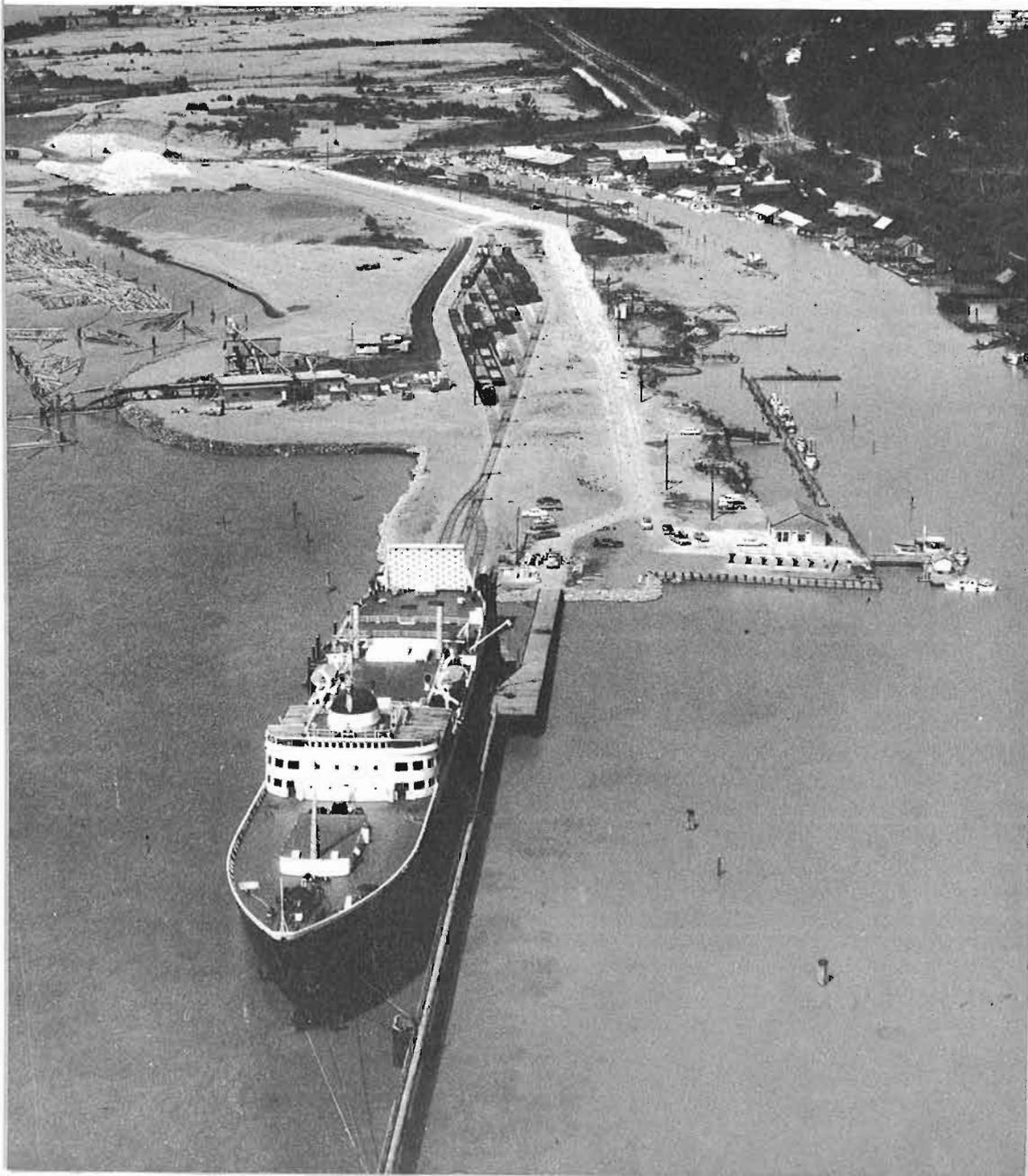


Canadian Rail



NO. 210
MAY 1969



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BRITISH COLUMBIA'S RAIL WATER SERVICES IN 1968

DAVID L. DAVIES

(Photographs by the Author unless otherwise noted).

British Columbia, Canada's most westerly Province, is unusually blessed with many thousands of miles of coast line. Because of this, and the many navigable lakes in the Province, water routes have been always a convenient and essential part of British Columbia's transportation system. The C.P.R. trans-Canada railway came to Vancouver in 1887 and ever since, there have been rail links throughout the Province carried across water by rail-ferries. It is a happy thought that the importance of these links is growing, not diminishing, as we approach 1987.

The history of rail-water services in British Columbia is fascinating, but it is not the purpose of this article to deal with it. The article attempts to describe the current scene in 1968.

Despite the fact that much of the water-borne traffic on British Columbia's waterways consists of private automobiles and commercial trucks, in terms of actual tonnage, the lion's share is held by the railways. It has been estimated that 100,000 tons of freight are moved every week in railway cars, across coastal and interior waters in British Columbia.

Geographically and by category, British Columbia's rail-barge services, like Gaul, can be divided into three parts. The first and most important segment is the service in southwest B.C. in a triangular area with Vancouver, Victoria and Powell River, at the points. This region generates about 70% of freight car water movements. Second to this traffic pattern are the straits and ocean rail services, south to the State of Washington, in the United States and north to the State of Alaska, from the centres of Vancouver and Victoria. This category accounts for 20% of the freight car movements, by water. The last grouping comprises the interior lake routes and is concentrated in the southeastern part of the Province, literally in the shadows of the mountain ranges. This region contributes rather less than 10% of the freight car movements over water.

The total traffic flow by rail-water routes is considerable and is estimated to be about 2,000 rail-car movements per week, in any one direction. But of this total between one-third and one-half are empty freight cars, being forwarded for loading. In general, the traffic distribution reflects the general classes of

rail freight carried in or through British Columbia. Forest products chemicals and petroleum products would logically be of greatest importance, followed by a whole range of other products listed in some detail in Appendix I.

Five railways of importance operate within the boundaries of the Province. C. P. Rail, (formerly Canadian Pacific Railway), heads the list with 1,967 miles operated, followed by Canadian National Railways with 1,534 route miles. Pacific Great Eastern Railway has 865 miles of line, while B.C. Hydro Railway lists 98 miles of operation. From the neighbouring State of Washington, the Great Northern Railway has 33 miles of line within the Province. CP Rail and CNR have marine departments and operate rail-barge services but the tendency during the last two years has been to subcontract many of these services to commercial barge companies. The PGE and GNR work with other commercial barge companies to establish through routes and competitive rates, but the railways, themselves, have not become directly involved in this water-borne traffic. The B.C. Hydro Railway has no water connections and thus neither requires nor provides any rail-water services.

There are eight companies offering rail-water services within, into, through or out of the Province. They are listed below in alphabetical order and have been given rough makings to indicate comparative activity.

