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WEST COAST RAIL TOUR

By Peter Cox

Cover: Map of lower British Columbia and sketch of Climax 0197-001.pcx

Have you finalized your vacation plans for this summer? Good, I hope you have a grand time, and if railfanning activities are part of your plans, good hunting! Before you buy your tickets or load up your camera though, consider what may be in store for you on Canada's west coast. There is railroading galore, and much of it is steam, even in 1962!

For a start, consider Vancouver. After crossing the Lions Gate Bridge, if you look in the right place you will see smoke rising from the stack of a spic and span 3-truck Shay, busily shoving hopper cars to the unloader at Vancouver Wharves Limited. Her lettering indicates the name of her newest owner, Railway Appliance Research Limited, and her number is 115 (see *Newsletter 195*, Page 41). Right next door is the North Vancouver yard of Pacific Great Eastern, usually good for several MLW hood units and a Budd RDC or two, plus an interesting selection of passenger equipment gathered from all over the continent. A trip over this line is strongly recommended, for its scenery and operation must be seen to be appreciated. Grades, trestles, mountain gorges, tunnels, steel bridges and continual curvature make the trip a rewarding adventure. If you stop at Squamish, (40 miles from Vancouver) you can see the road's last steamer, Mikado No. 160, a CLC product of 1945, in storage, but still intact.

Don't go too far away though, for there is more to cover in the Vancouver area. New Westminster (14 miles to the east) is the headquarters for British Columbia Electric's (recently renamed B.C. Hydro and Power Authority) freight operation, handled by 14 diesels of G.M. and G.E. manufacture. Within five minutes walking distance you will find Pacific Coast Terminals, whose two 0-6-0's are without a doubt the best maintained and cleanest steamers in the country. As only one works at a time, you will see either 4012 or 4076, depending on when you arrive. The C.N. and C.P. are very much in evidence on the Lower Mainland, of course; but you must be a diesel fan to appreciate these roads, for steam packed up for good over four years ago. Port Mann and Vancouver are both good spots, photographically, for such items as C.N. Geeps festooned with mountain floodlights, (for seeing around curves), while on the C.P., Coquitlam boasts of Trainmasters and transfer engines, as well as the only Baldwins on the roster. Both it and the city yard are very good for camera work. Americana comes to town twice daily in the form of the Great Northern's Internationals, whose brilliant orange and green livery shows up well on Kodachrome II film.

Traction fans need not despair for there is something for them as well; two G.E. steeple cab freight motors, for instance, BCE 960 and 961. You can always find one or the other at work, right in downtown Vancouver.

You have as yet but scratched the surface, and should continue westward to Vancouver Island for the most wonderful sights of all! Presuming you have taken the CPR ferry to Nanaimo, a short seven mile drive and a right turn at Cassidy will bring you within sight of tracks. Depending on weather and timber traffic these tracks can be quite busy, and most of the trains they support

will be steamers. This is the Nanaimo Lakes run, operated by Comox Logging and McMillan Bloedel & Powell River, each one sending a string of log buggies up the 20-odd mile line, later branching off to their respective camps to pick up a load of the big sticks. Motive power varies, and here is what you might see: Comox Baldwin VO No. 7128, 2-8-2 No. 11 or 2-8-2T No. 16, MB & PR 2-8-2 No. 1055 or 2-6-2 No. 1077. Comox favours the diesel, but since it is in the regular habit of breaking down, the steamers must come to the rescue. MB & PR alternates its power.

If you retrace your steps to the highway and then go south seven miles to Ladysmith, you will find Comox's shops. Whatever is not up the line will be there, plus Shay No. 12 and 2-6-2TT (both tender and saddle tank) No. 7, both in storage. Eight miles farther south is Chemainus where a very pleasing 2-6-2T can be found switching. It is MB & PR No. 1044, while 2-8-2T No. 1066 is its standby.

If you want more, another five miles will bring you to Crofton and a tiny coal-burning Shay switching the pier of Osborn Bay Wharf Company Limited. Numbered 1, she weighs in at a modest 30 tons. Also at Crofton you will find Whitcomb diesel No. 9 of British Columbia Forest Products.

Now take time to change your films and catch a breath before inspecting the next treats in store for you. Continue south (12 miles) to Duncan, then west (1 mile) to Deerholme. McMillan and Bloedel Shay No. 1 is on display here in a private museum that operates two steamers on a narrow gauge pike. Deerholme is also the terminus of the C.N.'s Island lines, for which GMD-1 units 1000 to 1002 provide the motive power. Moving farther west to Paldi, the now abandoned logging railway of Mayo Lumber is represented by a wood-burning, balloon-stacked Shay No. 3 on display. At Mesachie Lake, Hillcrest Lumber uses Climax No. 10, but keeps No. 9, another Climax, as a standby, while at Honeymoon Bay, Western Forest Industries has stored Shay No. 5 (they may put her on display) but is content to let Hillcrest's famous Climaxes do their switching.

