Canadian Rail

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CN's UNIT TRAINS

Duncan Haimerl

Canadian National Railways' definition of a unit-train is a train that handles consistently a volume of traffic of uniform commodity with equipment of a uniform type. The train continually cycles between single loading and unloading points, with customer and carrier committed to maintaining the defined cycle. The shipper and user are responsible for maintaining specified loading and unloading times and the carrier is responsible for meeting the specified transit times for loaded and empty equipment. Finally, the shipper is obligated to ship a minimum volume of the commodity over a specified time period.

While this might seem to be a rather complicated definition, a serious consideration of the various criteria will lead to the conclusion that each of them has to be observed if the agreement is to be successful and profitable for both the carrier and the shipper.

The first Canadian National train to comply with the above criteria began operation in March 1970, transporting coal from Luscar, Alberta to Vancouver, British Columbia.

The solid train (trainload shipments) has characteristics similar to the unit train, except that the power units and/or cabooses may be used in other services. In the case of the unit-train, these elements are integral. The first solid train began to operate in 1957, transporting gypsum from Milford to Wright's Cove, Nova Scotia, on CN's Bedford Subdivision.

The strict application of unit-train criteria was first employed on shipments of heavy "Bunker C" fuel oil between Imperial Oil's Montréal East refinery and the Atomic Energy of Canada installation at Douglas Point, Ontario. The 63-car, half-mile-long train began operating in late November 1971. Using new jumbo-size insulated tank cars, this unit-train could carry 950,000 gallons of oil and was designed to operate on a 72-hour cycle, with delivery to Douglas Point every three days. Transit time was 24 hours each way for the 502 miles, with eight hours available at each end for loading and unloading.

ON A COLD JANUARY NIGHT IN 1955, CANADIAN NATIONAL RAILWAYS TRAIN 99 steamed and simmered in the yard at Niagara Falls, Ontario, ready for an early morning departure for Hamilton and Toronto. Jim Shaughnessy found engine Number 6076 and the train, and took the picture!

A CANADIAN NATIONAL RAILWAYS' IRON-ORE PELLET UNIT-TRAIN ARRIVES AT the Dominion Foundries & Steel (DOFASCO) smelter at Hamilton, Ontario, hauled by two 3200-series MLW Diesel units. Photo courtesy CNR.

AT THE MINE AT TEMAGAMI, ONTARIO, THE MASTS ATOP THE 100-TON ORE cars engage with the scroll to open the hatches automatically. The square notice on the sides of the ore cars direct their return to Temagami, when empty. Photo courtesy Canadian National Railways.

Another oil unit-train was placed in service between Gulf Oil Company's Montréal Refinery and the International Nickel Company at Sudbury, Ontario. This project planned for a 42-car train operating on a three-day cycle. In 1973, 70,000+ tons of oil were moved by these unit-trains.

A third oil unit-train was planned for late 1974 operation between Golden Eagle's refinery at St-Romauld, Québec - near Lévis - to the thermal generating station of Ontario Hydro near Bath, Ontario, some five miles west of Kingston. This was a large project, utilizing 52-car trains on a 48-hour cycle.

There are very particular reasons why the unit-train concept suits the "Bunker C" fuel oil traffic. Pipeline transport of this

heavy oil from Lévis/Montréal to Ontario destinations would involve the construction of a heated pipeline, since the oil does not flow readily below 130°F (55°C). Marine transport presented problems, due to the possibility of mid-winter freeze-up of the St. Lawrence Seaway or the Great Lakes. Ice-breakers could have been used, but this would have been expensive.

Large, insulated rail tank cars offered the advantage of not requiring heating at the point of delivery, since the hot oil from the refining process retained most of its heat during transport. A "rapid dump" system at the point of delivery facilitated quick unloading by dumping the contents of the tank car through an 8-inch valve directly into a giant pit connected to storage tanks holding 180,000 barrels of heavy oil. Returning to the refinery, these insulated tank cars were loaded through hatches in the top of each car.

Iron ore pellets move from Sherman Mine, north of North Bay, Ontario, to the DOFASCO smelter in Hamilton, Ontario, in specially designed 100-ton ore cars. Three sets of 57 cars each run back and forth on a 3-day cycle. There are 15 additional cars required for change-out purposes.

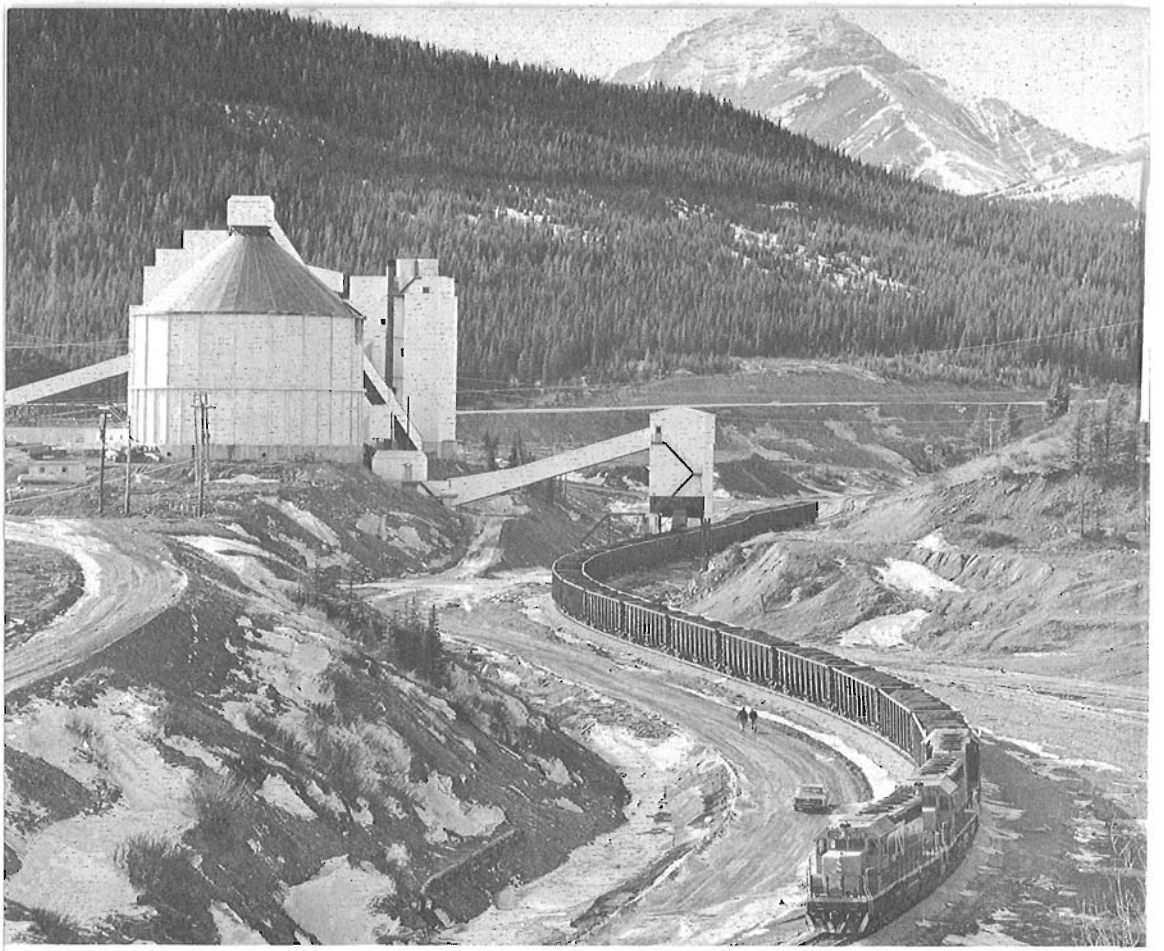
Loading at Sherman Mine requires about three minutes per car. Masts on the longitudinal roof-hatches, which are engaged by a scroll, automatically open the hatches as the cars reach the loading position. The pellets fall through chutes from the surge storage bins. The train can handle one day's output from the mine's concentrating and pellitizing facilities. Production at the mine is scheduled so that there is always a one-day reserve of pellets.

On arrival at Hamilton, the unit-train is run onto the unloading trestle and the diesel units are uncoupled. Six cars at a time are run over the blast-furnace bins and each takes 60 seconds to unload. Meanwhile, the diesel units have picked up the empties from the previous day, for the trip back to Sherman Mine. Loaded cars are unloaded by using a pneumatic wrench on the side-dump discharge doors, which allow the pellets to dump outside of the rails.

The following schedule for an iron ore pellets unit-train was worked out:

Day	Location		Time	Loaded/ Empty	Railway
1	North Bay, Ontario	LV	0001 EST	Empty	ONR
1	Sherman Mine	AR	0330 EST	Empty	ONR
1	Sherman Mine	LV	0630 EST	Loaded	ONR
1	North Bay, Ontario	AR	1000 EST	Loaded	ONR
1	North Bay, Ontario	LV	1100 EST	Loaded	CNR
1	Toronto Yard	AR	2030 EST	Loaded	CNR
1	Toronto Yard	LV	2330 EST	Loaded	CNR
2	DOFASCO-Hamilton	AR	0330 EST	Loaded	CNR
2	DOFASCO-Hamilton	LV	0500 EST	Empty	CNR
2	Toronto Yard	AR	0830 EST	Empty	CNR
2	Toronto Yard	LV	1330 EST	Empty	CNR
2	North Bay, Ontario	AR	2200 EST	Empty	CNR

Why all this detailed planning and specialized equipment? The answer is simple. The shipper, wanting to obtain the lowest possible freight rate over the longest possible time is willing to accept certain conditions and to agree to a number of particular terms specified in the contract. The terms and corresponding freight rates are then published by the Canadian Freight Association and ratified



IN THE SHADOW OF THE ROCKIES, CANADIAN NATIONAL'S COAL UNIT-TRAIN IS loading at the Cardinal River Coal Mine in western Alberta, prior to its long journey to the Pacific coast. Photo Canadian National Railways.

by the Canadian Transport Commission. Otherwise, the rate quoted might discriminate against other Canadian carriers who might feel that they could provide the same service at the same rate.

Obviously, the detailed arrangements essential to the establishment of a unit-train service are so specific that it would be very difficult, if not impossible, for another carrier to do the same job for the same rate per ton.

The Sherman Mine-Hamilton unit-train operation began in March 1968. During its first two years of operation, a near perfect record of performance was maintained. In the first year, one million gross tons of iron ore pellets were moved, with a good "on-time" performance. 94.8% of the empty-car trains arrived at Sherman Mine within the specified schedule. Similarly, 97.5% of the loaded trains were delivered to DOFASCO in Hamilton within the specified schedule. It all added up to reliability in performance and this was what the system was designed to provide.