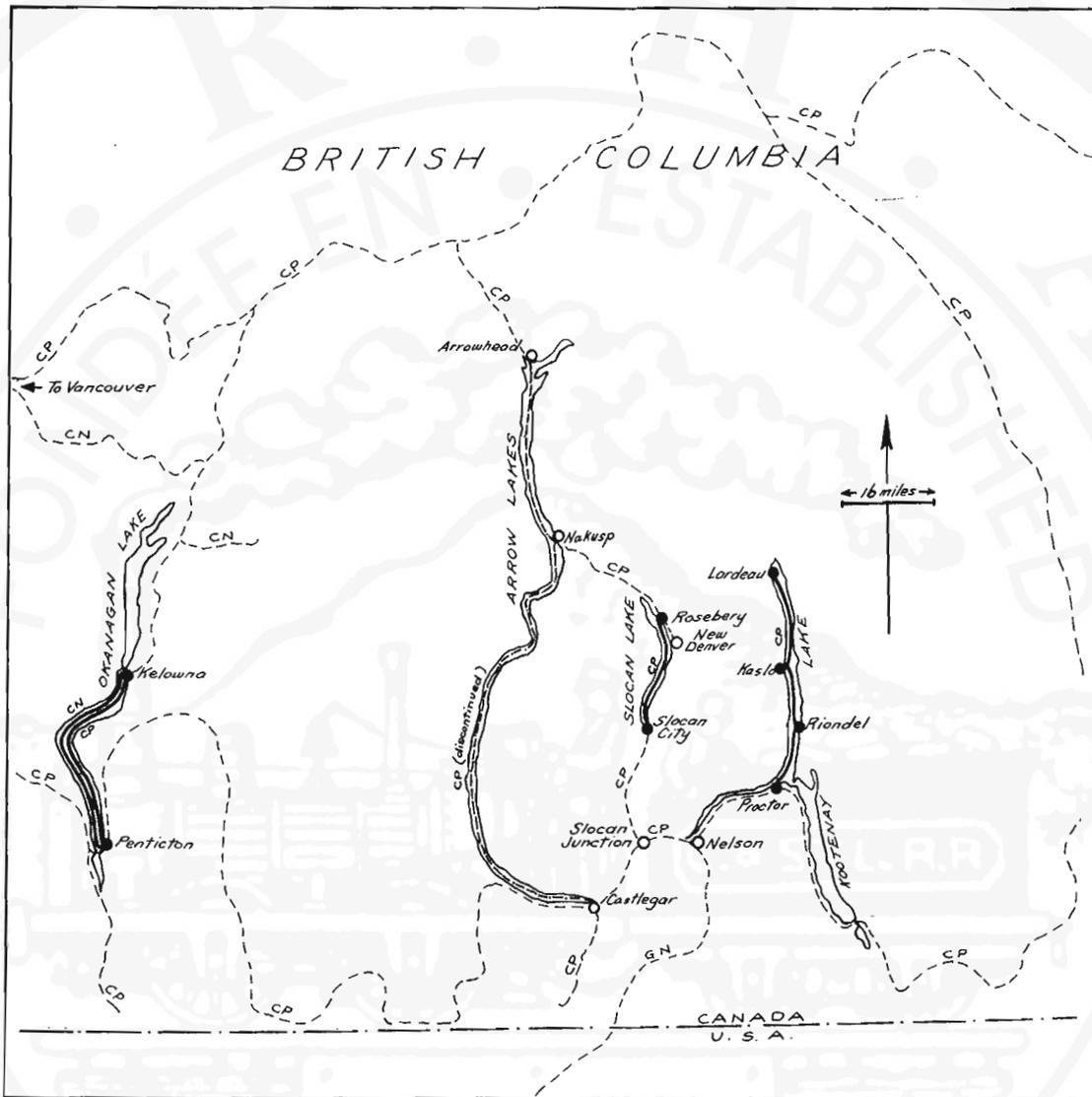
<u>Company</u>	<u>Ranking as</u>	
	<u>Cars carried</u>	<u>Vessel mileage</u>
Alaska Trainship Corporation	7th	2nd
Canadian National Railways	5	7
CP Rail	3	6
Foss Launch & Tug Company	6	5
Gulf of Georgia Towing Company	8	8
Island Tug & Barge Limited	4	1
Kingcome Navigation Limited	2	4
F.M. Yorke & Son Limited	1	3

Six of these eight carriers are Canadian companies. The other two - Alaska Trainship Corporation and Foss Launch & Tug Company, - are United States companies, with headquarters in Seattle, Washington. Excluding the two Canadian transcontinental railway companies, all of the other Canadian firms have their head offices in Vancouver.

F.M. Yorke & Son Limited is the only one of the eight carriers that specializes particularly in the movement of railway freight cars on barges. It has a contract to provide daily services from the mainland to Vancouver Island for both CN and CP. It also undertakes the movement of railway cars for three coastal pulp mills several shingle mills and some petroleum refineries. Furthermore, it specializes in the movement of heavy or oversized loads, carried on railway cars. This Company, first formed in the 1920's, now hauls about one-quarter of all the rail-water traffic in British Columbia.

Island Tug & Barge Limited is the largest tug-towing and barge and scow-owning firm in British Columbia and the hauling of rail-barges is only a small portion of its business. The princi-





MAP NOTE: Routes having a daily to weekly service shown by heavy lines.



pal portion of its rail-barge work is a daily run from the Pacific Great Eastern at North Vancouver, B.C. to Seattle, Washington, where connection is made with three - (and thereby all) U.S. interstate railroads. It also maintains a biweekly service between Victoria on Vancouver Island and Seattle. Island Tug & Barge moves about one-sixth of all rail-water traffic in British Columbia's coastal waters.

The "new-comer" to the rail-barge operation in the Straits of Georgia, is Kingcome Navigation Limited, which is the coastal shipping subsidiary of MacMillan Bloedel Limited. This latter company is the largest producer of wood products in Canada. Kingcome

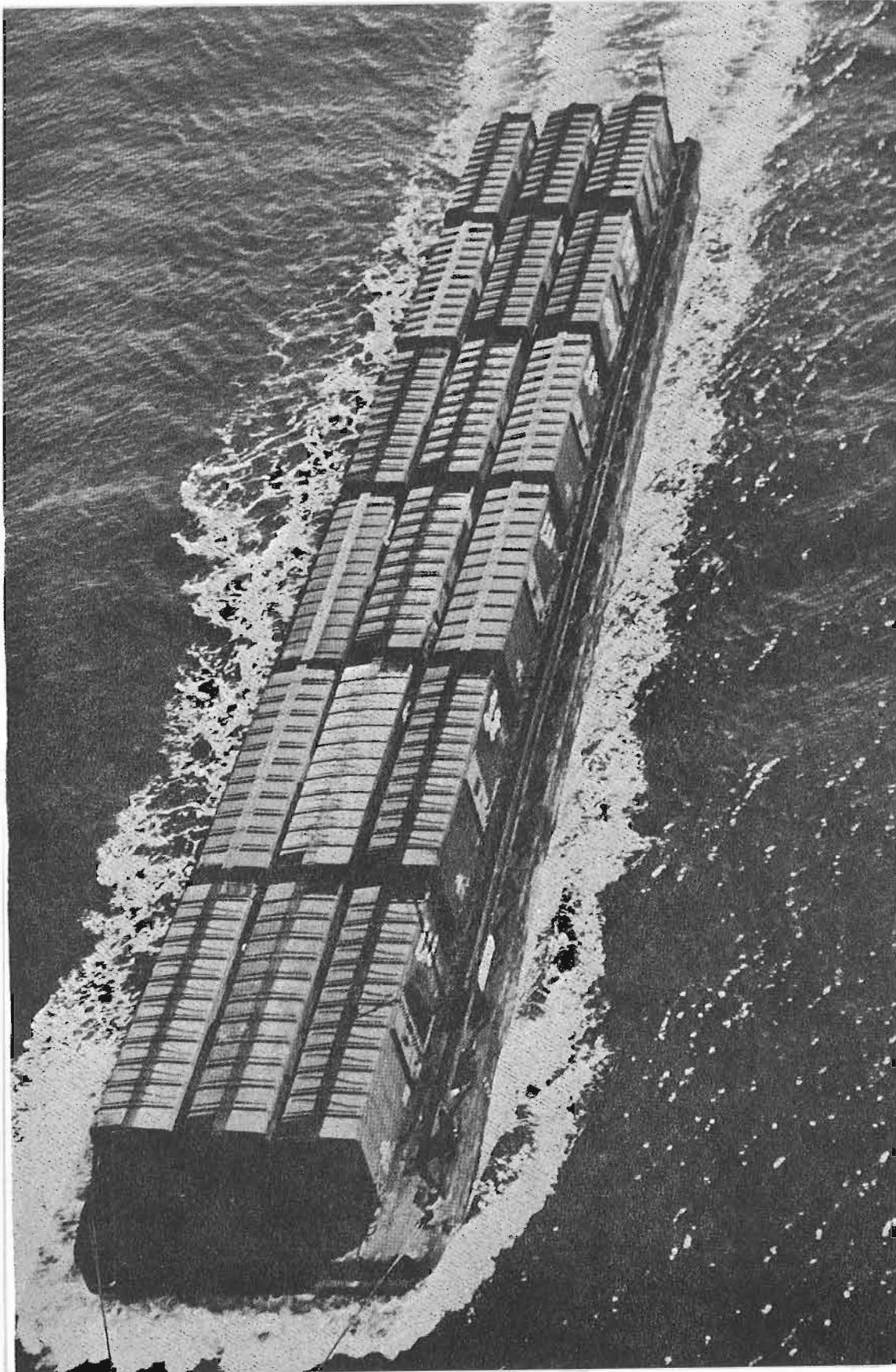
Navigation placed in service a self-propelled barge at the end of August, 1968. This vessel makes scheduled runs between Vancouver and the large pulp mills at Powell River and Harmac. These runs account for about one-fifth of the freight car and tank car movements on water, in this general area.