Elsewhere, a narrow gauge 0-6-0T, No. 19 of Wellington Colliery is on permanent display at Nanaimo. MB & PR's nearby Harmac pulp mill keeps G.E. diesel No. 1012 busy, while sister No. 1011 works on more MB & PR trackage at Port Alberni, the home of displayed Shay No. 2. Farther north, you will find Comox 2-6-2T No. 2 exhibited at Courtenay. If you do not feel up to driving that far (70 miles) north of Nanaimo, then take the CPR's Dayliner for a very relaxing and very scenic trip over the Esquimalt and Nanaimo. While you are at it, go 30 miles more to Duncan Bay (2 miles north of Campbell River) and examine Elk Falls No. 1, a two-truck Shay, quite small but quite alive!

That just about covers the story of railroading in the southwestern corner of British Columbia, with the exception of Canadian Forest Products, whose operation away up at Englewood is almost inaccessible except by chartered boat or plane. Three modified GMD-SW-1200's do most of the work, but steamers 112, a 2-6-2ST and 113, a 2-8-2, are in standby. Such unique locomotives as a diesel-powered Shay and Climax are also to be seen here. The Vancouver Wharves Shay came from this outfit, as have a variety of Shays and Climaxes which have been barged into Vancouver for scrapping over the last few years.

In case you are wondering why Canadian Collieries has not been mentioned, it is because they ceased rail operations in 1960, with 4-6-0 No. 14 and 2-6-2T No. 17 now residing in Seattle as the property of the Puget Sound Railway and Historical Society.

And what about Victoria? Like Vancouver, it too is all diesel. The C.P. uses CLC hydraulic No. 13 plus several conventional switchers. The C.N. unloads a weekly barge with G.E. engines 4 and 5 while ex-National Harbours Board G.E. No. 74 is assigned to the Ogden Point pier.

On your way home you might detour via Washington and Oregon, for there are still railways operating in these states which favour the many-wheeled engines that run by steam. They, however, are another story.

Photo: Hillcrest Lumber No. 10, probably the last operating 3-truck Climax in North America, is seen switching cars at Mesachie Lake, B.C. 0197-002.jpg

Photo: Mayo Lumber No 3, a Lima product of 1924 (No. 3262) rusts in peace at Paldi, B.C.0197-003.jpg

Photo: Don't let the arrow seceive you, BCE 960 can and does go in both directions while switching in Vancouver. This engine was former Oregon Electric No. 22, thus explaining its Alco 1912 origin (builder's No. 51070).

0197-004.jpg

Photo: This sporty Prairie type, seen here at Nanaimo Lakes, is No. 1077 of McMillan Bloedel amd Powell River. She was built by MLW in 1923 (No. 65377). Note the two generators mounted at the base of the stack.

0197-005.jpg

Photo: Diminutive Shay No. 1 of the Osborn Bay Wharf suns itself on the pier at Crofton, B.C. Prior to its duties here, it was Hillcrest Lumber No. 1 and its builders plate reads "Lima, No. 3147, December, 1920." 0197-006.jpg

Photo: Spic and span Pacific Coast Terminal No. 4076, a Lima product of 1944 (Lima No. 8410), carried the same number while working for the U. S. Army. 0197-007.jpg

Photo: Comax Logging Mikado No. 11, built by Baldwin in 1923 (No. 57407), steams contentedly at Ladysmith, B.C. 0197-008.jpg

U.C.R.S. Announcements

The June meeting of the Society will be held on the 15th. of that month in Room 486, Union Station, commencing at 8:30 pm. This will be the last regular meeting of the current season, there being none during the months of July and August, and all members should make an effort to attend. There will be the usual entertainment following the business part of the meeting.

➢ Members are reminded that there will be no First Friday meetings during July and August, the outdoor meetings for those months being held on the third Friday. Details of the July meeting, to be held on the 20th., will be included in the next *Newsletter*.

➢ The Society regrets to report the recent passing of Associate Member Reverend Donald C. Harry, latterly of Ottawa, and previously of Toronto and Owen Sound. Reverend Harry, U.C.R.S. member No. 339, was well known to Toronto resident members as he was a frequent attender at meetings, even during his period of residence at Owen Sound. He was a particular devotee of the Canadian Pacific Railway, and authored a number of articles on the operations of this system which were published in the Owen Sound Sun - Times.