From the chart which follows, the scope and diversity of Canadian National unit-train and solid-train operation can be appreciated. While these trains are more common in some provinces of Canada than others, there is hardly an area that does not profit from their operation. And the potential for unit-train operation in all of Canadian National's regions has only begun to be developed.

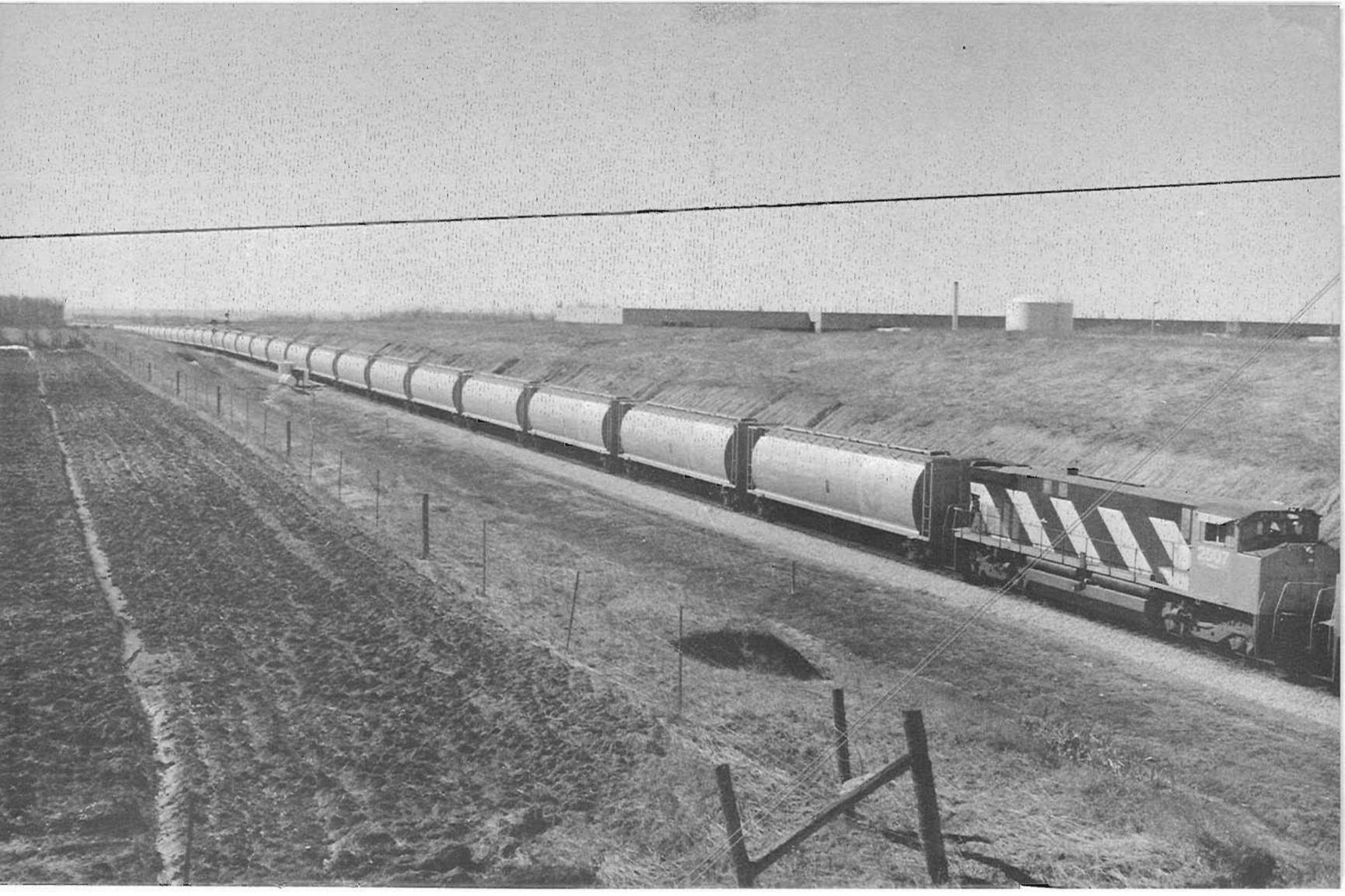
For the future, here are a few possibilities:

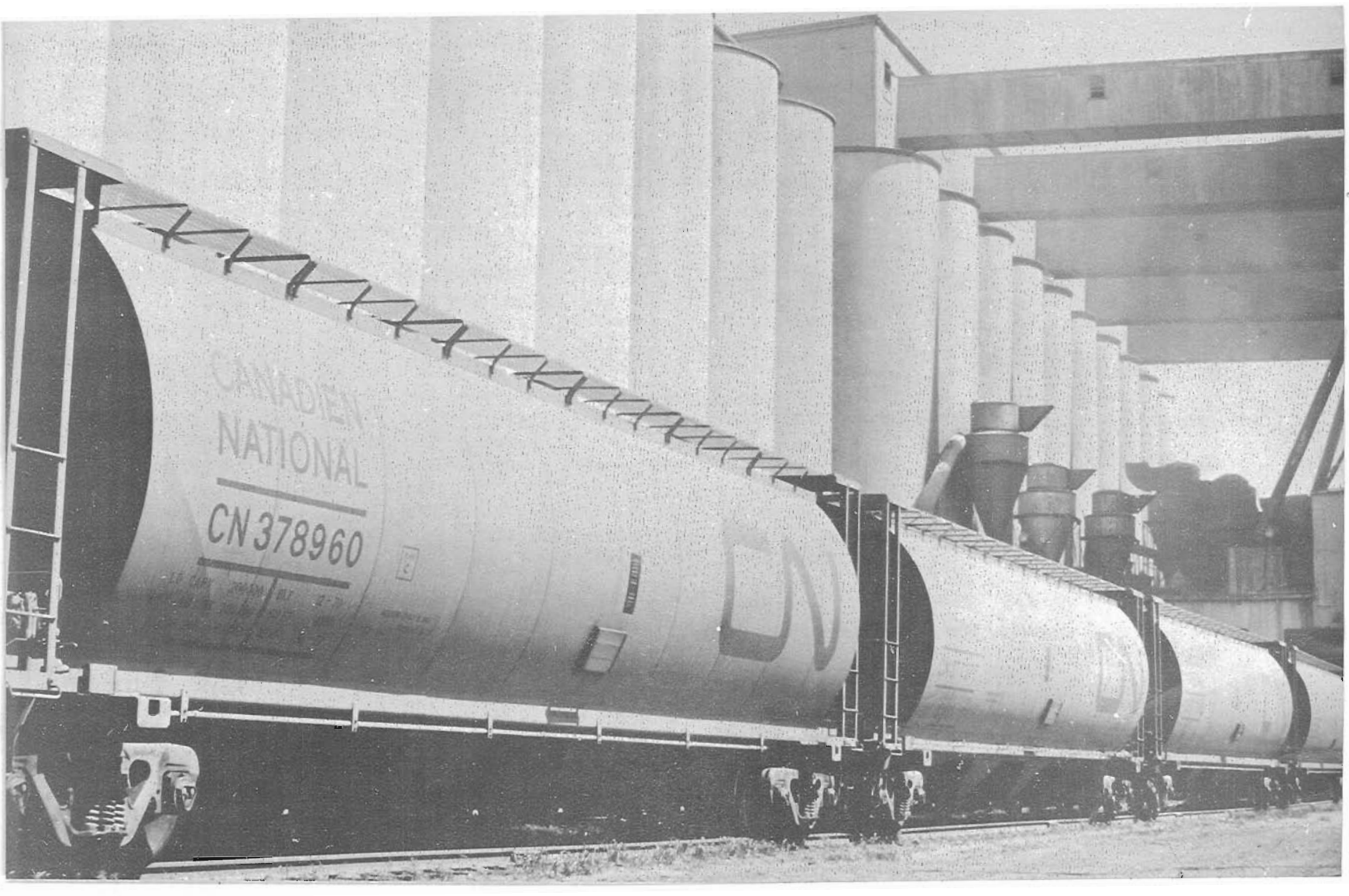
Québec	newsprint unit-trains;
Ontario	iron ore pellet unit-trains;
Manitoba, Saskatchewan	grain unit trains, prairie elevator to seaport;
Alberta	oil unit-trains, west to east;
British Columbia	coal unit-trains, Terrace to Prince Rupert, B.C.

FROM THE PRAIRIES OF THE WEST TO THE PORTS OF THE EAST: A CN GRAIN unit-train of Government of Canada bath-tub covered hoppers just outside Toronto, Ontario, in April 1974. Photo Canadian National Railways.

COVERED HOPPERS OF CANADIAN GRAIN COMPLETE THE FIRST PART OF THE TRansportation cycle from the western prairies to the eastern seaboard at the elevators at Thunder Bay, Ontario. Photo Canadian National.

AN 85-CAR POTASH UNIT-TRAIN ROLLS ACROSS THE PRAIRIE NEAR MELVILLE, Saskatchewan, on its thousand-mile-plus journey to tidewater at Vancouver, British Columbia. Photo courtesy Canadian National Railways.