The two Canadian railway companies, CP Rail and CNR., have regular daily services between their mainland terminals in the Vancouver area and their respective Vancouver Island connections, in Nanaimo for CP Rail, and Victoria for Canadian National Railways. CP Rail uses a mixture of company-operated and subcontracted sailings, but CN farms out all of their requirements. On the lakes in the interior of the Province, CP Rail and CN run their own competitive services on Okanagan Lake, but on Kootenay and Slocan Lakes, CP Rail provides the only (albeit infrequent) service, which is subcontracted.

Mention of Slocan Lake, brings to mind a unique practice, formerly merely routine in this part of the Province. This was the use of a waterway as "trackage" for a railway route. Twice a week, a way freight of CP Rail runs from South Slocan to Nakusp, in southeastern British Columbia - a distance of some 80 miles. Right in the middle of this route, in very mountainous country, lies Slocan Lake, with precipitous rock faces for its shoreline. As a consequence, 20 miles of the Lake, between Slocan City and Rosebery, are used to connect the two dry-land portions of the right-of-way. The way-freight - engine, cars and all, is loaded on a 10-car capacity barge and moved down the lake by a tug. It then resumes its "rail" way to Nakusp.

The largest towing company in the so-called "Pacific Northwest" is the Foss Launch & Tug Company of Seattle, Washington. It provides a companion service to that of the Island Tug & Barge Company, between Seattle and North Vancouver, and tows a 21-car barge between these two points once every two days. Typical northbound traffic is machinery, pipe and drilling mud for oil and gas fields in the far northern portions of British Columbia, Alberta, the Northwest Territories and the Yukon. Southbound freight is mainly forest products, such as finished lumber for the eastern United States markets, and green veneer going to the State of Washington for milling and conversion into plywood. This water route provides Foss Launch with about two-thirds of its rail-barge traffic, which actually forms only a fraction of its total revenue. Foss Launch also tows rail-barges between Puget Sound, in the State of Washington and Alaska, calling at coastal points in British Columbia en route.

The only true ocean-going train-ferry vessel to be found in B. C.'s coastal waters, is the M. V. ALASKA, owned by the Alaska Steamship Company of Seattle. This ship provides a fast weekly service between New Westminster, B.C. (on the Fraser River 15 miles from the Straits of Georgia) and Whittier, Alaska, 1,160 miles north. The ALASKA was built in Japan in 1959 and was first used in seatrain service between Florida and Cuba. When the political situation terminated this service, she became redundant. After being modified to withstand the northeastern Pacific Ocean weather conditions, she inaugurated a new rail-water service to Alaska in June, 1964. Her gross tonnage is 5,593 tons, her operating speed is 18 knots and she has a totally enclosed space holding 56 standard rail-



way cars. Northbound, she leaves the B.C. terminal near New Westminster every Thursday, and takes three days to make the trip to Whittier. The southern terminal is operated by the Great Northern Railway, in partnership with the Milwaukee, the Northern Pacific and The Union Pacific Railroads.

One of the shortest rail-barge runs in British Columbia is operated by the Gulf of Georgia Towing Company Limited in the north arm of the Fraser River at Vancouver; it is about 7 miles from the river mouth. With one 9-car capacity barge this Company provides a daily shuttle service between two plywood mills, located on the north side of the river and a Canadian National Railways slip on the opposite bank. The total hauling distance cannot be more than 1 to 2 miles.

Some of the distant coastal ports in British Columbia do have rail-water transportation service, but on a greatly reduced frequency. For example, the Canadian National's AQUATRAN, from Prince Rupert, B.C., to Whittier, Alaska, runs about once every 10 days. This service was introduced in May, 1962, and was the first link between the Alaska Railroad and the transcontinental railway services of North America. Canadian National has subcontracted the service to Washington Tug and Barge Company, of Seattle, Washington. Northbound traffic consists mainly of steel pipe, wallboard and mobile homes!

In a sweeping generalization of the rail-water traffic pattern in coastal British Columbia one could say that Vancouver is the rail-head, from which many rail-water routes radiate. These routes lead to ports having small or insignificant trackage with the exception of Nanaimo on Vancouver Island, which has railway routes south to Victoria and north to Courtenay and Port Alberni. The main object in this arrangement, is to eliminate costly double-transshipment at Vancouver and at the terminal port. Rail-barge movement outward-bound from Vancouver consist for the most part of empty freight cars, raw materials, machinery and general merchandise. In-bound freight is made up of "exportable" items in the main, such as forest products, apples, newsprint or ore concentrates.

The bulk of this rail-barge traffic is ferried by the time-honored method of barges towed by tugs. A rail-barge is essentially a rectangular box, usually of steel, having railway tracks mounted on its upper side or deck. Barge capacities vary from 4 cars through graduations of 6,8,10,12,15,18,19,21 to 22 cars. The deck-trackage usually consists of two or three parallel tracks but on the largest barges there are four tracks with the two outer ones converging towards the inner tracks at the bow of the barge. Buffing posts are fitted to the tracks at the stern.

In coastal waters these barges are invariably towed, and almost always singly. The towing speed averages 7-8 knots and the tow-line in open waters has a length of 800 to 1,200 feet. Tugs towing barges in salt waters, are engined with units of from 500 to 2,150 horsepower, but the average is in the 700 to 1,200 hp. range. On the Okanagan and Slocan Lakes, the tug is made fast to the side of the barge and side by side, the two vessels plow their way down the lake. Nowhere in British Columbia are rail-barges pushed from behind by the tug.

The supremacy of the towed rail-barge has been con-

tested within the last four years by the introduction of self-propelled rail-barges and four of them now operate in British Columbia coastal waters on fast, regular runs. The first of these, the M. V. GREG YORKE, went into service in January, 1965, being the first of its kind in Canada and possibly in North America. Its construction and operation was pioneered by F.M.Yorke & Son Limited of Vancouver. The performance of this self-propelled rail-barge demonstrated its seaworthiness, speed and docking manoeuvrability and the design has since been copied by CP Rail and Kingcome Navigation who now own one each. The CP Rail vessel, M. V. TRAILER PRINCESS, is equipped with rail trackage, but devotes much of its capability to hauling road semitrailers to a Vancouver Island terminal with no railroad facilities. F.M.Yorke & Son put its second self-propelled rail-barge, M. V. DORIS YORKE, into service in April, 1968, with the added refinement of an upper (or top) deck, to carry highway trucks. Access to this top deck is by elevator from the main (railway car) deck.

These powered vessels are basically elongated rail-barges, but with the underwater hull shaped for speed and stability. The bridge is placed amidships, over the trackage. The rails on the main deck are flush with the deck, so that the vessel can carry road vehicles, if required. The capacity of these vessels is 20 to 26 standard railway freight cars and operating speeds are about 11 to 14 knots. This type of vessel has great manoeuvrability, since it is equipped with twin screws and bow thrusters. Without doubt, this type of vessel will be seen increasingly along the British Columbia coast and elsewhere in Canadian waters.





Apart from the standard rectangular barge, towed by a tug-boat and the self-propelled barge, there remain one or two other variants. The first and most important of these is the 5,554-ton M. V. PRINCESS OF VANCOUVER, owned and operated by CP RAIL. This ship makes 3 round trips, every twenty-four hours, between Vancouver and Nanaimo, Vancouver Island. Her main deck is fitted with railroad trackage and she is capable of carrying 28 standard railway freight cars or 32 road semitrailers. She often carries a mixture of freight cars and semitrailers, but semitrailers predominate. Mentioned previously was the 5,593-ton Trainship, M. V. ALASKA. Finally, there are some large conventionally-shaped barges with pointed bows raised fo'c'sles and high freeboards, used for runs in potentially rough waters. Kingcome Navigation has four of these, CNR two and CP RAIL, one.

A note of caution, - if comparisons of gross tonnages of these vessels are made. Gross tonnage is a theoretical weight, defined as the total permanently enclosed space in a vessel, calculated at the rate of one ton per 100 cubic feet. Because the load-carrying decks of some ferrying ships are not fully enclosed, they are therefore not included in the calculation of the gross tonnage. Incidentally, should water enter the car carrying deck of the ship, it, in no way, affects the vessel's stability, as it simply runs off through the scuppers, back into the sea. In the same manner, railway cars are considered not as cargo, but as accessories temporarily attached to the deck, in the same sense as life-boats.