Photo: General Electric test car 1304. 0197-009.jpg

➢ While not distinctly Canadian, here is a development that may soon see exploitation here. The General Electric Company is experimenting with the automatic remote control of the rail-borne transit vehicles at their Erie, Pennsylvania plant. At present, they have ex - D.C. Transit (Washington, D.C.) air-electric PCC No. 1304 outfitted with a Stone-Faivley pantograph to operate on their existing overhead system and various pieces of control gear mounted inside the car body to control its movement. 1304 still carries the grey and green colours of the D.C. Transit and the interior of the car is reasonably unaltered, with the old advertising cards still in their usual places. There is even a notice near the operator's seat cautioning passengers against talking with the non-existent motorman!

Equipment aboard the car performs essentially the same functions as the human operator would in controlling the accelerating and braking of the car. While the operator receives his information to stop or start the car from lineside signals or the visual conditions of the track ahead, the automatic system receives this same data from stationary wayside control boxes. The information is transmitted to the car over an inductive cable system laid parallel to the track,

the car picking up the signal from the cable, without touching it, via pick-ups mounted on the trucks. The wayside controls compare the track conditions and the normal operating procedure at that point (e.g. accelerate, maintain speed or brake, etc.) then send the control signal to the car or train.

Even casual observation of Toronto subway operating practices reveals that such a system might well be practical here. Motormen make few independent decisions on the control of their trains, being governed entirely by signal indications and wayside markers. Each start from a station is the same; the controller is quickly wound to its full-on position (often while the doors are still open) and the automatic notching-up of the control equipment governs the acceleration of the train. At a yellow "O" marker, the controller is closed and the train coasts. At the red numbered markers (4, 6 or 8 depending on the train length) the brakes are applied in full service application and the automatic lapping equipment ensures a smooth stop. Already then, automatic equipment does the majority of the work in controlling the train, the operator only translates signal indications or recognition of wayside markers into car control changes.

When can we expect automatic rapid transit? There are many objections to be overcome yet. Present operating unions would inevitably oppose such a scheme (as they have done in New York), and public confidence must be generated before the system would be accepted, although many sophisticated elevator control systems are used with little thought of the many troubles that can beset them. Then too, cost of new control equipment must be weighed against the savings in labour and maintenance costs that would be realised. However, maximum utilization of rapid transit lines can only be gained through the use of the most modern equipment and procedures available, and we are bound to hear much more of such automatic control techniques in the future.

Dismantling of the CPR Preston - Wolseley Line

While in no sense a pleasant subject, details have become available of the methods used by the Canadian Pacific Railway in the dismantling of the 122-mile branch line from Preston, Manitoba to Wolseley, Saskatchewan. This branch was built by the C.P.R. in 1900 and opened on October 29th. of that year as one of the many railway lines which materialized with and were a part of the Western settlement boom which occurred at and in the years following the turn of the century. The subdivision was popularly known as the "Peanut Line" by local citizenry.

Abandonment was authorized by the Board of Transport Commissioners on December 12, 1960 and became effective with the operation of the last train on August 31, 1961. The dismantling operations as described hereunder were carried out during a 60-day period in the fall of 1961.

Opportunities were given by the railway to contractors to submit prices for the salvage job with or without the sale of rail and fastenings, but it early became evident that the C.P.R.'s own forces were more familiar with this type of work, and it was decided to undertake the project using railway maintenance-of-way gangs. Consideration was given to tracking all material or to operating a Pioneer track laying unit in reverse, but these ideas were discarded in favour of a new system designed for mile-a-day operation per gang when an examination of the right-of-way revealed that rubber-tired power shovels could operate over its length.

Two complete units were organized and started back to back on September 20th. at Mile 64, one unit working towards Preston and the other towards Wolseley. A demolition gang, consisting of 8 men and a foreman, preceded the main loading gang, pulling all spikes but four per rail, removing tie plates, and cutting all bolts but one off joints. This gang was equipped with a spike puller, a rail saw for cutting bolts, a front end loader for loading released material, 3 gondola cars to receive this material, and a crawler tractor to move the cars. In addition they placed gondolas on sidings to be picked up by the loading gang during the day.

The main loading gang had about seven gondolas behind a self-propelled 30-ton B&B diesel

operated crane. As the outfit backed up the remaining spikes and bolts were removed from the rails, and the crane swung them in pairs to the first gondola behind it. Three power shovels equipped with forks immediately picked up the ties in bundles of 40 to 60, depending on their capacity, and ran down the right-of-way to load them in the gondolas by means of slings. Small scrap was thrown on a push car towed by the crane and moved by a front end loader to a scrap car when required.