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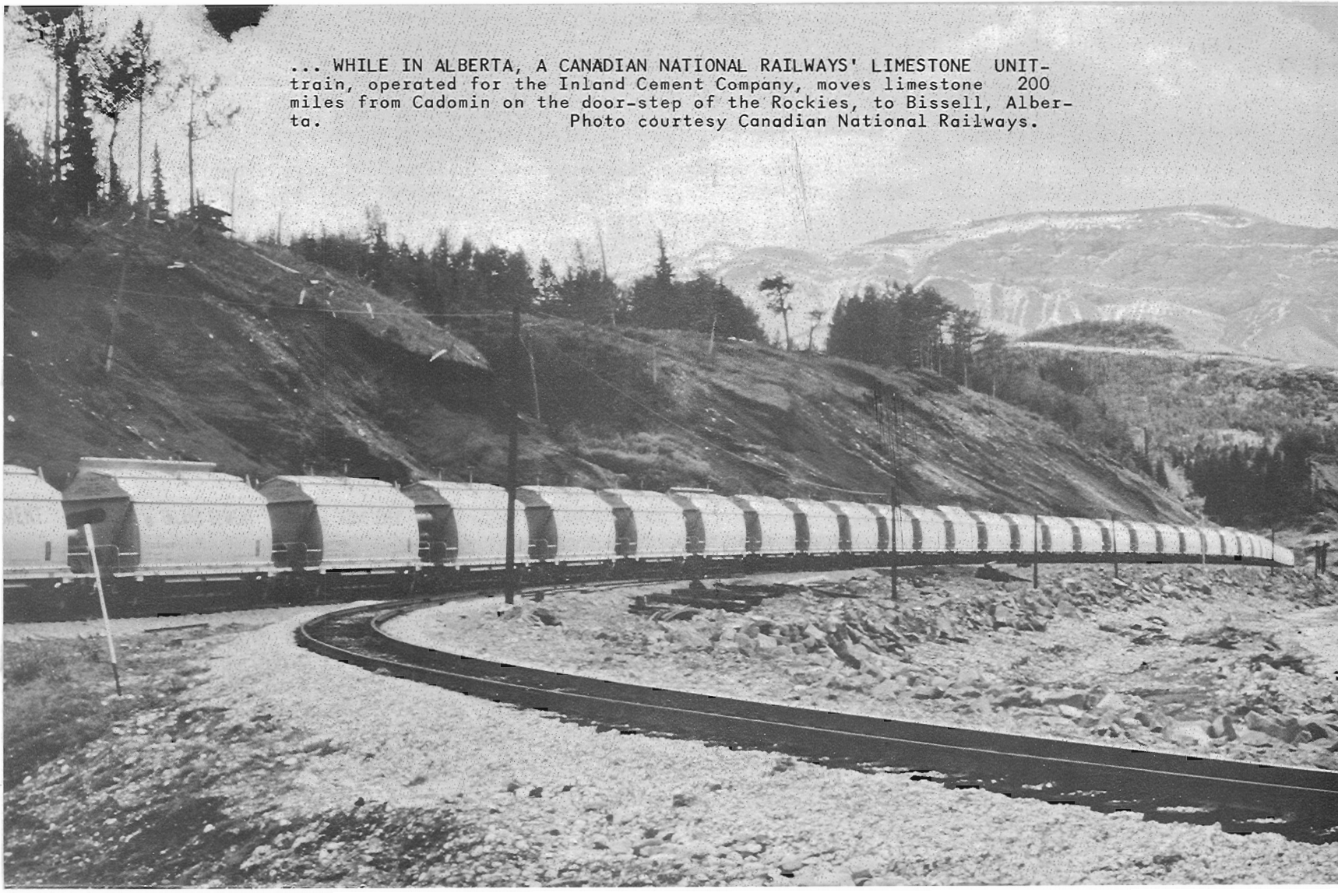
Train numbers	One-way miles	Origin	Terminus	Commodity	Cars/train	Trains/year	Shipper	1973 net tonnage
440-441	(CNR) 270 (ONR) 236	Temagami/Dane (North Bay) Ontario	Hamilton	Iron ore pellets	57	350	Sherman Mines	1,973,256
527-528	(CNR) 34	East Milford, N.S.	Wrights Cove, N.S.	Gypsum	50	482	National Gypsum	2,371,485
597-598	(CNR) 20	River Denys, N.S.	Point Tupper, N.S.	Gypsum	41	240 (summer)	Bestwall Gypsum	699,425
819-820	(CNR) 319	Bruce Lake, Ontario	Thunder Bay, Ontario	Iron ore pellets	64	336	STELCO	1,471,521
U829-U830	(CNR) 329	Tachereau, Québec	Fitzpatrick, Québec	Wood chips	125 (limit)	313	Can. Int'l. Paper	Varies: up to 0.85 mil.
U850-U851	(CNR) 71	Valleyfield, Québec	Massena, New York	Aluminum ingots	10	365	ALCOA (USA)	not defined
U852-U853	(CNR) 399 (ONR) 82	Copper Cliff via North Bay, Ontario	Tracy, Québec	Sulphuric acid	36-56	50	Can. Industries, Ltd.	169,864
U854-U855	(CNR) 420 (ONR) 243	Kidd, Ontario via North Bay, Ontario	Courtright, Ontario	Sulphuric acid	36-56	varies	Can. Industries, Ltd.	69,888(est.)
U856-U857	(CNR) 502	Montréal, Québec	Ferrier, Ontario	Bunker C oil	42-63	100	Imperial Oil Limited	124,396
U858-U859	(CNR) 841 (ONR) 325	Copper Cliff/Kidd, via North Bay, Ont.	Belledune, N.B.	Sulphuric acid	56	varies	Can. Industries, Ltd.	87,828
U860-U861	(CNR) 455	Montréal, Québec	Clara Belle (Sudbury) Ont.	Bunker C oil	42	44-68	Gulf Oil Canada	29,739
U862-	(CNR) 48 (CPR) 145	Wyman, Québec via Montréal	Contrecoeur, Québec	Iron ore pellets	35	52	Hilton Mines	31,000
U864-U865	(CNR) 396 613	Coteau, Québec	Atlantic Region (various points)	Ballast	74	24	Meloche Quarry	143,856
U866-U867	(CNR) 91	Uhthoff, Ontario	Millikens, Ontario	Crushed stone	50	78 (summer)	Limestone Quarries	331,500

U868-U869(CNR)	372	Sudbury, Ontario	Trenton, Ontario	Ballast	70	13	C. Fielding Company	73,710
U870-U871(CNR)	1,192	Thunder Bay, Ontario	Montréal/Québec Québec	Grain	80	21 (winter)	Can. Wheat Board	4-6 million bushels
U872-U873(CNR)	277	Marmora/Belleville Ontario	Fort Erie, Ontario	Iron ore pellets	48	60 (winter)	Marmoraton Mining	244,000(G)
(PC)	15							
U874-U875(CNR)	469	Goderich, Ontario	St. Lambert, Québec	Salt	50	24 (winter)	DOMTAR	54,707
U876-U877(CNR)	1,714	Thunder Bay, Ontario	(Saint John,N.B. (Halifax, N.S.	Grain	60-65	varies	Can. Wheat Board	(varies)
U878-U879(CNR)	1,087	Saskatoon, Saskatchewan	Vancouver, British Columbia	Potash	85	200	CANPOTEX	1.7 million
U882-U883(CNR)	1,320	Cutarm/Yarbo, Manitoba	Vancouver, British Columbia	Potash	85	200	Int. Minerals & Chemicals	1.7 million
U884-U885(CNR)	1,500	Winniandy, Alberta	Thunder Bay, Ontario	Coal	100	44	McIntyre-Porcupine	625,000
U890-U891(CNR)	690	Luscar, Alberta	Vancouver, British Columbia	Coal	65-85	150	Luscar Coal Mines	1,265,272
U892-U893(CNR)	675	Winniandy, Alberta	Vancouver, British Columbia	Coal	65-85	286	McIntyre-Porcupine	1,608,418
U894-U895(CNR)	200	Cadomin, Alberta	Bissell, Alberta	Limestone	47	100	Inland Cement Company	389,850(est)
U896-U897(CNR) U898-U899	885	Windfall/Kabob, Alberta	Vancouver, British Columbia	Dry sulphur	60-90	60	TRIMAC Sulphur	720,000(est)
Extra (CNR)	28	Limehouse, Ontario	Pinecrest/ Scarborough, Ont.	Crushed stone	50-55	130 (summer)	INDUSMIN	323,731
trains (CNR)	42							

CNR - Canadian National Railways
ONR - Ontario Northland Railway
CPR - CP RAIL
PC - Penn Central

(G) Gross tons: first quarter 1974.



... WHILE IN ALBERTA, A CANADIAN NATIONAL RAILWAYS' LIMESTONE UNIT-train, operated for the Inland Cement Company, moves limestone 200 miles from Cadomin on the door-step of the Rockies, to Bissell, Alberta. Photo courtesy Canadian National Railways.

N-Trak From Canmore !

Part II

Hal Reigger

Photos by the Author

In the first part of this article, a description of the national N-scale layout, called NTRAK, was given, together with some historical data on the two railroad operations which provided the ideas for the module. I explained that I would be discussing my own module which formed a part of the total layout. Let us now proceed to a consideration of the 4' by 8' module.

There are various aspects to modelling, all of which are taken into account when the model is the best that a person can make. Background, including historical and other data of the prototype, are important in achieving a "feel" for the model. There are the broad categories of mechanical construction, electrical, and operation to consider, in relation to the prototypes and space available to the modeller, along with budget and the modeller's ability as a craftsman. This is not a discussion of scratch-building or kit-bashing of motive power or rolling stock.

More or less in logical order, these are the things I had to think about in planning and building a model: 1. model size and scale; 2. prototype operation and era; 3. model operation; 4. geology of scenery, plus materials and methods for the model; 5. whether to make everything, or to draw from commercial kits; 6. finally - and to me the most important consideration - model aspects that must dominate to give the illusion of space.

Item 1 above was decided when I chose to be part of the NTRAK effort. In resolving Item 2, the decision was based on the facts that the two prototypes appealed to me and I had adequate information and photos for both of them. Moreover, I wanted to include some operating catenary in the model. Item 3 was mostly predetermined by the entire NTRAK operation of main line and collector tracks that had to coincide with modules on each side of mine, and the limited space left to me to do with as I chose. My resolution of this point was just a loop-over with about 4 feet of track and a grade of about 8%. Item 4 was basically determined by the geology of the prototype areas selected, and was mountainous. Scenery materials and construction methods were my own choice,which was to use natural materials as much as possible, in the knowledge that they would result in a more realistic-looking model.

Item 5: I chose to make everything myself, this being my nature, and I had a fine assortment of materials which I had been collecting for just such a project. The aspects of illusion, required by Item 6, would evolve as the model took shape. This point was to occupy the major portion of my planning and effort.

Except for the brief description necessary to form the frame for this article, I will let the pictures and captions convey the ideas. The following are some notes about the module, as the construction progressed:

Canmore Mines Limited uses a small General Electric locomotive fitted with a trolley-pole, slider type, and operating from overhead wire. Unless I used Z-scale, which was not practicable at the time, I could not follow the exact dimensions of the prototype in making a mine locomotive for the model.

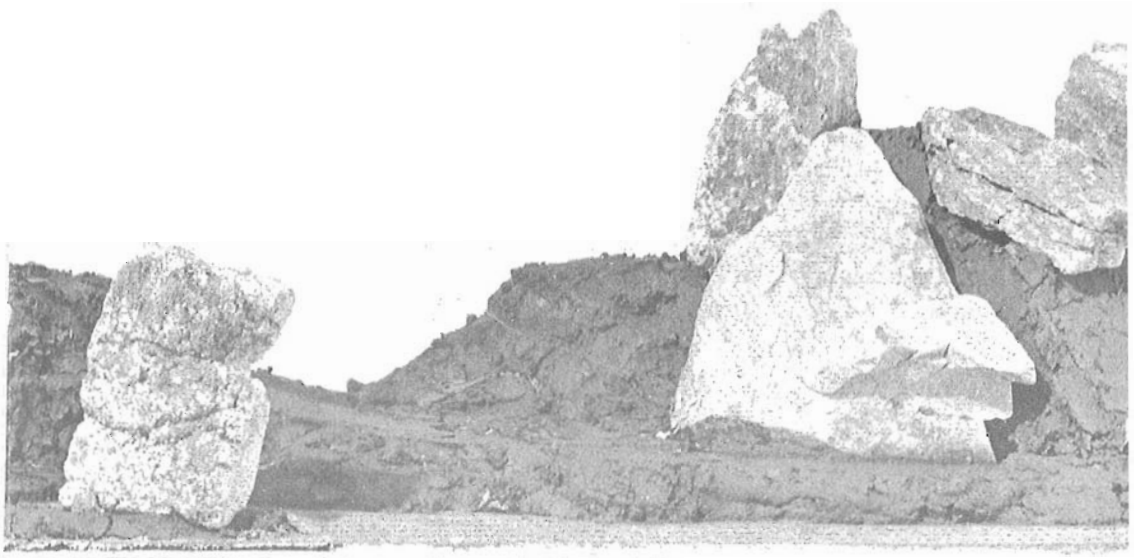
Instead, I chose to modify the body, but to design it in keeping with the feel of the prototype, using an N-scale motor and frame. The body had to be fabricated of styrene, necessarily, and included a micro-miniature bulb,with necessary diodes, for the headlight. Although the original trolley pole I made was fairly close to prototype in scale, I found later that a pantograph would result in more foolproof operation: at a showing, this loco would be run back and forth constantly and it was too awkward to turn the trolley pole each time. In tests, the trolley pole did operate beautifully, tracking perfectly under intentional wire variations of as much as $\frac{1}{4}$" each side of centre.