Distances over which railway cars are towed or carried vary from 1 mile, (across the Fraser River), to 1,160 miles, as covered by the Trainship M.V. ALASKA. The average trip is between 40 and 75 miles and lies principally in the Straits of Georgia area, radiating from Vancouver. Although this area could be called "open

coastal water," it is, nevertheless, somewhat sheltered by Vancouver Island and is thus protected from the full violence of Pacific storms. Only the larger vessels operating in coastal waters, not protected by Vancouver Island or the Queen Charlotte Islands are exposed to the full fury of northern storms. However, this is not to say that weather conditions in the Straits cannot be hazardous since spells of bad weather, including fog, gales and strong tides, conspire with the multitude of small islands and rocky reefs to make navigation dangerous.

The methods employed to load, operate and unload these vessels vary very little. At the pier-head is a moveable ramp of one or two sections, - the landward end of which is hinged to the rail-head, while the water end is supported by cables or chains from two towers, inside which ramp counterweights are suspended. The height of the ramp can thus be adjusted to compensate for changes in the water level, due to tides at coastal loading points and seasonal water level changes on interior fresh-water lakes. The rail-vessel is guided (in most cases bow first) into the slip and secured to the dock and the ramp height is then adjusted, until its tracks coincide with those on the vessel's deck. Securing pins are then inserted to fasten together the ramp and the vessel's tracks.

Curiously enough, an agreed standard for the arrangement of railway trackage between shore and vessel, at a slip, has never been published in Canada by either the Provincial or the Federal Government. As a consequence, not all barges fit all barge-docks in British Columbia, thus permitting a "universal" connection. Historically, this curious circumstance probably originated quite by accident, and possibly through sheer oversight, but perhaps it has been intentionally perpetuated in order to prevent competition from rival companies. Track arrangements at a barge slip can be simply classified in three sorts: There is the arrangement of double, parallel approach lines, which connect with two tracks on the deck of a vessel, or which connect with the two inboard tracks of a 4-track ship. In this event, the two inboard tracks lead to switches on the vessel's deck, thus providing access to the two outboard tracks. The second pattern has three parallel tracks on the shore, which correspond to three tracks on the deck of the ship. The third type has a single-line approach track, which divides into three branches, not fully separated (by the usual three to four feet) at the point of connection to the barge. Corresponding tracks on the barge are arranged in parallel, with the two outboard tracks converging towards the centre track at the point of ramp connection. Further complications are often added by differences of from 2 to 3 inches in the centre lines of deck tracks and differences in slip shapes for securing ramps to vessels. There is no suggestion at the present time that these differences will be reconciled. The most modern self-propelled barges have a complicated system of switches at their bows to permit docking at some slips which may have either two or three tracks on the landward end.

To illustrate graphically the complexity of the problem the reader is invited to carry out the following exercise in design: take one of these ships which has four tracks and number them from 1 to 4; take a dock, having two landward tracks and call them A and B; take another dock, having three landward tracks and call them X, Y, and Z. Viewed from the cab of the diesel dock-switcher, the following possibilities are presented: X leads to 1; A may lead to



either 1 or 2, Y may lead to 2 or 3; B leads to 3 or 4; Z leads to 4. Doubtless there are other illogical possibilities!

Railway cars are moved on and off these vessels in a variety of ways. At all of the coastal railway company terminals, a switching locomotive is available. This engine always uses a "reach" of flat cars in front of it, so that it seldom runs on the ramp and never runs on the vessel. Some of the larger pulp mills and wharves also have small yard switches. At the smaller terminal points, and this is particularly true of the way stations on the interior lakes of the Province, there may be only 50 to 200 yards of trackage. Here the motive power may consist of a farm tractor or a power-operated winch, mounted on the barge or on the wharf. When a railway car has to be moved away from the winch, the cable is run around a bollard or pulley, situated beyond the point where the car is to be spotted.

Once the railway car has been placed on the vessel's deck its air brakes are set and car shoes may be fitted to the rails to prevent any movement when the vessel pitches and rolls. On exposed runs deck shackles and jacks are fitted to hold cars rigidly to the deck. Despite the rough weather than can be encountered on B.C. coastal waters and lakes, losses of railway cars, due to bad weather have been negligible.

Most of the time, every railway car propelled onto a barge will have to be switched at its destination, but in a few locations, this does not happen. Materials handling equipment will empty and load the freight cars or tank car contents will be pumped in or out through flexible hose connections as they sit on the barge. These procedures eliminate the requirement for all of the accessory installations, including switching engines.

It is perhaps superfluous to mention that no railway passenger cars (offering public passenger service, that is) are carried on British Columbia's waterways. Obviously there will be times when CP Rail's DAYLINER vehicles will have to come over to the mainland, from Vancouver Island, for repairs but the last known ferrying operation of a regular passenger train, (to the writer's knowledge), was the transfer of the 13-car "Centennial Train," to and from Vancouver Island, in January, 1967. The "Centennial Train," made the crossing on C.P. Rail's M.V. PRINCESS OF VANCOUVER on the Vancouver-Nanaimo route. And even this famous train could not be classified as a "public passenger service" although some of its cars were built to provide accommodation for members of the train staff, accompanying this colourful Centennial exhibit.

Additional details of rail-barge equipment used in this Province of Canada are given in Appendix II. While this listing is not claimed to be exhaustive it can be regarded as reasonably comprehensive as of October, 1968. In conclusion, the writer would like to thank all the Companies mentioned in the article, who furnished all kinds of information most obligingly. Without their excellent co-operation, this report simply could not have been prepared.





APPENDIX ICommodities transported by rail-barge.

(as determined while preparing this article)

Asbestos	Automobiles	Beer	Caustic	Chemicals
Chlorine	Cement	Drilling Mud	Explosives	Fruit
Forest products	Grain	Glue(liquid)	Groceries	Lumber
Limestone	Machinery	Mobile Homes	Newsprint	Pipe(steel)
Pumice	Poles(wood)	Plywood	Ore concentrates	Oil
Plastic products	Salt	Saltcake	Shingles	Soyabean Oil
Steel(fabricated)	Sulphur(liquid)	Vegetables	Venser(green)	Wallboard
	Wire	Wood Chips		

Appendix IIRail Ferrying Equipment in British Columbiaas of October, 1968

(coastal only unless otherwise noted)

C.P. RAIL1. Coastal Equipment:

(A) M.V. PRINCESS OF VANCOUVER:

5,554 tons; large passenger ferry steamer, built 1955; Capacity 28 railway freight cars or 32 road semitrailers on main deck, 35 automobiles on upper deck and 900 passengers.

3 round trips daily, Vancouver to Nanaimo, Vancouver Island. Road traffic, primarily.

(B) M.V. TRAILER PRINCESS:

2,689 tons; self-propelled road-rail barge, built 1944, as Landing Ship-Tank for U. S. Navy; converted in 1966; Capacity 20 railway cars or 30 road semitrailers.

2 round trips daily on week days, Vancouver-Swartz Bay, Vancouver Island.

3 to 5 round trips per week, Vancouver-Nanaimo, with railway freight cars.

(C) TRANSFER NO. 4:



1,593 tons; towed barge, converted 1952 from U. S. Navy L-S-T.

22 freight cars or 26 road semitrailers;

Used to augment services described in (A) and (B) above as required and to act as stand-by.

2. Interior Lakes:

(A) OKANAGAN LAKE:

I. Tug OAKANAGAN (diesel):

204 tons; built Seattle, Wash., U.S.A. in 1947 and assembled at Oakanagan Landing, B.C.

II. Tug NARAMATA (steam):

150 tons; built Port Arthur, Ont., in 1913 last used in regular service in August, 1967.

III. Barge No. 4 & Barge No. 8:

2 towed rail-barges of 10-car capacity; Oakanagan Lake service is offered between Kelowna and Penticton, B.C., a distance of 35 miles, with way-points at Westbank, Summerland and Naramata. 6 round trips weekly; traffic is very varied and includes fresh fruit, lumber, groceries, silica rock and oil.

(B) Slocan Lake:

I. Tug IRIS G:

Handles towed rail-barge No. 6; capacity 10 cars; Route is from Slocan City to Rosebery, B.C. Approximately twice weekly service; operation is subcontracted.

(C) Kootenay Lake:

I. Tug MELINDA JANE:

Handles two towed rail-barges, Nos. 1 & 2, of 15-car capacity each. Trips made, as required, from Procter to Riandel, Kaslo and Lardeau, B.C.; about 35-40 cars handled weekly mainly lumber and ore concentrates. Operation subcontracted.

