trailer to be driven over more than one flat car to its assigned location. Each flat car carries two 20-foot trailer units and the capacity of the two units practically equals that of an ordinary box car. These trailers are equipped with both side and end doors to facilitate handling on city streets." A similar statement issued by the Canadian National Railway contains the following information: "The inauguration of the new freight service follows studies by company officers of highway-rail transport systems in the United States and Europe. The initial operation will be between Montreal and Toronto. Its development will be