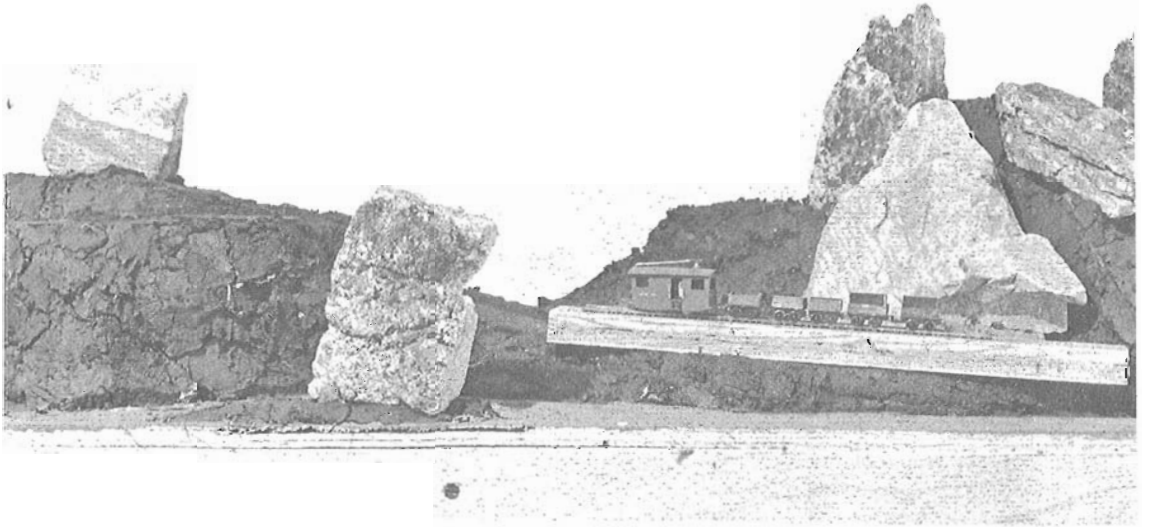
Following a simple sketch of the track plan, mountains and roadbed for the mine track were installed. Chunks of styrofoam formed the largest part of the "mountains", with a pre-cut, pre-formed piece of $\frac{1}{4}$" plywood for the mine track fitted into the terrain. This track was hand-laid with ties cut to scale from pieces of real railroad ties from the Milwaukee Road and using code 40 rail. The rail, in turn, was soldered to small spikes spaced about 2" apart for correct gauge and actually not attached to the ties. I was happy to find that the ties could be sanded level without any colour change, since they were already impregnated with creosote. The odour added reality to the model, as well.

Rocks, which formed the major geological features of the model, were real, coming from the actual mine location in Alberta. They could not have been more authentic. They were located on the model and tentatively glued. Care was taken to locate them in a manner which was logical geologically. After they were fixed to the model,dirt and clay from my own (California) property were mixed with white glue to make a stiff paste and applied over the styrofoam. This sort of mixture shrinks on drying and cracks appeared, necessitating a kind

→ AN EARLY STAGE OF CONSTRUCTION OF THE MODEL. STYROFOAM AND ROCKS HAVE been placed, earth added and provision made for the trestle. At this stage, it looks like some small stones set in dirt!

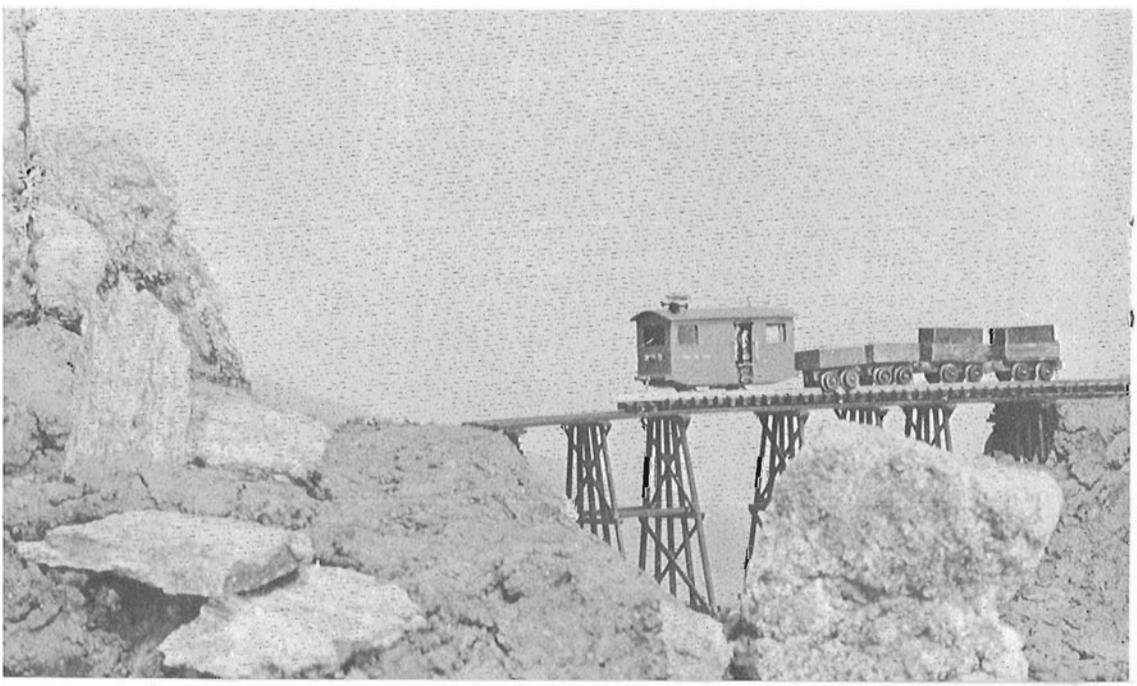
WHEN THE MODEL MINE TRAIN IS PLACED IN THE SETTING, IT IMMEDIATELY gives a scale to the layout. Rocks become cliffs and mountains, styrofoam-dirt mounts become hills. It is important to check the progress of the work every so often with a model, the prototype size of which are known and familiar to the modeller.





THE INSTALLATION OF THE TRESTLE, PLUS A COUPLE OF "TREES" AND THE PLYwood mountains immediately makes the scene real to the eye and acceptable to the mind. If the essential features are convincing at this point, the remainder of the work will be largely details. These details usually add to the effect, but occasionally one may detract and changes must be made, or the detail should be eliminated.

HEIGHT, A DERIVATIVE OF "VERTICAL SCENERY", IS A RESULT MAINLY OF THE angle of viewing. Unfortunately, the derailed coal car was not noticed until after the photograph was taken and the enlargement made! The position of the elements of the model is important, from both the operational and photographic points of view. You must imagine yourself as an N-scale viewer, looking at the scene from the ground-not from an aeroplane!



of re-work of the terrain to eliminate the cracks. The first results were encouraging; the resemblance of the material to actual earth was remarkable.

The building of the earth-rock part of the model proceeded simultaneously with the construction of various buildings and other railroad-related items, some not planned originally, others always in my mind. In other words, the development of the model was open and new ideas could be accepted as they arose. In the original plan, there was a trestle, 100 scale feet, that I modelled, using scraps from a local veneer plant, scale ties from real ties and poles made of Japanese barbecue skewers of bamboo! These resulted in an extremely strong, tough structure and, fortunately, were already in scale.

Two structures, a shed and connecting unit, were built from scale lumber and scraps from the above-mentioned veneer mill. The interesting and successful aspects of these structures were in the use of scrap metal, which I found at the site of an abandoned ore concentrating mill at Ymir, British Columbia. Cut properly, the metal made scale sheets for roofing. A modeller is always well advised to take note of rusty, weathered metal, which can be found almost anywhere: tin cans, metal boxes and pieces of galvanized roofing.

A third building resulted from the use of my talents as a professional potter. I made a coal transfer shed from clay from my own property, "imagineered", as they say and formed to fit the contour of a hill to achieve realism. It was made larger than scale to allow for about one-sixth shrinkage in drying and firing. Roofing to simulate corrugated aluminum was, in fact, corrugated aluminum foil sheets which I made and glued over beams of scale lumber.

Through a strange coincidence, while I was searching for some chemical that would tarnish or weather aluminum foil, I discovered that an application of "liver of sulphur" in solution, followed by a solution of copper sulphate, did a wonderful job of simulating weathering on aluminum. This chemical weathering was quickly sprayed with a dull fixative to preserve the effect obtained.

Poles for the mine railway's overhead wire were fabricated from 1/16" brass welding rods. Brackets, hangers and trolley wire came from .02", .015" and .010"-gauge phosphor-bronze wire. Electrical connection was made to only one end, because of the short length of the entire trolley wire. Only one rail was electrified, which permitted operation of the electric locomotive without the trolley and on two rails.

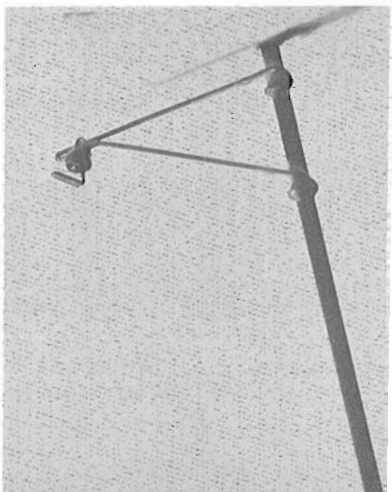
Other structures used on the model included two "tell-tales", made of scale brass channel, plus "cyclone" fencing. For both of these structures, I used some fine stainless steel screen scraps which I had collected at a now disused Crowsnest Pass (British Columbia) coal mine.