A bulldozer followed this operation, taking out culverts and levelling crossings. When loads became excessive for the crane to move, the bulldozer was used to advance loaded cars clear of the working point. Labour used on the main gang consisted of approximately 12 men and machine operators.

A work train and crew came on duty at the close of the working day and transported the day's accumulation of loads to the end of the line, where they could be shipped or stockpiled, and brought back empties during the night for the next day's loading. At the stockpile six men and a dragline handled the piling of ties and the return of slings to empty cars.

Ties were culled as soon as the spikes were drawn and sold, together with fence posts, wire, snow fencing and buildings which were not considered salvageable. Considerable care had to be taken where culverts were removed to open up watercourses to their original size and to condition road crossings to the standard of adjoining road surfaces. The following material was recovered from the 122 miles of line:

Rail	- 15,000 tons	Joint Bars	- 17,000 pairs
Bolts & Spikes	- 700 tons	Tie Plates	- 580,000
Turnouts	- 33	Ties	- 310,000

In addition, four bridges were demolished and 400 culverts taken out. Nineteen stations and section houses and 61 miscellaneous structures were disposed of, together with 200 miles of right-of-way fence and 20 miles of snow fence.

The use of the rubber-tired equipment was possible only due to the fact of the dry summer season of 1961. The availability of this equipment rendered the handling of ties an easy process, saving considerable money. Abandonment of the line cost the railway approximately $1200.00 per mile, $1000.00 per mile less than contract price. The salvage operation was under the control of the staff of the C.P.R. Regional Engineer at Winnipeg.

MONTREAL SUBWAY CONSTRUCTION UNDER WAY
A REVIEW OF THE PROJECT TO DATE

Montreal first talked about a subway more than fifty years ago, long before many American cities of even greater size became too concerned over problems of Metropolitan transportation. Finally, on April 26, 1962 the long awaited first contract on the proposed $150 million system was awarded to a joint venture of C. Durauceau Ltee. and the Foundation Company of Canada Limited, the lowest of eleven bidders on the Cremazie - Jean Talon section of the Berri Street route.

Only recently has any positive action toward construction been possible among a welter of conflicting and independent interests represented in the 14 municipalities of Metropolitan Montreal. Recent legislation granted authority to the Montreal Metropolitan Corporation for planning over the island area, but since the Metro Corporation is only a body of commissioners or representatives without facilities or staff, the implementation of subway planning must be performed by departments of the City of Montreal.

BASIC GEOGRAPHICAL PROBLEMS: The city lies at the longitudinal centre of a 40-mile long island in the St. Lawrence River, an island shaped somewhat like a sock with the city at the ankle. The downtown district is a 2½ square mile area close to the south (or east) shore at the heel of the sock. Just north-west of downtown lies 700 foot high, 1000 acre Mount Royal,

an effective block in the path of access routes to and from the business district. Access routes to virtually all portions of the city must therefore seek an east-west alignment from the central business district before junctions are reached. Surface transport must not only by-pass Mount Royal, but also combat old and narrow streets with offsets and dead ends. A number of 6-lane road projects undertaken in the last ten years have not solved the basic problem.

Transit riding has held up better in Montreal than in many other comparable cities in spite of a total reliance on free-wheel surface transportation at the present time. One major factor in this is a lower automobile ownership in the city, which to some extent at least, results in turn from the more severe winters experienced in Montreal than in other major cities. Efficient winter operation of the transit system in itself has, of course, contributed toward the all-year riding habit. 2000 transit vehicles presently provide service for 1,617,000 persons, covering 370 miles of streets. It can be readily seen that a situation exists which is highly conducive to the development of rapid transit.

ENABLING LEGISLATION: The Act creating the Montreal Transportation Commission in 1950 failed to provide the Commission with the power to build and operate a rapid transit system, although the Commission was directed to prepare plans for a subway system in Montreal; the Commission proceeded to the execution of this task with diligence and produced a comprehensive plan by 1953. In 1959 this plan was revived along essentially similar lines, yet statutory authority to construct a subway, to say nothing of the necessary funds, remained unavailable.

In January, 1961 Montreal civic authorities were granted powers to finance and build a subway system by the Provincial Government. Working on the premise that a subway facility is much like a city street or other works project, the City of Montreal is behind the capital investment for the program, with full control over design and construction. Upon its completion, the M.T.C. will be called in to operate the subway as an integral element of the total transit system. An important and practical element of the legislation was the power granted the city to extend subway lines into Westmount, Outremont, St. Laurent and Mt. Royal. It also obtained power to negotiate with the C.N.R. for purchase, rent or use of the former Canadian Northern Mount Royal Tunnel line with extensions to Cartierville and to Papineau Avenue.