CANADIAN NATIONAL RAILWAYS

1. Coastal Equipment

(A) Barge No. 107 & Barge No. 108:

2 towed barges, capacity 15 cars each; about 2 trips weekly from Tilbuty, B.C. (on south arm of Fraser River, about 5 miles from Straits of Georgia) to Victoria Harbour, Vancouver Island; occasionally call at Cowichan Bay and James Island (explosives), all on southern tip of Vancouver Island.

(B) CN AQUATRIN:

On charter, Tug MOGUL and towed barge GRIFFSON (30 cars); Prince Rupert, B.C. to Whittier, Alaska; trip about once every ten days.

2. Interior Lakes:

(A) Okanagan Lake:

I. Tug No. 6:

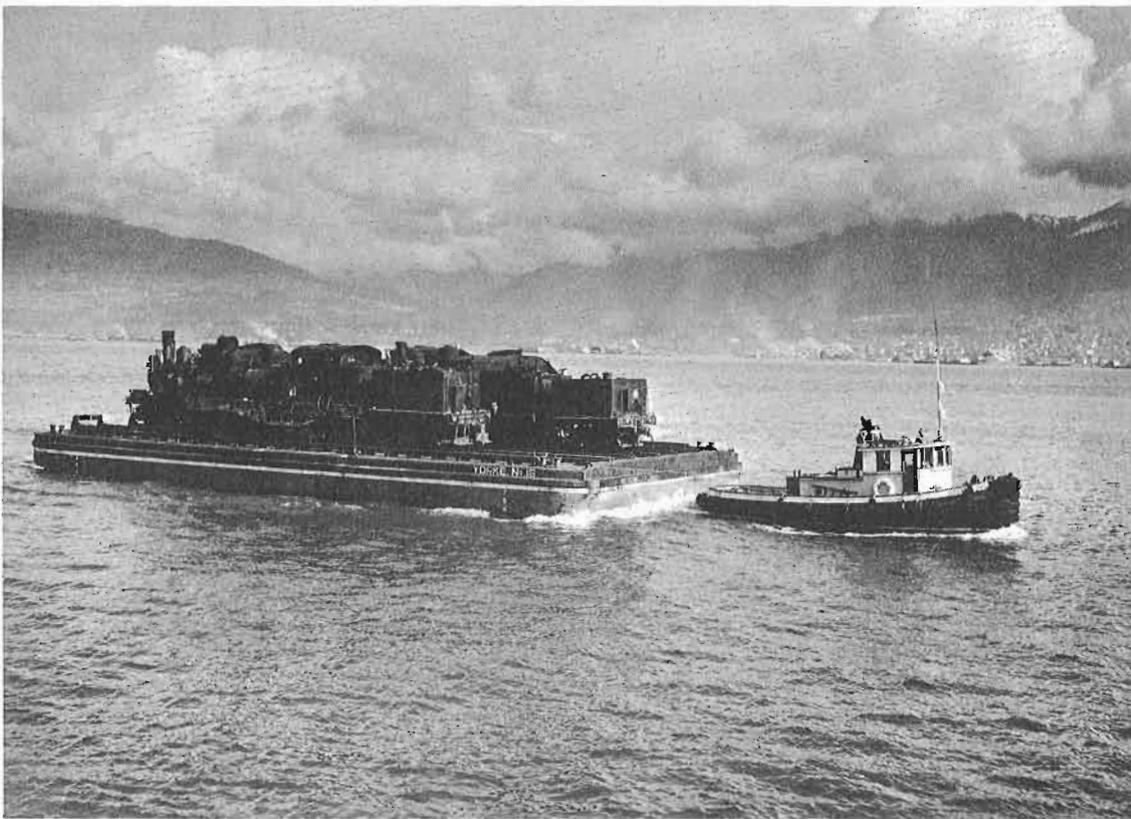
600 hp., 90 ft. long; built Victoria and assembled on lake in 1948.

II. Tug PENTOWNA:

Stand-by tug; built 1927, as lake passenger steamer and converted at a later date to tug.

III. 3 towed barges;

8, 10, and 10-car capacity; route is Kelowna to Penticton with way points at Westbank, Peachland,





Summerland and Naramata; 6 round-trips weekly and 7 in fruit harvesting season; traffic mainly fruit, lumber and general merchandise.

F.M. YORKE & SON LIMITED, VANCOUVER, B.C.:

1. M.V. GREG YORKE:

2,433 tons; self-propelled rail-barge; built 1964; 25 cars on main (flush) deck; now chartered to CNR for 7 days week round-trip service, Tilbury on Fraser River to Point Ellice and Ogden Point, Victoria, Vancouver Island.

2. M.V. DORIS YORKE:

2,611 tons; self-propelled rail-barge; built 1968. 25 cars on main (flush) deck, 28 road semitrailers on upper deck; presently chartered to CP Rail for nightly round-trip Vancouver-Nanaimo, Vancouver Island. Provides daily service, Vancouver-Port Mellon or Crofton pulp mills.

3. Three other tugs and 9 towed rail-barges of 4,6 (four) 12 and 18 (three)-car capacities.

4. F.M. Yorke & Son Limited also has unique installation in Vancouver Harbour for loading cars. Consists of wooden grid placed on bottom of dock onto which rail-barge is manoeuvred at high tide. As the tide recedes rail-barge settles on grid at required height, so that barge and land rails correspond. Cars carrying heavy loads of up to 250 tons can be switched onto barge without risk of overturning barge. If such a procedure were attempted on a small floating barge it would jack-knife, under this weight.

ISLAND TUG AND BARGE LIMITED, VANCOUVER, B.C.:

General tug and barge company; 27 tugs 110 barges/scows rail-ferry services only a small part of total business specialized equipment as follows:

1. Four large pointed-bow barges:

ISLAND FIR - 22 cars

ISLAND HEMLOCK - 22 cars

ISLAND SPRUCE - 21 cars plus below-deck tanks
for bulk caustic

ISLAND LOGGER - 19 cars

2. Three rectangular barges:

No. 103 - 12 cars

No. 109 - 18 cars

No. 106 - 15 cars

3. Principal Services offered:

I. Scheduled daily service:





North Vancouver, B.C. (connection with PGE) to Seattle, Wash., and connection with MILW NP and UP Railroads. Major southbound commodity is lumber in box cars, carried on 21 or 22-car barges.

II. Scheduled twice-weekly service:

Company's own trackage at Victoria to Seattle, Wash. 15-car barge usually used; Commodities vary, - Soyabean oil in tank cars, fresh fruit and vegetables in refrigerator cars, lumber in box cars.

III. Non-scheduled service:

To all B.C. ports, as required. Includes frequent deliveries of chlorine in tank cars to Port Alice (N.W. Vancouver Island) pulp mill from North Vancouver or Squamish

KINGCOME NAVIGATION COMPANY LIMITED, VANCOUVER, B.C.:

1. M.V. HAIDA TRANSPORTER:

2,553 tons; self-propelled rail-barge; built 1968;
26 freight cars; runs week-days from Vancouver to Powell River, outbound with empties and chemicals and inbound with newsprint and other forest products;
Runs three times weekly to Harmac pulp mill.

2. One 9-car barge:

On charter to move cars between chemical plant at Squamish and pulp mills at Woodfibre and Powell River.

3. One rail-barge:

Tows 1 CNR rail-barge from Tilbury - (Fraser River) to Chemainus pulp mill, Vancouver Island.

FOSS LAUNCH AND TUG COMPANY, SEATTLE, WASH., U.S.A.:

Large company owning 70 tugs and 250 barges; rail-barge traffic is only a part; principal services touching British Columbia are:

1. Scheduled every-other-day service:
Seattle to P.G.E. at North Vancouver; rail-barge 21 cars; travelling time 14 hours, each way.
2. Regular every 1-3 week service:
Bellingham, Wash., to Ward Cove, Alaska, for Ketchikan Pulp Company, via chemical plant at Squamish, B.C.; 20-car capacity barge.
3. "On demand" service:

For movement of zinc ore concentrate from Britannia Beach, Howe Sound, B.C. to Seattle, Wash. for forwarding to smelting and refining in Montana, U.S.A.