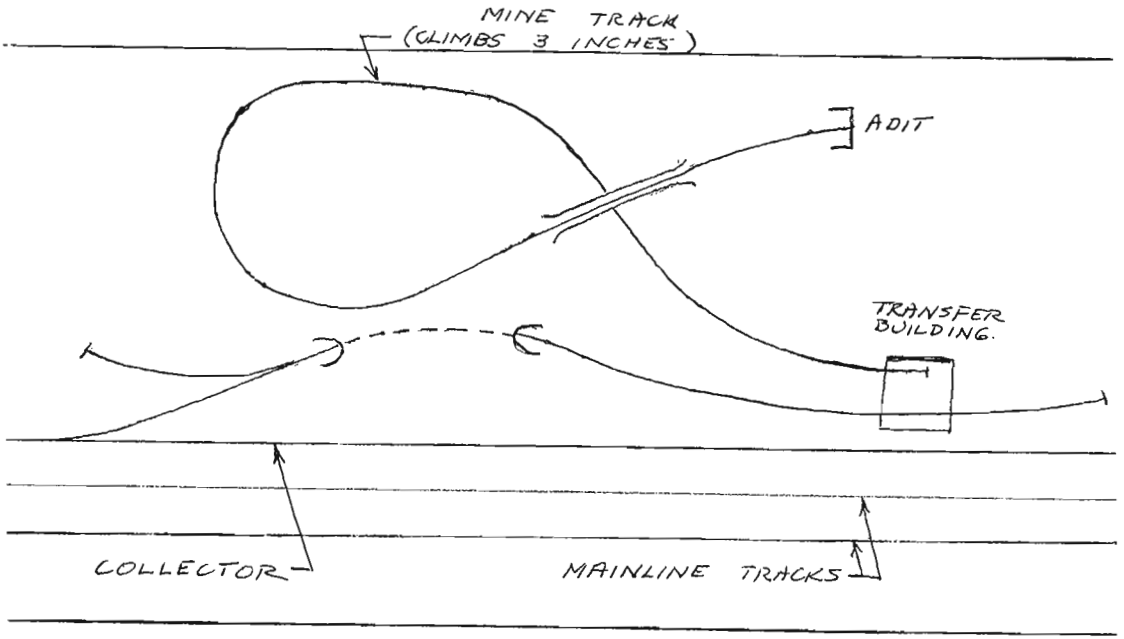
A stairway was constructed of scale lumber, scrap lumber and plane shavings. Two operating switch-stands were made of scale brass. The mine adit was built from scrap wood from an actual mine in British Columbia, plus some rusty metal for the roof, collected at the same location. A small power substation was made of scale plastic bricks, with an aluminum foil roof. One short tunnel was made from part of a mailing tube, which imitated the rounded inside form of a cement-lined tunnel.

The greatest visual impact of a model is a result of not only the thought given to the aspect of space illusion, but also from the

A 4-INCH ROCK HAS ASSUMED THE DIMENSION OF A 300-FOOT CLIFF! THIS detail photograph, taken before the catenary was installed, demonstrates dramatically the increased size of objects when the model is placed in the setting. The timber crib-work for the embankment was made from mine scrap wood found at Ymir, British Columbia. It is already beautifully weathered.

A DETAIL PHOTOGRAPH OF TROLLEY-POLE CONSTRUCTION. COMMON GLASS BEADS were used as insulators. Note the double-wire support at the end of the bracket, which facilitated the use of a wire-slider on the locomotive pole collector without snagging. Although these poles are not true to prototype, they have a realistic appearance and were not too difficult to make.





DANTON'S COAL COMPANY

NTRAK module.

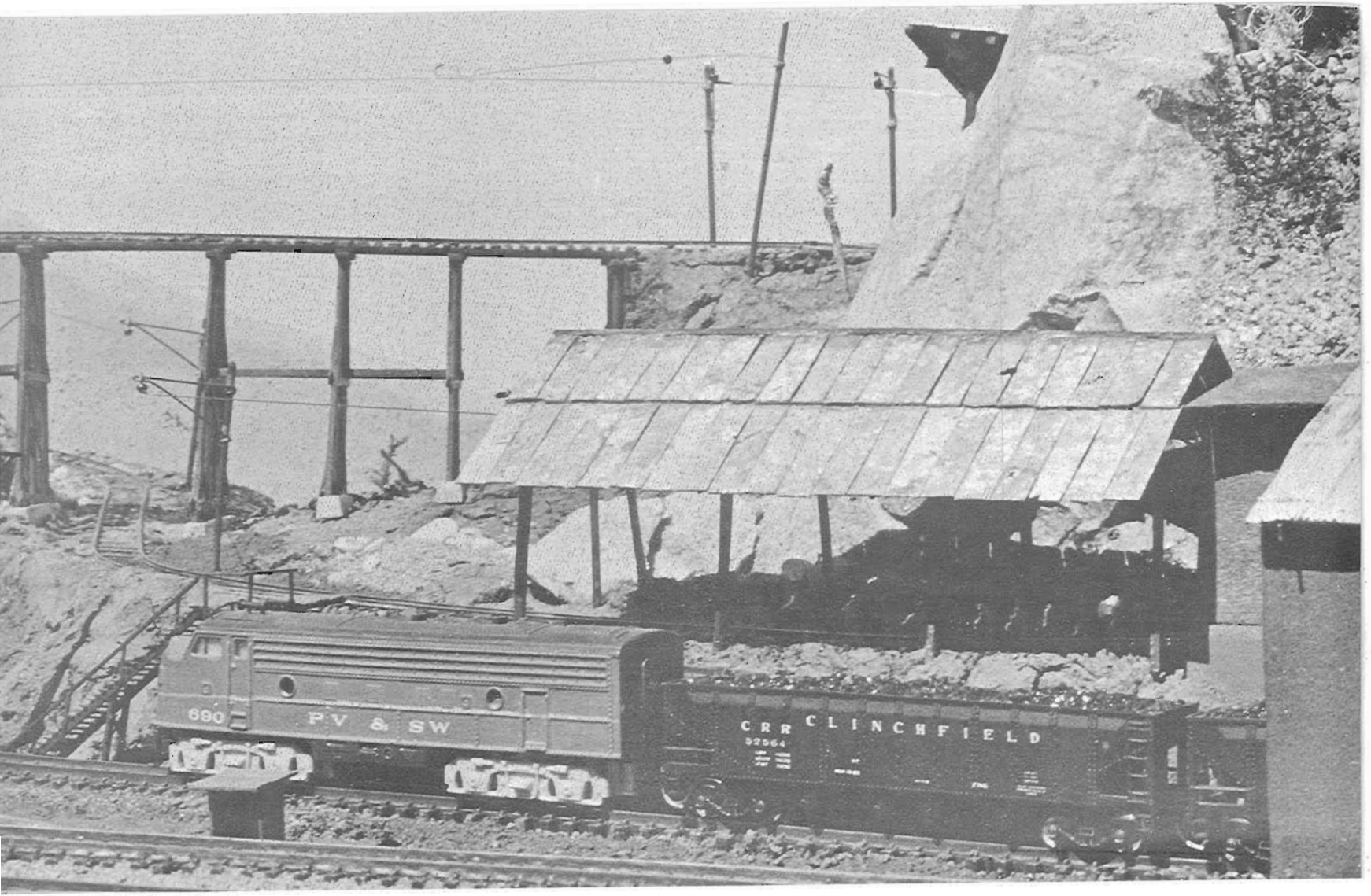
Hal Riegger.

careful placement of the "mountains", the rocks and the two plywood mountains, attached about $\frac{1}{4}$" away from the painted sky. Recognizing that hills, trees and other objects, painted onto a diorama background, become distorted if viewed from any angle other than "straight-on", I chose not to paint any scenery, but only sky, on the background. The results were very gratifying. The plywood mountains are convincing from any viewing angle.

Details of geography followed. Sand and fine gravel were judiciously used in places where they would logically be found in nature, allowed to slide naturally and were then spray-glued in place. This

A CLOSE-UP VIEW THROUGH THE TRESTLE SHOWS THE EFFECT OF DEPTH AND DISTANCE achieved, even though only $2\frac{1}{2}$ inches separate the locomotive from the mountain in the background. The photograph also shows the undesirable effect of the earth-latex paint mixture used on the plywood mountain. This granular surface was removed. Such textures are not seen at great distances. An improvement was immediately apparent.

IN THIS VIEW OF A PORTION OF THE FINISHED MODEL, WE SEE THE SHED WITH the connecting, covered passage to the end of the fired-clay transfer building. Note the roof of weathered, scrap zinc metal. The mine adit is just visible behind the rock at the right-hand side of the trestle. The catenary has been installed and the stairs are in place, both details that heighten the impression of realism.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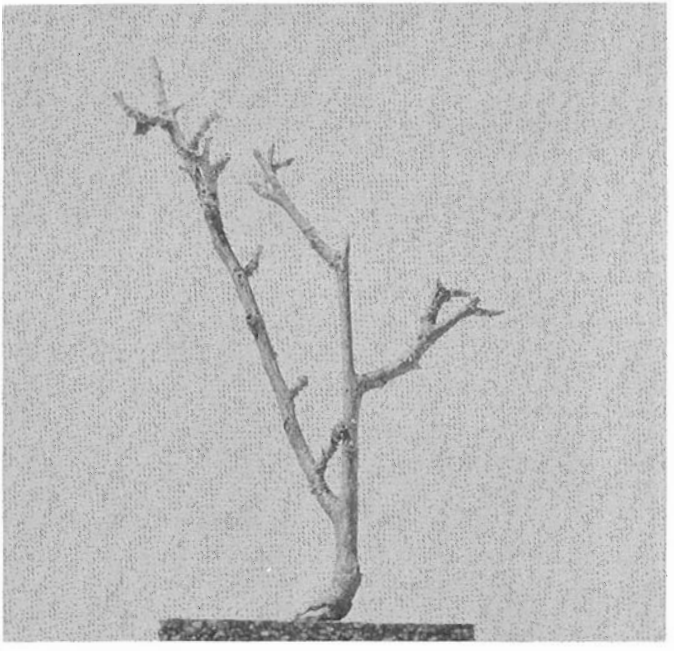
process had to be repeated in some places to build up a realistic rock-slide. Water in small quantities was trickled over a few places on the model to produce actual erosion of the earth and this, too, produced considerable realism.