CONSTRUCTION DATA: Actual construction on the first contract, the north end of the Berri Street line, began during the third week of May, to the accompaniment of the following exultant editorial in the *Montreal Star*:

"So now we have finally got started on the subway project. There were many times over the years when it seemed a pretty forlorn hope that anything but talk would ever develop despite the self-strangulation which the metropolis encouraged by refusal to act. But when the first drills started on their shuddering way at the intersection of Jarry and Berri Streets this morning, a new era began.

"A long time will elapse before we are able to speed under still-congested streets on our long overdue Metro. But no matter how much worse things may become along the routes involved we will have the satisfaction of knowing that, in the end, the improvement in our traffic pattern will be almost immeasurable.

"For all those who have worked seriously for the last two decades to educate the people of Montreal to a realization of the need for this development, it is a happy day; the happiest day, of course, will be the one on which the first trains start rolling. The administration deserves the congratulations it is receiving today. It decided it would build a subway and wasted little time transforming pledges into action. Well done, Mayor Drapeau. Well done, Mr. Saulnier.

"Now on with the job."

The first contract (A-1) involves boring through solid rock for the first 1.2 miles commencing at Cremazie Boulevard and extending to Jean Talon. The contractor will have 700 days

to complete this job and will be permitted to work double shift from 7 am. to 11 pm.

The next invitation for bids, under contract 2-A-2 will be opened on July 3rd., for the construction under Berri and de St. Vallier Streets from Jean Talon to a point south of Rosemont Boulevard. Again this work will be through solid rock. A later third contract will continue work to Marie-Anne Street. From Marie-Anne south to St. Catherine Street, proposed as cut-and-cover in soft earth, work is yet to be scheduled. Although profiles are established and general locations of line and stations are set, the Public Works engineers are now working on specifications for the planned east-west line along St. Catherine.

Route location survey work terminated on March 1, 1962, after 675 team-days and 400 surveyor-days, performed entirely by Municipal personnel. Preliminary soundings from 180 test holes showed that about 4 miles of tunnel will be in a solid rock formation, but the east-west line subsoil formations are complex and variable.

Alignment is largely straight on the Berri Street line; of a total of 30,000 ft. of tunnel on this line, 79% will be tangent, 6% on a 10,000 ft. radius, 12% on a 3,000 ft. radius, and only 3% (a junction point) on a curve of 600 ft. radius. The east-west line will have a more irregular alignment.

The total length of the initial "A" and "B" lines is 55,000 feet. About 42% is in the solid rock tunnel, 55% in open or covered cut and 5% in earth tunnel. The maximum grades between stations will be 6%, minimum 0.30%.

Ventilation will be forced air with intake through elevated ducts behind houses and buildings; air will be passed through the tunnels to be evacuated through the stations; this will alleviate the discomfort of cold air fed directly into stations during winter.

The single tunnel was favoured as the most practical and economical, with a "basket handle" arch, 26 feet wide. In soft soil, where open cut construction is to be employed, the structure will be a rectangular box 28 feet wide.

Stations will measure 500 feet in length with lateral platforms for fast passenger movement. Station profile grades will vary between 0.30% and 0.50%. Mezzanines will be elevated between the station grade and street level, and access corridors to several large buildings in the downtown area will be provided.

Although negotiations with the C.N.R. are proceeding with regard to incorporation of the Central Station - St. Eustache electrified territory as the third line of the proposed rapid transit system (Line "C"), the city is still waiting, at the time of writing, for provincial approval to taking over this rail facility. Nevertheless, the engineering firm of Lalonde, Girouard and Letendre has been retained to work out with the city and the C.N.R. the extent of alterations required to Mount Royal Tunnel in order to enable its use as a part of the subway system, and to reach an agreement as to the basis of the proposed purchase of the tunnel.

EQUIPMENT AND OPERATION: Rubber tired 52 foot long power cars and 56 foot trailers, 8' 2" wide and 11' 9" high will operate on standard gauge tracks on Lines "A" and "B". These cars will have eight vertical wheels for normal traction purposes and eight horizontal guide wheels bearing on the concrete curbs alongside each track. All sixteen of these wheels will be equipped with rubber tires filled with nitrogen as a precaution against explosion in the event of a blowout. There will in addition be eight steel flanged wheels mounted inside each running wheel which will engage conventional rails lying within the concrete track in the event of a blowout, and will act as brake drums in normal operation. There will thus be the amazing total of 24 wheels on each car. The equipment will be of aluminum construction and have four doors per side.