ALASKA TRAINSHIP CORPORATION, SEATTLE, WASH.:

Runs weekly service with one ship from Delta, Alaska Terminal (near New Westminster, B.C.), to Whittier, Alaska. Connects GNR in B.C. with Alaska Railroad:

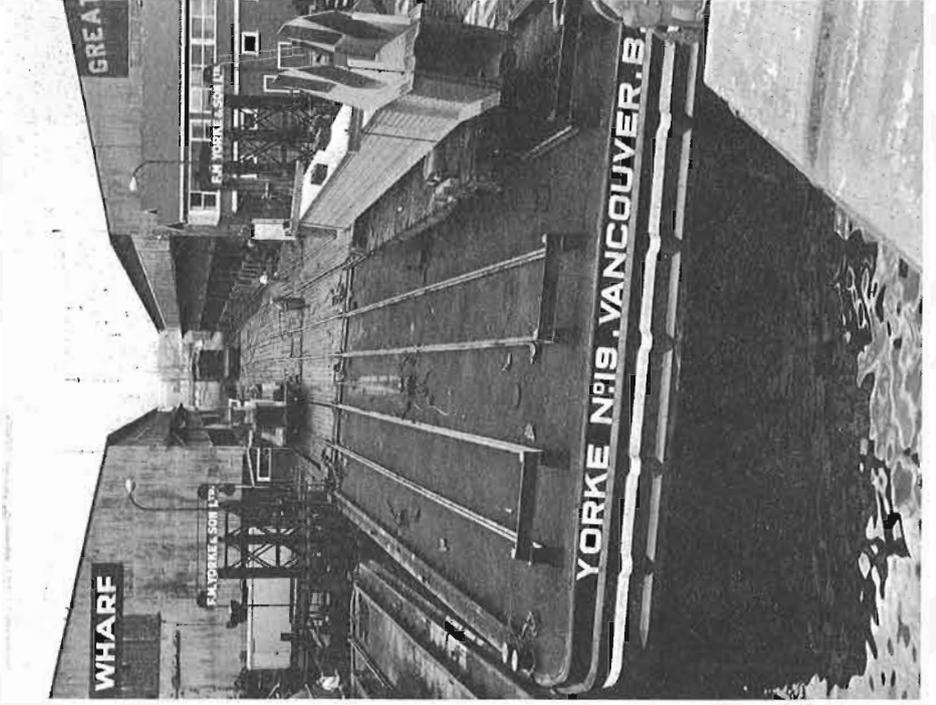
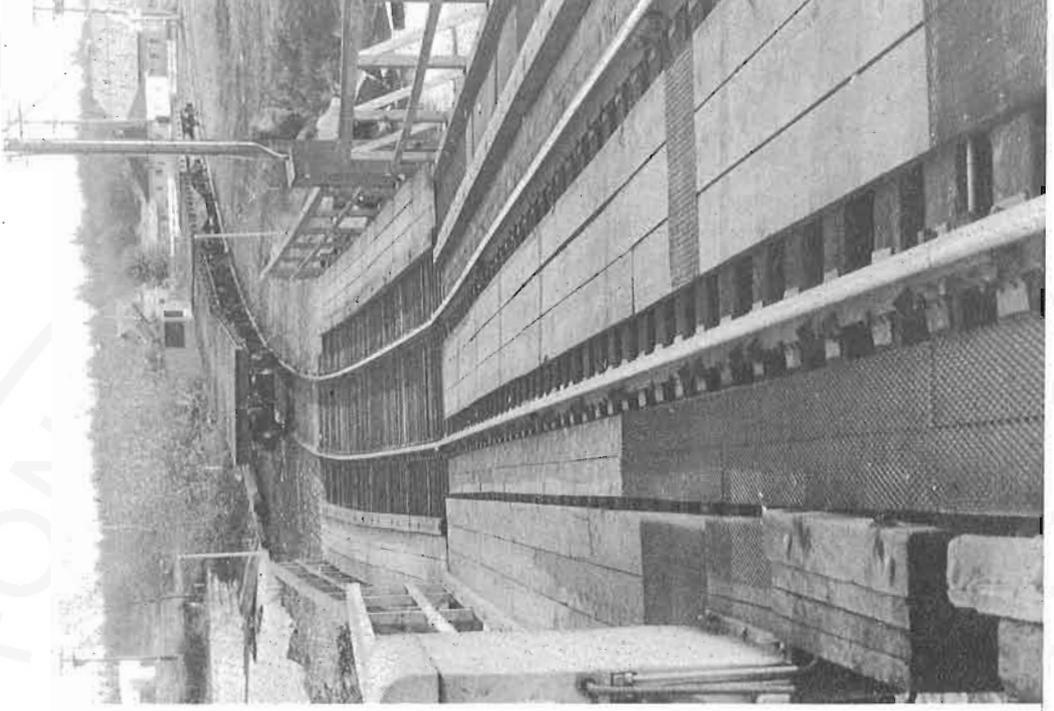
1. M.V. ALASKA:

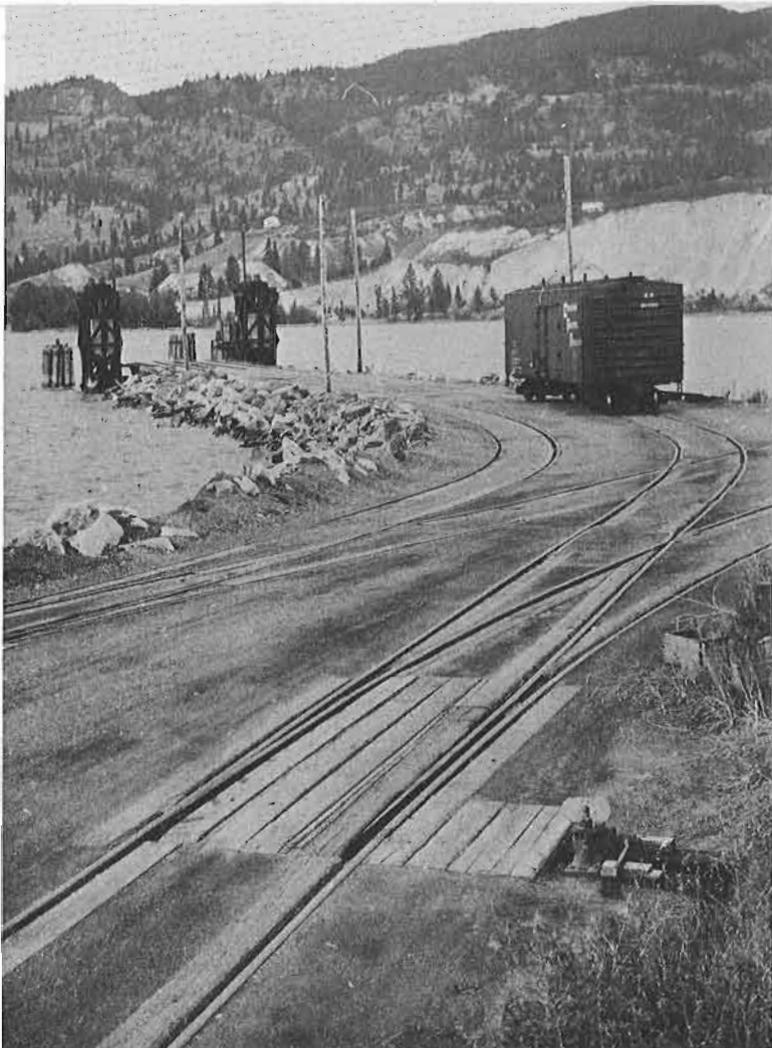
5,593 tons; ocean trainship; 17½ knots, built 1959 for Florida-Cuba trainferry service; converted in 1963-64 for Pacific coast service; fully enclosed rail-deck; 56 railway cars; no accommodation for passengers.

GULF OF GEORGIA TOWING COMPANY LIMITED, VANCOUVER, B.C.:

Company has a sizeable fleet of tugs, barges and scows; rail-barge work is exception to normal activity.

1. Contract Towing CNR Barges Nos. 107 & 109:





Once weekly or oftener from Tilbury on Fraser River to Victoria and/or Cowichan Bay or James Island, Vancouver Island.

2. One 9-car capacity rail-barge:

Operates in North Arm of Fraser River, Vancouver;
Once/twice daily service between 2 plywood mills on north bank of Fraser and CNR slip on Lulu Island, Fraser estuary.

PACIFIC GREAT EASTERN & GREAT NORTHERN RAILWAYS:

These Companies possess no vessels and operate no ferry services. G.N.R. has a rail-barge slip on south side of Vancouver Harbour near Centennial Pier.