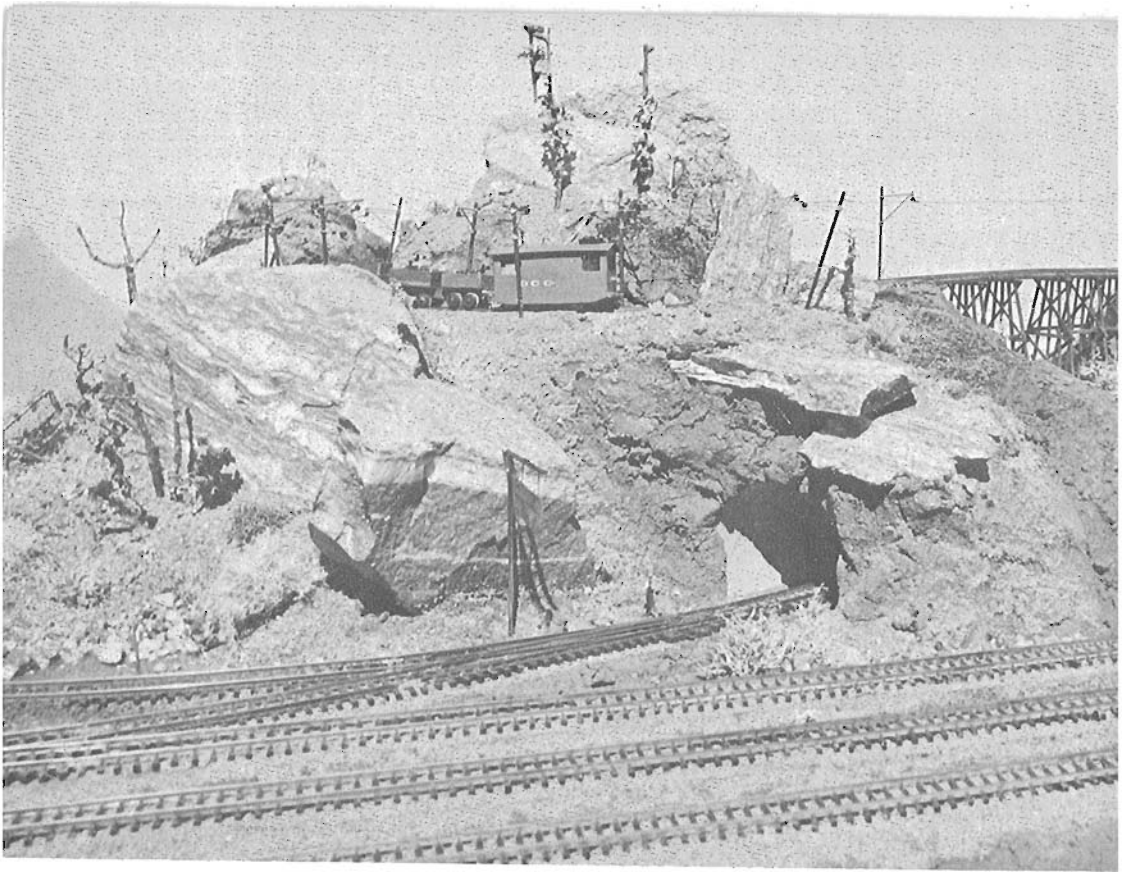
From twigs and moss gathered in the area around my home, I made about a dozen conifers. In addition to these, I used 2" and 3"-long lichen-covered twigs, which I had gathered in southeastern British Columbia and some smaller, differently-shaped, lichen-covered twigs found near my house. These provided the large trees for the model. They were placed as they would occur in nature, a requirement not to be overlooked if realism is to be achieved, for the helter-skelter arrangement of trees, too often seen on models, can and does detract from an otherwise admirable model layout.

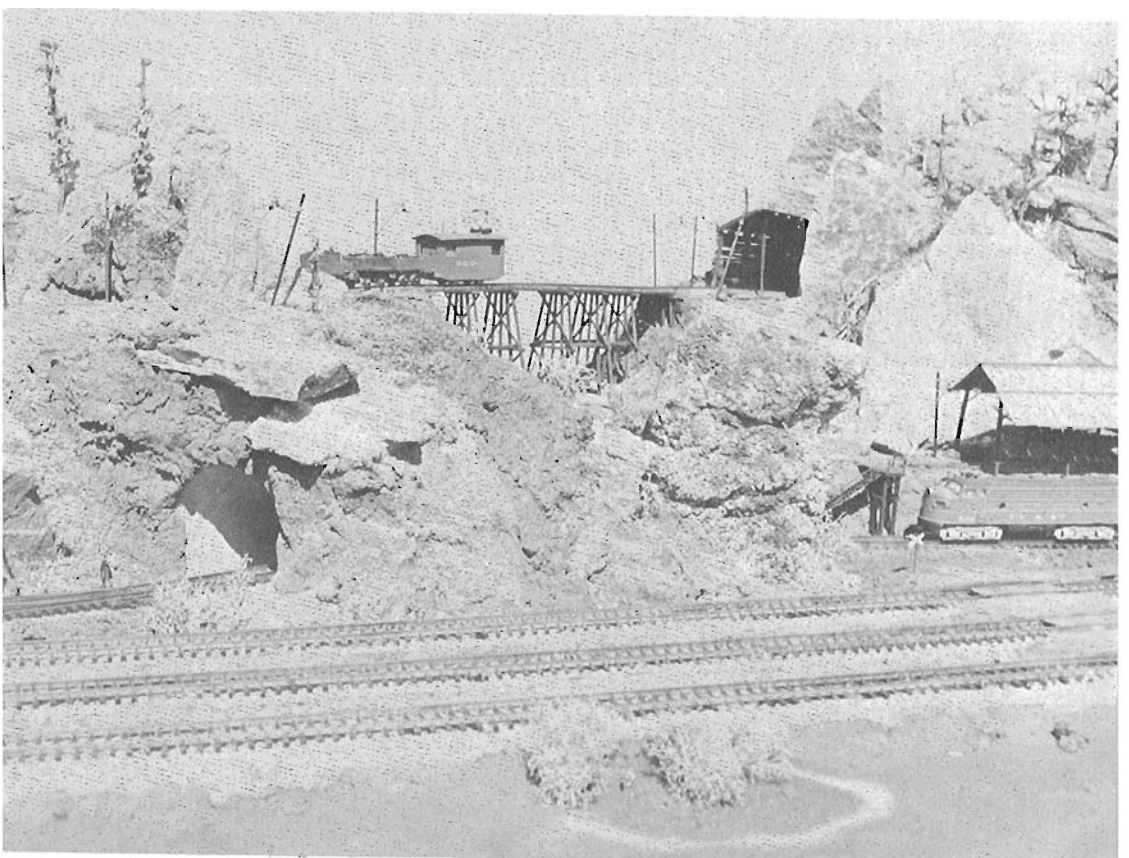
A TYPICAL TWIG, SELECTED FOR USE TO SIMULATE A TREE. ITS OVERALL height is two inches!

ON THE LEFT-HAND SIDE OF THE MODULE, THERE ARE THE TWO MAIN LINES and the collector track, with its connection to the mine spur. The mine track appears above on the side of the "mountain". Rocks and trees help to form a very realistic scene. The catenary suspension adds to the realism.

THE CENTRE OF THE MODULE CONTAINS SOME OF THE MORE IMPORTANT DETAILS of the layout. The rock in the right centre was chosen particularly for that position to create the illusion of depth and space. It has live, orange lichen growing on it and its physical form was ideal for small-scale use.







Lichens of four different types and from three different locations, all in their natural colour, formed the remainder of the smaller flora on the model. These, too, were placed with strict attention as to how and where they would be found growing in nature. The larger, brighter lichens were used towards the front of the model, while the smaller, more subdued specimens were placed to the rear. This helped to create the illusion of depth and space. Leaves, dead foliage and other small growth on the ground were simulated using redwood sawdust and dry, ground lichens.

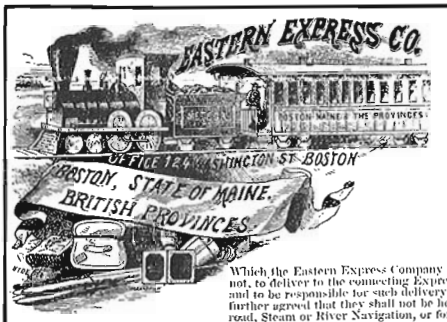
Some of the theories of fine-art painting were of great advantage in building the model, perhaps overweighing considerations of perspective. Since few man-made structures had been used, I found that I was faced with the creation of country scenery. Representing a mountainous terrain, the subject presented some advantages as well as some problems. The use of plywood mountains in the background has already been mentioned. The judicious placing of rocks and trees did help in creating the illusion of depth and distance, as did the location of the wooden trestle with a track running under it. I also discovered how the illusion was heightened by seeing a train disappear into a tunnel, run under a trestle or disappear out of sight momentarily behind a mountain, not to mention the essential factor of true scale, very slow, prototype speeds of operation.

Telephone poles and trees were diminished in size as they were placed further away from the viewer - and this within a range of only 14 inches! Of equal importance was the use of brighter, more contrasting colours in the foreground foliage and structures, as opposed to the more subdued, neutral colours in the background.

When the modeller approaches scenery modelling with the eye of an artist, constantly reviewing what he has created to determine whether or not he has achieved realism, he may find himself demolishing and rebuilding some of his work. Any review will surely mean repositioning various objects, rocks, hills, foliage, etc., as the model develops. Thus, the thing to keep in mind is that the model must be built in a way to allow for this eventuality, as the model grows and develops. Most of the pieces on the model should not be permanently fixed until the model is nearly completed and is considered to be the best that can be produced.

One "accessory" which I used in building the model, the results of which were truly delightful and encouraging, was photography. I took many photographs of prototype railroads, their associated structures and equipment, and I was able to find the correct scale to enlarge various signs and other items for the most satisfactory use on the model. The railroad crossing signs, the "Substation #23" and "Stop Engine" signs are made from photographs of the real signs on the prototype railroads.

The NTRAK module which I built reflects my current concern in model railroading that not enough attention is paid to making the scenery convincing, to achieve the essential impression of depth and space. To me, other characteristics are not difficult: such aspects as laying track, wiring, etc., are purely technical, requiring logic and an understanding of mechanics and electrical circuitry. But the creation of good model in any scale demands the eye of an artist, if not the artist himself; an eye that is imaginative, discerning, discriminating and one which sees and understands what it observes. In any representation of the real, be it a painting, a sculpture, a photograph, a drawing, a diorama or a model, acuity of observation is essential and its proper employment is nowhere more obvious than in a model in NTRAK.



March 1975

WAYBILLS

Which the Eastern Express Company agree to forward and deliver at destination, if within their route, and if not, to deliver to the connecting Express, Stage or other means of conveyance, at the most convenient point; and to be responsible for such delivery to the amount of Fifty Dollars only, unless value is stated above. It is further agreed that they shall not be held responsible for any loss occasioned by Fire, or the dangers of Railroad, Steam or River Navigation, or for the breakage of glass or other fragile goods.

FOR THE EASTERN EXPRESS COMPANY, M Cankeway

CANADA POST OPENED THE NEW NATIONAL POSTAL MUSEUM AT CONFEDERATION Heights, Ottawa, Canada, on September 29, 1974 and, to mark the occasion, published a series of coloured postcards portraying the various means of carrying the mail from 1887 to 1928.