Trains will be operated in 9-car sets consisting of six motors and three trailers carrying in total 540 seated passengers and 927 standees. The "A" and "B" lines will require 28 trains, 11 on the east-west line and 17 on the north-south. Equipment for line "C", although known to

be conventional rail equipment, has not been finalized to date.

FINANCIAL ASPECTS: The city's investment in engineering and fixed assets of the system will be recoverable from the general revenue of the municipality, while costs for rolling stock and installation are recoverable from operating revenues. These revenues are calculated as $13 million per year and should exceed expenditures by $7 million. Revenue estimates are based on an anticipated annual total of 167,000,000 fares, 70,000,000 on the east-west line, 67,000,000 on the north-south line and 30,000,000 on the rail-tunnel line.

The Executive Committee of the city is the borrowing body, with the approval and guarantee of the Provincial Government; the loan moneys are to be utilized for the sole purpose of the subway and are repayable over a 40-year period. The C.N.R. conversion will be repaid on a monthly rental basis, avoiding borrowing on this part of the total system.

STATION LAYOUTS AND PARKING LOTS: Particular pains are being taken by the Public Works engineers to design surface station layouts which will accommodate the routing of suburban feeder transit routes to them as well as substantial automobile parking. Functional flow and aesthetic appearance are important considerations, as the city administration realizes that the functional quality of the subway system and its facilities could go far in inducing motorists to park at outlying stations, thereby relieving vehicular pressures on roads at the city's core. There will be twelve terminal parking lots all owned by the city, the M.T.C. or the C.N.R., and it is hoped to direct suburban and interurban bus services (other than M.T.C. operations) to these terminals.

SUMMARY OF PROPOSED SYSTEM

LINE	LENGTH	STATIONS	TOTAL INVESTMENT
Berri ("A")	5.52 miles	11	$70,000,000
Demontigny ("B")	4.02 miles	10	$55,600,000
Mt. Royal ("C")	11.60 miles	15	$24,200,000
Totals	**21.14 miles**	**36**	**$150,000,000**

Completion of the entire system is hoped for by 1966, although it is recognized that the C.N.R. line could possibly be in operation by 1965 if the conversion project assumes priority over other construction projects.

(See map, *Newsletter 190*, Page 10.)

CPR NOTES

➢ Diesel switchers 8141, 8142, 8143 (London), 8147, 8150 (Trenton Division), 8152, 8153, and 8154 (Sudbury) are to be equipped with Watchman heaters. All switchers are to be fitted with a non-spill universal nozzle attachment in connection with diesel oil refuelling trucks. The first units at West Toronto to be so equipped are 6549, 6586, 6614 and 7021.

➢ The following baggage cars, now stored at Agincourt as surplus to present requirements are to be converted during 1962 to service equipment: 4357, 4360, 4379, 4399, 4416, 4418, 4481, and 4483.

➢ The CPR is reportedly holding Hudsons 2816 and 2827, now stored at Angus Shop in Montreal, for the National Historical Museum in Ottawa. There is a possibility that two further locomotives will be earmarked for this museum.

➢ Six hundred refrigerator cars equipped with basket bunkers are presently being scrapped by the C.P.R. at Farnham, Quebec.

➢ The CPR received tenders to April 25th. for the general yard office building, the retarder control building and the east end yard office at the Agincourt Classification Yard project.

➢ Tenders will be called during June for Canada's first continuous prestressed concrete

railway overpass, carrying five C.P.R. tracks over Sheppard Avenue at the throat of the Agincourt Hump Yard, now under construction just east of Toronto.

CNR NOTES

➢ The CNR has ordered 50 sets of Evans aluminum bulkheads to be installed in insulated box cars to eliminate the use of dunnage in these cars. Each car equipped will contain two bulkheads suspended from travelling beams which span the width of the car, and which, in turn, travel along longitudinal tracks near the upper corners of the car interior.

➢ The CNR has set up a Car Control office in its London, Ontario Yard Office to direct and trace the movement of all freight cars in the London terminal. Punched cards (one per car) record the location, status and recent history of each car.

➢ Rails have been lifted from the Muskoka Wharf and the large shed over the wharf dismantled. The station building itself was up on blocks and rollers for movement to another site (as yet unknown) for preservation. The CNR has advised the Town Council that Gravenhurst Station is to be closed during 1963. (R.D.Cooper)

➢ C.N.R. 4-6-0 1521, owned by publisher Andrew D. MacLean, and which had been stored in the Gravenhurst engine shed since the summer of last year, was moved to its display location on May 19th. The locomotive is situated on Highway #11 at the north end of the Muskoka Daily News parking lot in Gravenhurst.