BY F.A. KEMP

UNION PACIFIC - CENTRAL PACIFIC -

May 10, 1969, was the day chosen for the observance of the driving of the "Golden Spike", joining the Union Pacific and Central Pacific Railroads at Promontory, Utah, in 1869, on a section of line superseded by the Lucin Cut-off, which was built across the Great Salt Lake in 1906. The original line, through Promontory, was taken up as a war-effort measure in 1942 and the rails used for other purposes.

The re-enactment ceremony was staged on a section of new line re-laid on the original roadbed at Promontory, intended to become part of a railway museum at that location. The historic locomotives, which have played the parts of the two original ones, in numerous pageants from 1893 to the present day, were moved to the site and a special "rich man's" excursion was to run from New York to Ogden, Utah and return at the unprecedented price of \$ 995 for the two-week return trip! Scheduled motive power was restored NICKLE PLATE "Berkshire" no. 759 from New York to Kansas City, a new 6600 hp. "Centennial" GM diesel locomotive from Kansas City to Salt Lake City and UP's last steamer no. 8444 from Salt Lake City to Ogden.

It is noteworthy that UNION PACIFIC seems to be doing all the commemorating. Its "Overland Route" partner, Southern Pacific, doesn't seem very interested, although the contribution of predecessor Central Pacific was as important as that of UP in forming the first continuous rail line across North America.

UP's decision to order even larger diesel units is significant for a railroad noted in the days of steam for "Challengers", "Big Boys" and latterly 10,000 hp. gas-turbines, with diesel units of 5000 and 5500 hp. already on the roster and a physical plant to match. The new 6900's will have full-width, low-profile noses ahead of the cab, but a conventional or standard hood, with running boards, behind. They will ride on specially-designed four-axle trucks, similar to those under the 5500 hp. units.

METROLINERS and TURBOTRAINS -

Part of the much-discussed "Northeast Corridor" project, using PENN CENTRAL's electrified New York-Washington line, finally became a reality on January 16th, last, with the first run of the METROLINER on a 2 hour-59 minute schedule. It has since taken the travelling public by storm, running with virtually every seat taken - at an extra fare of \$ 1 to \$ 2 for a coach seat, and was joined by a second train in March. The train consists of six multiple-unit electric cars of almost cylindrical cross-section, with flat ends, which implies that two or more train-sets may be operated in multiple, if required. The curved sides and roof, sheathed in stainless steel, indicate their Budd Company origin. All cars have faively pantographs, but only three of these are used at a time. In the meantime, TURBO train sets, following their January 6th. withdrawal, have been undergoing modifications and tests to rid them of their cold-weather troubles. Tests were reported to have included a visit by one train-

set to the Northern Ontario area (Hornepayne), home of Nature's eastern ice-box. In March, UAC reported that TURBO trains would not be ready for re-introduction for "four or five months", making the possible effective date somewhere between mid-July and early August.

MOONLIGHT IN VERMONT -

The State of Vermont has a reasonable share of interesting short-line railroads and now some of these lines may be toured on a "Rent-a-Train" service. Rail Associates Incorporated of Bellows Falls, Vt., will offer charter-train service for one-day tours, to local attractions, mainly on lines of the Green Mountain Railroad and the Vermont Railway, both formerly part of the Rutland Railway. Local attractions suggested include the Bennington Monument and Museum, the Shelburne Museum and the Lake Champlain Ferry trip, across Lake Champlain from Burlington. There are several more tourist attractions on the lines concerned. The service complete with snack service and a chicken barbeque will be available from July 1 through Labor Day.

Another scenic Vermont short-line, the St. Johnsbury and LaMoille County Railroad, has acquired an observation-lounge sleeper, which formerly bore the proud label of NEW YORK CENTRAL's "Twentieth Century Limited". Named the "Maumee River" on the NYC, the new acquisition is said to be reserved "strictly as a business car", possibly for hunting and fishing trips. Its round-end, stainless-steel exterior is a decided contrast to the wooden combination cars which once carried the rear-end markers on the St. J.'s mixed trains!

RUTLAND RELIC -

The New York State portion of the former Rutland, whose hard-luck history lasted 118 years, finally came to an end last August 19, 1968, with the demise of the 25-mile Ogdensburg and Norwood Railroad. This remnant was left in place after the scrapping of the Norwood-Rouses Point-Burlington line. The intent was to provide service to the east side of Ogdensburg Harbour and the grain elevator, built by the Rutland in the days when the Railroad operated ships on the Great Lakes. Traffic on the O & N did not develop as expected, perhaps because both terminals are served by present-day Penn Central, although the river mouth separates the two lines at Ogdensburg. This now somewhat-static city was the goal of many projected railroads, in addition to those actually built. The dreams of lucrative lake traffic were crushed in 1915, with the passage of the Panama Canal Act, under which Interstate Commerce law prohibited railroads from owning or controlling an interstate water carrier that competed against its railroad owner.

Curiously enough, this line was owned by seven corporations, in succession. Opened as the Northern Railroad of New York, in 1850, it became the Ogdensburg Railroad in 1858, the Ogdensburg and Lake Champlain, in 1864, was leased by the Central Vermont from 1870 to 1896, merged with the Rutland Railroad in 1901, the latter becoming the Rutland Railway Corporation in 1950 and was subsequently abandoned in 1963. The track between Rouses Point and Norwood was removed in 1965-66.

'WAY OUT WEST -

Is the PACIFIC GREAT EASTERN heading for Alaska? The B. C. Government-owned railway is now building a 250-mile extension from Fort St. John to Fort Nelson, B.C. A contract has been awarded for the first 73-mile segment of the line, northward from Fort St. John. At the same time, another extension of 80 miles is being pushed westward from Fort St. James to Takla Lake, prolonging the 78-mile line completed last year. The Takla Lake extension will be completed at the end of 1970 and the first part of the main-line extension earlier in that same year, bringing the

total mileage of the PGE to 1,043. Presently, the railway operates 890 miles, using 57 diesel locomotives and six Budd RDC units. Four more diesel units are on order.

In 1967, PGE transported 83,764 carloads of freight, for a gross revenue of \$ 25.6 million and a net profit of \$ 595,322. The new lines being built will open up new territory to mining, logging, agriculture and other industries, increasing freight traffic potential and making PGE the third largest railway in Canada. It certainly has come a long way since 1952, when it was only 374 miles long, with connections to other Canadian railways only via rail-barge from its terminal at Squamish, B.C. Today, its North Vancouver-Prince George main line is a scenic delight, well worth the time taken to ride it by anyone visiting Canada's West Coast.

MONTREAL'S METRO

and its chief promoter, Mayor Jean Drapeau, were the recipients of both tribute and tribulation latterly. The Mayor was presented with the 1969 Transportation Award at the fourth International Conference on Urban Transportation, held in Pittsburgh, Pa., on March 12. The Award, in recognition of Mayor Drapeau's work in developing the 16.5-mile subway, known as METRO, includes the privilege of designating the recipient of a \$ 7,000 fellowship for a graduate student in the field of Urban Transportation Planning and Administration, at the University of Pittsburgh. The fellowship covers a two-year study period and the student's environment will provide plenty of examples of how not to resolve the urban-transportation problem!

Meanwhile, earlier in the month, an illuminated stained-glass mural was unveiled above the Line 1 track at the east end of the otherwise austere Berri-de Montigny main transfer station. And, on the same day that His Honor the Mayor's award was announced, March 7, a short-circuit on a train resulted in an explosion and fire on southbound Line 2, at Jarry Street station. Dense, acrid smoke filled the station, as hundreds of passengers scrambled up the stairs and escalator to the surface. 12 persons were taken to hospital, - one with a broken nose and most others suffering from smoke inhalation. Fireman arrived almost immediately, and evacuated passengers from a northbound train, stalled in the tunnel when the power was cut off. Stalled or inoperative escalators, at other locations, have plagued the METRO at various times since its opening and have often remained out of service for several months, but only during March was it revealed that these and many other METRO components are still under the contractor's warranty and replacement parts are not kept on hand, but must be ordered from England!

Finally and inevitably, on March 29th., after a week's notice and three days before April 1 (for the passengers), the fares on METRO, as well as the City's bus system were raised by 5 cents to 35 cents cash, 3 tickets for 90 cents or 17 for \$ 5. The reason for the hike was given as operating deficits and the desire to finance the bus replacement programme out of current revenue, rather than by borrowing at the current inflated interest rate.