The set of five postcards, as "day of issue" items, sold for about $ 1 and depicted the following transportation modes:

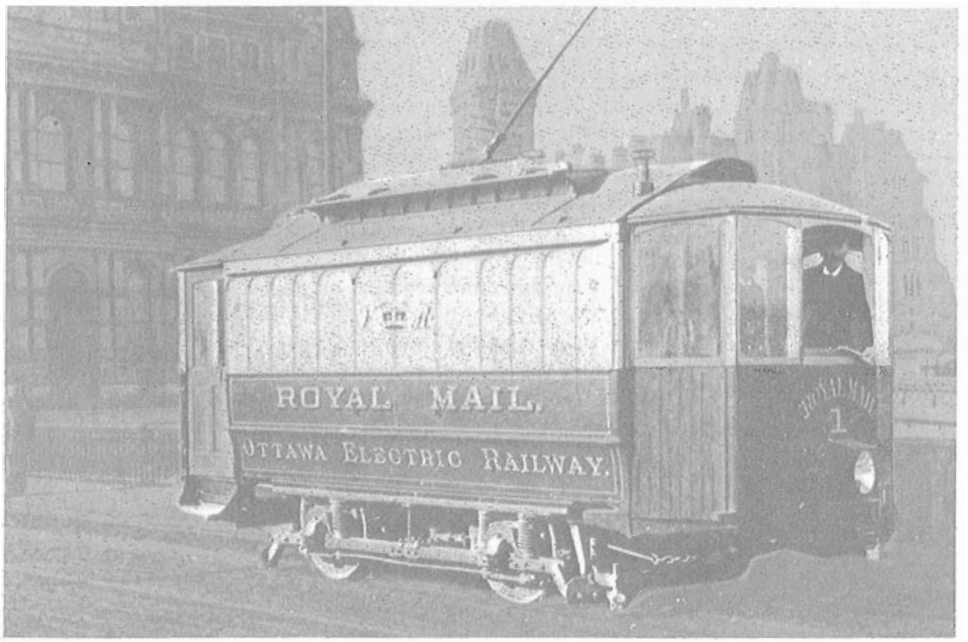
- a view of the "Cariboo Stage" at Clinton, British Columbia, in 1887: a stage-coach in the traditional style, drawn by a six-horse hitch. five greys and one chestnut;
- Ottawa Electric Railway "Royal Mail" car Number 1, in front of the main postoffice (Sapper's Bridge) in Ottawa, 1894;
- the interior of a railway postoffice car on the Grand Trunk Railway of Canada in 1909;
- a fragile-looking biplane which inaugurated air-mail service from Ottawa to Toronto, Ontario, on August 26/27, 1918;
- a one-horse, two-sled tandem lash-up crossing the frozen surface of a lake on the mail route at Semour Arm, British Columbia, in the winter of 1928.

The attention-getter for the railway enthusiast may be the interior picture of the Grand Trunk Railway mail car, but, in spite of the appeal of the Pintsch-gas, globular overhead lighting fixtures and white cotton sleeve-guards, there are not too many details which suggest a mail car of the turn-of-the-century.

What does catch the eye is the excellent colour postcard of Royal Mail car Number 1 of the Ottawa Electric Railway in 1894, reproduced herewith (regrettably) in black-and-white, with the permission of the National Postal Museum. The basis for the artist's rendering of this car in green, cream and gold, is the photograph in black-and-white (Number C-18684) of this car in the National Archives of Canada. This same photograph was used to illustrate the article "Right-of-Way for the Mail" by Mr. O.S.A.Lavallée in the January 1963 issue Number 140 of CANADIAN RAIL.

The information sheet for this postcard, supplied through the kindness of Mr. J.E.Kraemer, Manager, National Postal Museum, states that the origin and disposition of this car and its two sisters is not known for certain. Mr. Lavallée wrote that, about 1895, the Post Office Department, Government of Canada, contracted with the Ottawa Electric Railway Company to undertake the transportation of mail from the three railway stations in Ottawa to the central Post Office at Sapper's Bridge. The OER converted and electrified three former horse-cars and numbered them 1, 2 and 3. The accompanying photograph of car Number 1 reflects this conversion.

While Mr. Frank Mayrs, the artist who designed the series of commemorative postcards, determined that the original colour scheme of these cars was green to the belt-rail, with a cream upper portion and lettering in gold, Mr. Lavallée wrote that these converted cars were painted white and red, carried the Royal coat-of-arms and the inscription "Royal Mail", very prominently displayed on the sides and ends of the cars. These latter embellishments are visible in the photograph. Mr. Mayrs believes that this white and red colour scheme was adopted at a later date.



By 1906, wrote Mr. Lavallée, the requirements of this service had rendered obsolete these first three converted horse-cars. The Ottawa Electric Railway Company therefore decided to scrap the old converted cars and to purchase three new ones, specifically for the mail service, from the Ottawa Car Manufacturing Company of Ottawa. These were specially-designed, single-truck cars with closed platforms, monitor roofs and single, baggage-type doors centered in each side of the car, with flanking windows. The bodies were mounted on Taylor single trucks and were, apparently, double-ended with "walk-around" trolley poles. The new cars were numbered 423, 424 and 425 and were painted white or cream, with gold lettering and striping, outlined in black.

Although neither Mr. Lavallée nor Mr. Mayrs comment on the point, it is probable that these new cars also were painted with the Royal coat-of-arms and the designation "Royal Mail".

Number 424, said Mr. Lavallée, disappeared at an early date, its precise fate being unknown, while cars Numbers 423 and 425 were converted to work cars when their days of usefulness as "Royal Mail" cars came to an end in 1911. Mr. Kraemer notes that the OER's contract to carry the mail ran from November 9, 1894 to September 1, 1911, which dates establish the interval when special electric railway mail cars were in use in Ottawa. Needless to say, cars Numbers 423, 424 and

425 were displaced by the internal-combustion engine and rubber tyre as motor trucks took over the service after September 1911.

Mr. Lavallée wrote that Number 423's roof was altered from its original monitor type to a deck type, while Number 425's body was sold in 1957 to an unknown private individual.

What happened to Number 423? Well, in 1959, it was retired after participating in the farewell procession of streetcars which marked the end of nearly 89 years of tramway service in our Nation's capital city. The Canadian Railroad Historical Association soon thereafter made overtures to the City of Ottawa to acquire the car, but, at that time, it was thought that this car, together with several others, would form the nucleus of a streetcar museum or display in Ottawa.

In the spring of 1961, through the good offices of the then-Mayor, the Honorable Charlotte Whitton, Number 423 was donated by the City of Ottawa to the Canadian Railroad Historical Association for the Canadian Railway Museum. This unique car left Ottawa on November 26, travelling by flat-bed semitrailer down Highway 17, and arrived at the Canada Creosoting Company's plant at Delson, Québec, on Saturday, December 1, 1961.

It was a memorable occasion, not only because of the unique nature of this acquisition, but also because of the method by which it entered the Museum. There was, at that time, no entrance from St. Pierre Street in Saint Constant, Québec, for the Little St-Pierre River had yet to be bridged. It was therefore necessary to unload this precious acquisition in the yard of the Canada Creosoting Company onto the rails of the Canadian Pacific Railway's industrial siding, after which the members of the Association energetically but laboriously pushed ex-OER Number 423 all the way down to the switch for the Seaway Spur, then all the way north to the switch for the Canadian Railway Museum and - finally - all the way into the Museum and Building 1.

Number 423 was the first streetcar to be placed in the Museum.

IN LATE OCTOBER 1974, PAT WEBB OF LETHBRIDGE, ALBERTA REPORTED THAT CP RAIL sulphur trains originating at Gulf Oil and Shell Oil natural gas plants, south of Pincher (Creek) on the Crowsnest Subdivision, were run east to Coalhurst and north over the Aldersyde Subdivision to Eltham and Aldersyde and thence over the Macleod Sub to Calgary. At Calgary, the sulphur trains took the main line for Golden, Revelstoke, Kamlops and Coquitlam to Vancouver. The Crows Nest Pass line was very quiet, as a consequence, the coal unit-trains for Roberts Bank originating at Sparwood, some 20 miles west of the pass.

FROM JOHN WELSH OF DORVAL, QUEBEC, THIS MONTH.....

I'd rather drive an engine than
Be a little gentleman;
I'd rather go shunting and hooting
Than hunting and shooting.

Daniel Pettiward - A BOOK OF BRITAIN: compiled by John Hadfield.

IN NOVEMBER 1974, IT WAS REPORTED THAT AMTRAK HAD SIGNED AN AGREEment with the State of Michigan which enabled the introduction of the "Rainbow Express" passenger service from

Buffalo, New York to Detroit, Michigan, via Welland, St. Thomas and Windsor, Ontario. It was thought that the new passenger service might operate via Erie, PA, Cleveland and Toldeo, OHIO, but the States of Pennsylvania and Ohio were apparently not receptive to the proposal.

In fact, the new "Rainbow Express" service is an extension of the "Empire" service from New York to Buffalo. This service departs New York at 08:30 hours, arriving at Buffalo at 17:00 and at Detroit at 22:05 hours. In the eastward direction, departure from Detroit is at 07:45, arriving at Buffalo at 12:45 and New York City at 21:50 hours.

At the time of the announcement, it was not known whether or not passengers would be entrained or detrained at the station stops in Canada, but the three southern Ontario cities were printed in the first timetable for the new passenger service.

The first day of the new service was reported to be October 30, 1974.

S.S.Worthen.

THE EDITOR AND THE PUBLISHER OF "CANADIAN RAIL" WOULD LIKE TO THANK most sincerely all of the members of the Association who were throughtful enough to send Christmas cards and messages, expressing their satisfaction with the magazine during 1974 and their encouragement for 1975. These messages are very much appreciated. Any reasonable suggestions for changes and/or improvements in CANADIAN RAIL are always welcome, as are contributions to our publication.

Reader-members are reminded that the success of "Canadian Rail" depends largely on the quantity and variety of material received for publication and they are therefore encouraged to send to the Editor pictures, news items, reports and articles, which would be of interest to readers.

Our sincere thanks is due to those members who have contributed material for "Canadian Rail" in 1974.