➢ A contract has been awarded to Lucas Construction Company of Regina by the C.N.R. for the clearing and grading of the 7.8 mile extension of the Chisel Lake Subdivision from Chisel Lake to Stall Lake, Manitoba.

T.T.C. Happenings

➢ On Friday, May 25th., PCC's 4227 and 4732 were involved in a head-on collision at the intersection of Bloor and Dundas Streets during the evening rush hour. 20-year old A-3 4227 suffered extensive damage and appears likely to be scrapped. The other car, ex-Birmingham A-13 4732, got off with lighter damage, and seems reasonably sure of being repaired. However, there is no official word as yet on either of the two cars.

➢ On Monday, June 4th., the Metropolitan Toronto Roads Department commenced work at the corner of Kingston Road and Woodbine Avenue on the resurfacing of the roadway between that intersection and Victoria Park Avenue to the east. The TTC is taking advantage of this work to perform necessary repair work to the tracks, such as shoring up the rail joints and generally realigning the rails. This work is expected to take approximately 6 to 8 weeks.

➢ The TTC Eglinton subway station, designed to carry an office building over the subway structure in its original construction, is finally to be surmounted by a 17-storey building. The surface of the station area has remained in an unfinished and rather unsightly state for eight years awaiting what was originally expected to be a six-storey structure. The 17-storey building requires additional concrete caissons outside of the existing subway structure to avoid overloading the present structure. A two-storey parking deck for this building has already been constructed over the bus and trolley coach storage yard directly east of the Eglinton carhouse building.

➢ The TTC is calling tenders to June 25th. for Contract D-4 of the Bloor Subway, involving the strengthening of the structure of the Prince Edward Viaduct and the installation of a concrete deck on the lower level for the use of the subway trains.

➢ The TTC is giving consideration to the use of closed circuit television to watch passengers entering subway turnstiles on the Bloor-University line in lieu of station personnel. The cameras would be used in long stations such as St. George where an operator would sit at one end observing

the screens and using a loud-speaker system where necessary to direct passengers and reprimand would-be fare-evaders. The system has already been tested in the Yonge Subway and is reportedly successful.

N.H.B. Montreal Electrification

Map: N. H. B. Montreal Electrification 0197-010.pcx

The Montreal Harbour Terminal Railway, operated by the Harbour Commission of Montreal, is a switching railway serving the piers on the St. Lawrence River below the Lachine Canal. In 1918, the 55.35 miles of track operated by the Commission saw 30 trains per day, totalling between 1000 and 1800 cars, hauled by 9 steam locomotives. However, after visits to the electrified terminals of New York and Philadelphia in 1914, the Commissioners decided to electrify their lines, but the effort of World War I caused them to defer their plans until after 1918. At this time, plans were drawn up for a 2400 volt D.C. overhead pick-up system, the same as that being installed by the Canadian Northern in their Mount Royal tunnel project.

Bids were invited for the supply of the materials for the overhead supports, trolley wire and substation equipment until June 14th., 1919, allowing the actual work of erecting the wire to commence by September of that year. Work continued through the winter and by spring, only the bonding of the switch points and at crossovers remained to be completed before very limited electric operation could begin In order to make use of the equipment installed, the Harbour Commission leased two of the Z-1a class, 83 ton electric locomotives (Nos. 600 to 605 on the Canadian Northern, later 9100 to 9105 on the Canadian National) which were in use on the C.N.'s electrified zone extending north to Val Royal. These electric locomotives were built by General Electric, two at Peterborough and four at Erie, Pennsylvania, the first of which was delivered in February, 1917.

The work of installation of the fixed equipment was carried out by Harbour Commission employees and was divided into four main categories, described as follows:

POWER STATION APPARATUS: The station was designed for a capacity of three 1000 KW motor-generator sets, the units having a very heavy overload capacity for a short period to meet railway conditions, and capable of carrying 250% load for five minutes. Each set consisted of a 3-piece unit, a 1500 HP 2300 volt, 3 phase, 60 cycle 720 R.P.M. synchronous motor directly connected to a 500 KW, 1200 volt, 720 R.P.M.. compound wound D.C. generator on either end, each generator being permanently connected in series giving 1000 KW at 2400 volts.

Each of the motor-generator sets weighed 40 tons, mounted on its frame, and covered a floor space of 28 feet long by 8 feet wide and approximately 7 feet high. Water cooled, oil insulated power transformers of 2000 KVA capacity were installed, taking power from the incoming lines at 11,000 volts and stepping it down to 2300 volts for the synchronous motors. These transformers weighed approximately 30 tons each.