CP RAIL - MOTIVE POWER AND ROLLING STOCK -

The new color scheme is being applied to passenger equipment for use on the "Canadian" as quickly as possible and most of it will be finished by the end of June.

The business car "Laurentian" was outshopped March 21st., in the new colours, following a major overhaul and conversion of its electrical and air-conditioning systems to more modern equipment. This is probably the first business car to be repainted in the new colour scheme. It is generally used by CP RAIL Chairman, Mr. N.R. Crump.

Provision of reversible seats in two "Skyline" dome cars has enabled CP RAIL to reduce the number of Montreal-Quebec train sets from

three to two. This permits equipment arriving at 1650 hrs. on Train 153 to leave at 1800 hrs. on Train 154, even when 153 arrives late. The dome cars have had their individually-cushioned dome cars' seats replaced by bench-type flip-over seats, salvaged from scrapped coaches and parlor chairs were installed in the former downstairs coach section, so that separate parlor cars are run only at peak traffic periods.

It now appears that CP RAIL's order from MLW-Worthington will be for both C-630's and C-636's. 21 new units will be six-axle 3,000 hp. road-freight units, said to be for Natal-Roberts Bank coal unit-trains. 29 others will be 3,600 hp. jobs, for Montreal/Toronto-Calgary freights. The 51st unit is a hush-hush odd-ball, like a C-636, but rated at 4000 hp.

Recently, CP RAIL announced a new SHIP for its coastal and inland fleet, traditionally operated by the RAIL component of the corporation. The new ship for the Bay of Fundy service between Saint John, N.B., and Digby, N.S. will feature bow-and-stern loading and unloading, with a hydraulically-operated bow section and stern door. A two-and-a-half hour crossing time with 90-minute turnaround, will permit three trips a day. Specially constructed ramps are to be built by the Federal Government's Department of Transport, including compensating aprons for the 27-foot Bay of Fundy tides. The ship is to be built by the Saint John Shipbuilding & Drydock Company Limited. A name for the new vessel has not yet been chosen.

ELIMINATION OF LEVEL CROSSINGS -

Increasing speeds of trains on CN's Montreal-Toronto main line have focussed attention on many level crossings which intersect this line some of them being heavily-travelled roads. Westward from Montreal, both CN and CP RAIL double-track main lines are laid parallel from Lachine to Vaudreuil (Dorion). For most of this 15-mile route, a major highway runs next to the CN right-of-way, making grade-separation work more complicated and much more costly. However, work has at last begun on an underpass for Montée St-Charles in suburban Beaconsfield. Plans have been prepared for an overpass at Chemin des Sources (Strathmore Station on CP RAIL), the most heavily-travelled suburban crossing, but financing seems to be a real problem, up to now. At Dorion, the CN and CP RAIL lines diverge, so that the two crossings on the main street are some 200 yards apart. A 35 mph. speed restriction for this crossing has been in effect since 20 persons were killed on October 7, 1966, when a CN freight struck a school bus. Now, plans for a double underpass have been drawn up and are awaiting final approval from the Provincial roads minister, F.J. Lafontaine. This action is essential, since Québec will pay most of the cost, although the location which qualifies as two separate crossings will get \$ 1 million subsidy from the Federal Grade Crossing fund. The project was announced by Jean-Charles Vallée, Mayor of Dorion.

SPEAKING OF ELIMINATIONS -

Readers should eliminate some miles from PENN CENTRAL and NEW HAVEN, as given in the March CANADIAN RAIL. PC was 19,300 and NH 1,569, (approx.) for a total of 20,869. There are two subsidiaries of 210 and 214 miles to push the system to over 21,000 miles. The former 1245 hrs. TURBO's were numbered 62 and 63 and their RAPIDO successors have kept these numbers. The afternoon RAPIDOS leaving at 1640 hrs. are numbered 64 and 65; these are the trains which carried "Skyview" cars. In the case of the Markham Local, it was numbered 990 at its demise. It was formerly numbered 900. The explanation of CP RAIL's choice of unit 1432 (nee 4041) for regearing is that it is actually newer than most of the other units of its class. It was rebuilt by GMDL, following a level-crossing accident in which it struck a gasoline truck near Brandon, Man., while hauling the CANADIAN. CP RAIL 1801 was on Train 154, not 134 and Mr. L.B. Chapman of Ottawa says second 4016 was the car body of 4014 and 4016 was rebuilt to 8824.

PRECEEDING PHOTOGRAPHS

DELTA ALASKA TERMINAL, B.C. The aerial view on this month's cover is the berthing-point for the Trainship ALASKA of the Alaska Steamship Company. It is located a few miles downstream from New Westminster, B.C., on the Fraser River. Photo courtesy Alaska Steamship Company.

Georgia Towing Company Limited's GULF RAILROADER is shown on page 126. A 9-car barge, she is used in shuttle service in the north arm of the Fraser River between plywood mills in Vancouver and Burnaby and CN's barge slip on Lulu Island, Richmond, B.C. Photo courtesy David Davies.

The 18 freight cars on Island Tug & Barge Company's rail-barge, illustrated on page 132, are towed by a tug between Vancouver Island and mainland ports. Photo courtesy Island Tug & Barge Limited.

"A" class freight cars, loaded with paper made at Harmac Mill on Vancouver Island, are offloaded from an 18-car rail-barge, on page 134. The scene is one of CP RAIL's barge slips at Vancouver, B.C. Photo by David L. Davies.

Pictured on page 135 is the CP RAIL rail-barge slip at Vancouver, B.C. that is always used by the PRINCESS OF VANCOUVER. The wooden ramp at the right is for automobiles which are stowed one deck above the railway deck. The switcher is about to unload a string of cars. Photo by David L. Davies.

The beautiful and immortal PRINCESS OF VANCOUVER, CP RAIL's once major railway car carrier between Vancouver and Nanaimo, Vancouver Island. Now no longer "Queen of the Straits", she is principally popular with passengers and rubber-tyred semi-trailer trucks. Photo courtesy CP RAIL.

The antique-looking structure on page 139 is Canadian National Railways' barge slip on the Inner Harbour, Victoria, Vancouver Island. Despite its appearance, it is believed to have been built in 1927. Still in use, it sports a stub switch instead of the conventional kind. Photo by D.L. Davies

Yorke Barge No. 6, with three tracks of tank cars is tug-towed through the shore reaches of the Straits of Georgia, near Vancouver, B.C., top of page 143. Photo courtesy F.M. Yorke & Son, Ltd.

The picture at the bottom of the same page shows one of F.M. Yorke & Son's tugs towing a rail-barge load of logging locomotives from Englewood, in the northern part of Vancouver Island to Vancouver, on 30 April 1959. The geared engines came from Canadian Forest Products Limited's logging railway and were destined for scrapping at Vancouver. Photo by F.M. Yorke & Son

CP RAIL's Tug OKANAGAN at Kelowna, B.C. on Okanagan Lake is shown on page 141. The tank car on the barge supplies fuel to the tug. Photo D.L. Davies

Gulf of Georgia Towing Company's 9-car barge GULF RAILROADER is shown on page 144. Docked at CN's slip on Lulu Island, Richmond, B.C., it is used on the North Arm of the Fraser River in shuttle service. The middle car is a flat fitted with high stanchions. Photo by David L. Davies.

Located at the end of a peninsula in the Fraser River, a few miles downstream from, and on the opposite shore to New Westminster, B.C., the aerial view on page 146 shows Delta Alaska Terminal, B.C. and M.V. ALASKA, ready to load cars for her trip north. Photo courtesy Alaska Steamship Company.

Canadian National's barge on Okanagan Lake, B.C., approaches the slip at Penticton, on page 147, with CN Tug No. 6. One of the 10 cars on the barge on this trip held explosives and had been landed at one of the stops en route, consigned to a mining company. Photo by David L. Davies.

F.M. Yorke & Son's rail-barge slip with Barge No. 19, moored to the apron, is shown on page 149, top. Track 1 is loaded with a flat car carrying a bridge beam. The photo at the bottom is CN's Lulu Island Slip, North Arm, Fraser River, nearly opposite Fairview Golf Course. Both photos D.L. Davies.

Served jointly by CN and CP RAIL, the barge slip at Naramata on Okanagan Lake is shown on page 150. The trackage at this "port" is about 250 yards long! Photo by David L. Davies.



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