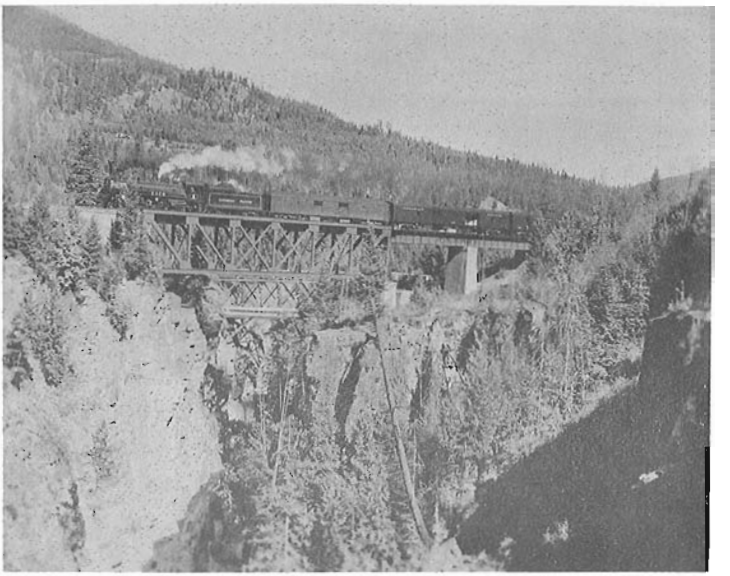
IN MID-DECEMBER 1974, THERE WERE TWO CHANGES IN FARES AND FARE-COLlecting procedures affecting citizens in the Montréal, Canada area, which were worthy of note.

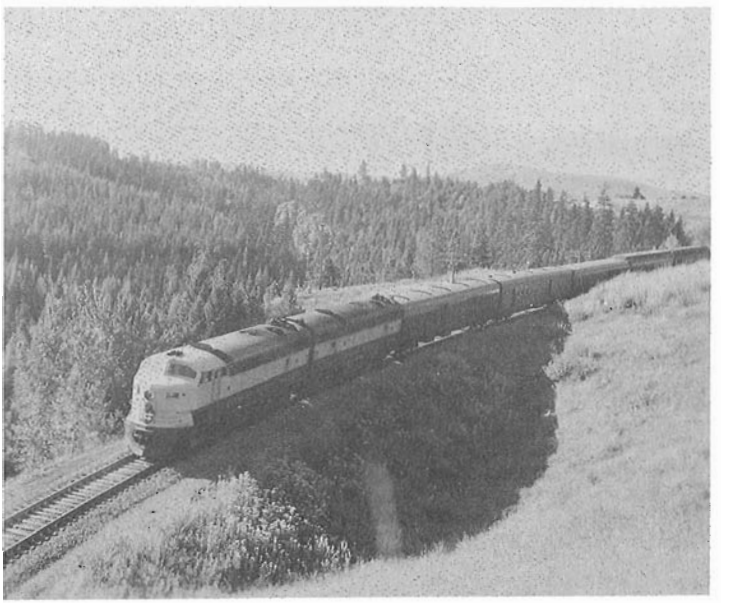
Canadian National Railways announced that new rates for commuter travel on its Montréal-Deux Montagnes and Montréal-St. Hilaire runs would come into force on January 1, 1975. These new rates, the second increase in four months, will result in an average increase of 22.2%. A 15% increase had been made on September 1, 1974. CN's Manager of Regional Passenger Marketing, Mr. Adrien Levasseur, said that, even with this increase, commuter operations in 1975 will show a record deficit of $ 4.41 million, about $ 430,000 more than the anticipated 1974 deficit.

Near the end of December, the Montréal Urban Community Transit Commission announced the introduction of the "exact fare" system on city bus lines. This meant that bus drivers would no longer be required to sell bus and METRO tickets and would not carry amounts of money necessary to make change. Passengers are now required either to deposit a ticket or a cash fare of 35¢. Should he not have the 35¢ in change, the passenger must deposit a larger amount of money from the change in his pocket, whereupon the driver issues a receipt for the overpayment, which the passenger can use to claim the appropriate refund from the MUCTC offices.

Books of bus and METRO tickets may be purchased from the ticket booths in the METRO or from designated dealers, such as tobacco shops and news-stands.

CONTRASTS NEAR CRESTON, BRITISH COLUMBIA, ON SEPTEMBER 21, 1953, ARE thoughtfully provided by Mr. W.R.McGee, our member in Livingston,Montana, U.S.A. Canadian Pacific Railway engine Number 2378 heads Train 67 in the first picture, crossing Goat River canyon, while the contrast was provided on the same day by CPR engine Number 4055, an easily recognizable FM-CLC product on Train 12, the "Kettle Valley Express", bound for Cranbrook, Crows Nest, Lethbridge and Medicine Hat, Alberta, with a three-hour connection with "The Dominion", eastbound to Sudbury and Montréal.





READER JOHN A. MACINTOSH OF GARDEN CITY, NEW YORK, WAS TAKEN ON HIS first train-ride at the (very) tender age of two months by his mother. The train was the Dominion Atlantic Railway's "Bluenose Limited" between Yarmouth and Windsor, Nova Scotia. This early experience enabled Mr. MacIntosh to look at Carl Sturner's picture on page 318 of the October 1974 issue Number 273 of CANADIAN RAIL and to state unequivocally that the location was (and is) Windsor, Nova Scotia, not Windsor Junction, there being an intervening distance of 31.6 miles. Moreover, Mr. MacIntosh points out, the train is not headed for Truro, unless it intends to back up for 56.9 miles!

The train, writes Mr. MacIntosh, is stopped in front of the "new" station at Windsor, facing west toward the causeway over the Avon River and the main line to Kentville. It is probably mixed Train 22, which came off the Truro Sub earlier in the day and is being forwarded to Kentville as an extra, after the crew had worked the Windsor yard, beyond the bridge in the background.

Mr. MacIntosh suspects that the freight is waiting for a meet with Train 2, the RDC "Dayliner", or possibly 4th. class freight Number 24 from Kentville.

Mr. MacIntosh likes the DAR. His HO-gauge reproduction is called the Diminutive Atlantic Railway - Route of the "Flying Bluenose".

THE JANUARY 1950 ISSUE OF THE ASSOCIATION'S "NEWS REPORT" (EDITOR: E. Allan Toohey; Publisher: R.J.Joedicke) reported that the through passenger service from Montréal to Boston, Massachusetts, USA, operated jointly by the Canadian Pacific Railway and the Boston & Maine Railroad, had been dieselized on Friday, December 2, when diesel locomotive Number 1800 of the CPR took Train 212, the "Alouette" to Farnham, Québec. Regular service with diesel-electric locomotives began on Thursday, December 15, 1949, when CPR E-8 Number 1800 took Train 212 to Boston, while Train 211 arrived from Boston in charge of B&M E-6 Number 3819. Trains 213-214, the "Newport Local" were handled by CPR Number 8404, class DRS-15a.

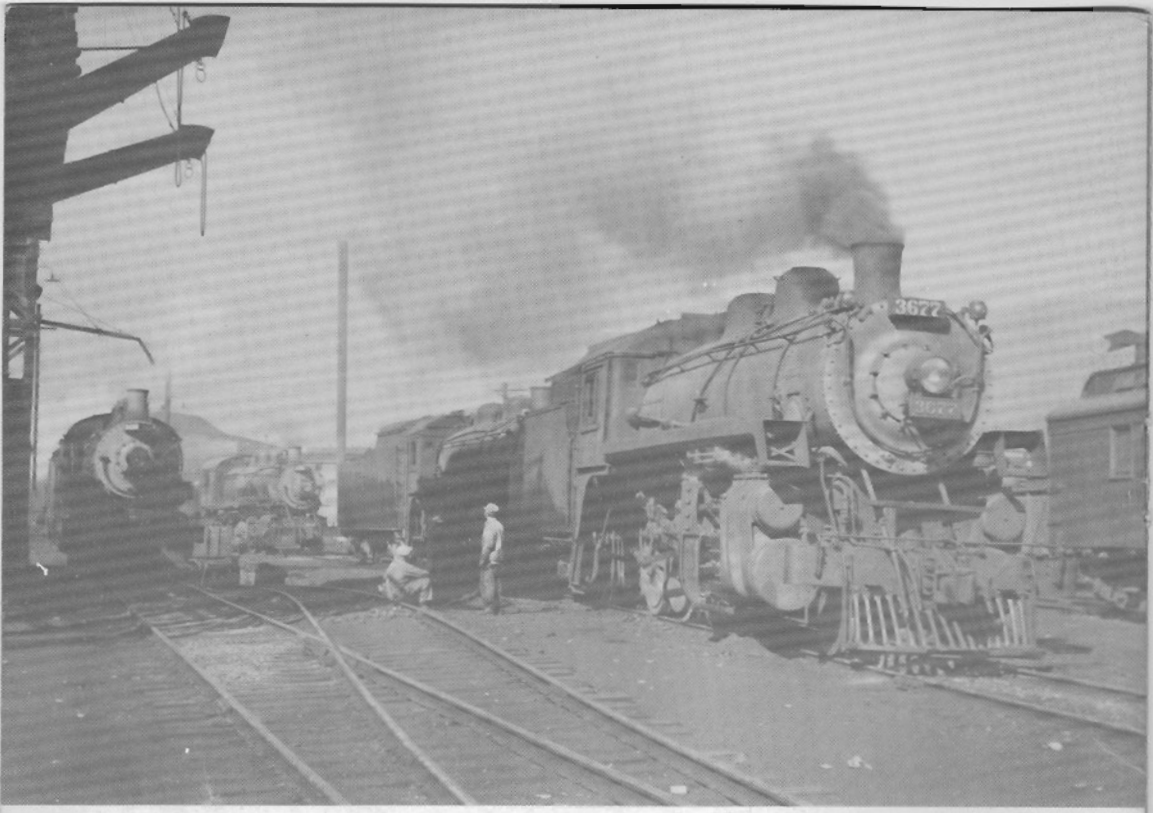
Our member Rod Peterson of Baltimore, MD, USA, sends us three pictures to remind us of this important transition. In the first of the photographs, CPR engine Number 1802 (EMD E-8), rolls Train 212 south out of Woodsville, New Hampshire, past the B&M engine terminal on April 21, 1951.

In the second picture, MLW FA-1 and FB-1 Numbers 4007 and 4403 rumble across the switches just north of the junction with the B&M at Wells River, Vermont (just across the Connecticut River from Woodsville, New Hampshire) on April 21, 1951.

The last photograph shows CPR engine Number 8403 on the southbound wayfreight at St. Johnsbury, Vermont, on April 21, 1951. Number 8403 was one of five 1500 hp ALCO RS 2 units (Numbers 8400-8404) built in Schenectady, NY. Number 8404 made its first trip from Montréal to Newport, Vermont, on Train 214 of September 15, 1949. In Mr. Peterson's picture of Number 8403, 0-6-0 steam locomotive Number 27 of the St. Johnsbury & Lake Champlain Railroad can be seen switching in the background.

Mr. Peterson's kind cooperation in sending in these photographs is very much appreciated.

BEFORE THE DAYS OF "TRAINMASTERS" AND "C-LINERS", THE READY TRACK AND lead to the coal chute at Nelson, British Columbia, could exhibit a considerable variety of steam power. Jim Hope photographed Canadian Pacific Railway's engines Numbers 3458 and 3456, 2-8-0s, 5207, a mikado and 3677, another consolidation. All this on August 22, 1948.



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