CONTROL AND PROTECTIVE APPARATUS: The switchboards cell, remote control devices, oil switches and protective equipment were mounted on galleries on the second floor of the building and consisted of 21 marble panels with the necessary meters and indicating mechanisms for the complete control of the generator sets, quick-acting breakers, storage batteries, power transformers and exciters.

OVERHEAD CATENARY LINE APPARATUS: The overhead line equipment consisted of cross span and bracket construction supporting the main messenger which was $^{7}/_{16}$ inch extra galvanised Siemens-Marten steel cable anchored in half-mile sections. The cross spans were supported by poles at spacings of 150 feet on double tangent track, and 120 or 105 feet as conditions require on curves or in yards.

Cross-span messengers consisted of $^{5}/_{16}$ inch high strength galvanised steel cable, the tension on all messengers being maintained at approximately 2300 pounds. Attached to and supported by the main messenger is the conductor, consisting of $^{4}/_{0}$ grooved hard drawn copper, fastened by hangars of varying lengths, keeping the trolley wire at the uniform height of 23 feet above the top of the rail. Steel poles were used, the pole bases being set in concrete carried well above the ground level.

RAIL BONDING: The type of rail bonding used was a steel armoured terminal, gas-welded copper stranded bond, capacity $^{4}/_{0}$, seven inches long, cold pressed and headed.

By the beginning of 1923, some 40 miles of track had been electrified, and in that season two 85-ton electric locomotives were rented from the Canadian National Railways (No. 9103 and others), and were operated on that part of the system which had been provided with electric power connections. The service thus obtained, however, was at best only of a partial or temporary nature, as none of the rail connections to piers or sheds had been electrified.

The work of completing the installation was carried on vigorously during 1923 and in the early part of 1924, and it was hoped that by the end of that year, by which time delivery was expected of four new 100-ton electric freight locomotives, that the operation of the complete system by electricity would be possible.

The H.C.M. ultimately went on to purchase nine of these 100-ton electric locomotives from the English Electric Company, numbered 101 to 109. After the H.C.M. electrification was abandoned in 1940 because of high costs of operation, 101-109 were traded to the C.N.R. for seven class 0-18c 0-6-0 steam locomotives (Nos. 7512 to 7518) and a cash sum, in 1942, to become Nos. 9180 to 9188 (later 180 to 188) on the National system and still on its roster.

Miscellany

➢ At the joint conference on railway engineering held in Toronto during April, Dr. O. M. Solandt, Vice-President of the CNR, indicated that he foresees a resurgence of fast intercity rail passenger service by virtue of the growing problems of metropolitan transportation. He predicts a return to highspeed, high volume interurban rail lines on which trains would operate at speeds of up to 200 mph with stops every 25 to 50 miles. French and Japanese railways (Paris - Lyons and Tokyo - Osaka) were particularly mentioned as providing the type of service that will probably be required between large concentrations of population on this continent in a few years.

➢ The Ontario Northland will soon begin construction on the proposed 4½ mile branch line from the Ramore Subdivision at Boston Creek to the Adam Mine property of the Jones and Laughlin Steel Corporation.

➢ After 57 years of production, the foundry operations of the Westinghouse Air Brake Division at Hamilton, Ontario will be discontinued during the coming summer owing to the low level of railway requirements for new air brake equipment.

➢ The following is an extract from a report on Procedures and Policies for Planning, Financing and Organization for an integrated urban transportation system, as presented to the Metropolitan Toronto Planning Board on May 16, 1962:

> "In the field of transit, current plans in Toronto provide only for subways with a capacity of 40,000 persons per hour and bus lines with a capacity of 4,000. Evidently a type of transit of intermediate capacity is required, with higher performance than buses and lower cost than subways. The "restricted tramway", now in use in several European countries and in modified form in Cleveland and Boston, may provide the answer."

➢ On May 22nd., C.N.R. general passenger sales manager Pierre Delagrave told a press conference that a four-hour Toronto-Montreal train service (2 hours and 15 minutes less than the present schedule) is a distinct possibility for the future, coupled with a one-way fare between the two

cities of $6.00, as against the present fare of $12.80. He indicated that the following features would in all likelihood have to be implemented to permit this development:

(a) Non-stop scheduling,
(b) Elimination of level crossings, and
(c) Redesign of passenger car layout and furnishings, including "5-across" seating.

MEMBERS' ADVERTISEMENTS

Frank Vollhardt, Jr., 2435 Mahoning Avenue N.W., Warren, Ohio, U.S.A., wants Ontario Northland and T.& N. O. locomotive photos, any size. Also negatives, slides, movies, and back issues of "*The Quarterly*". Needs also early employees' timetables of this road.