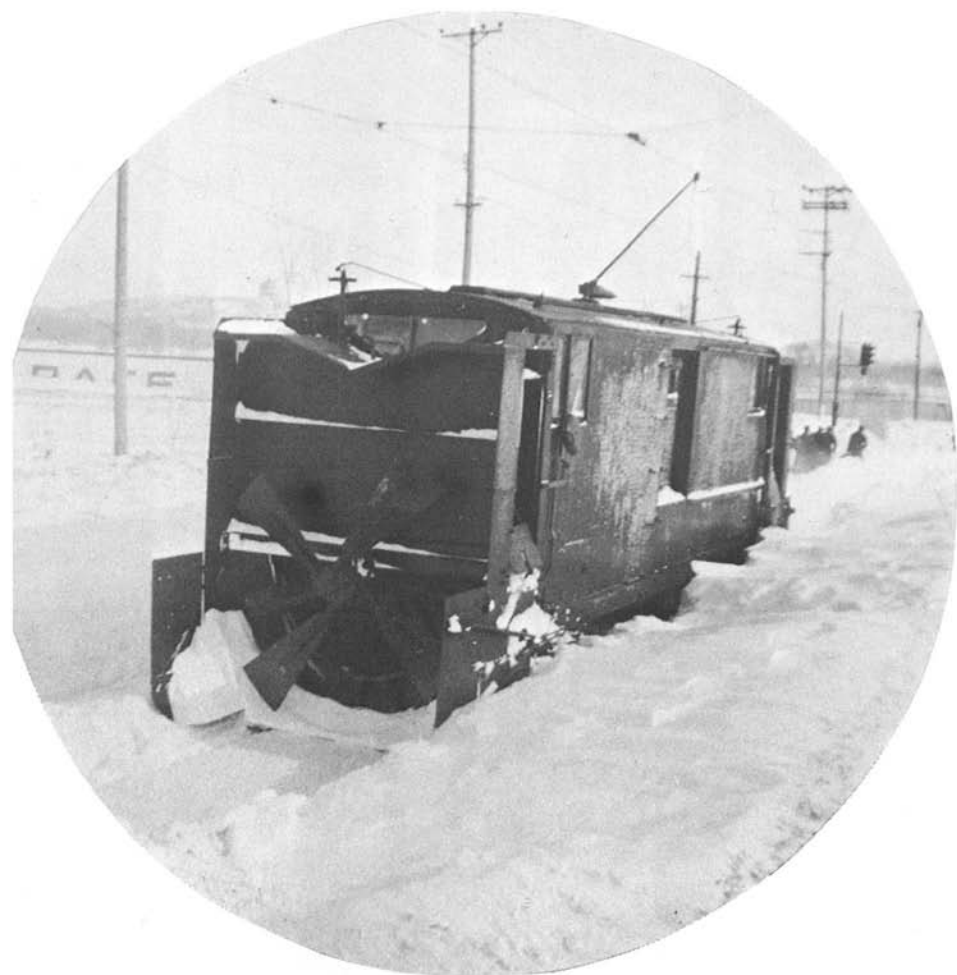
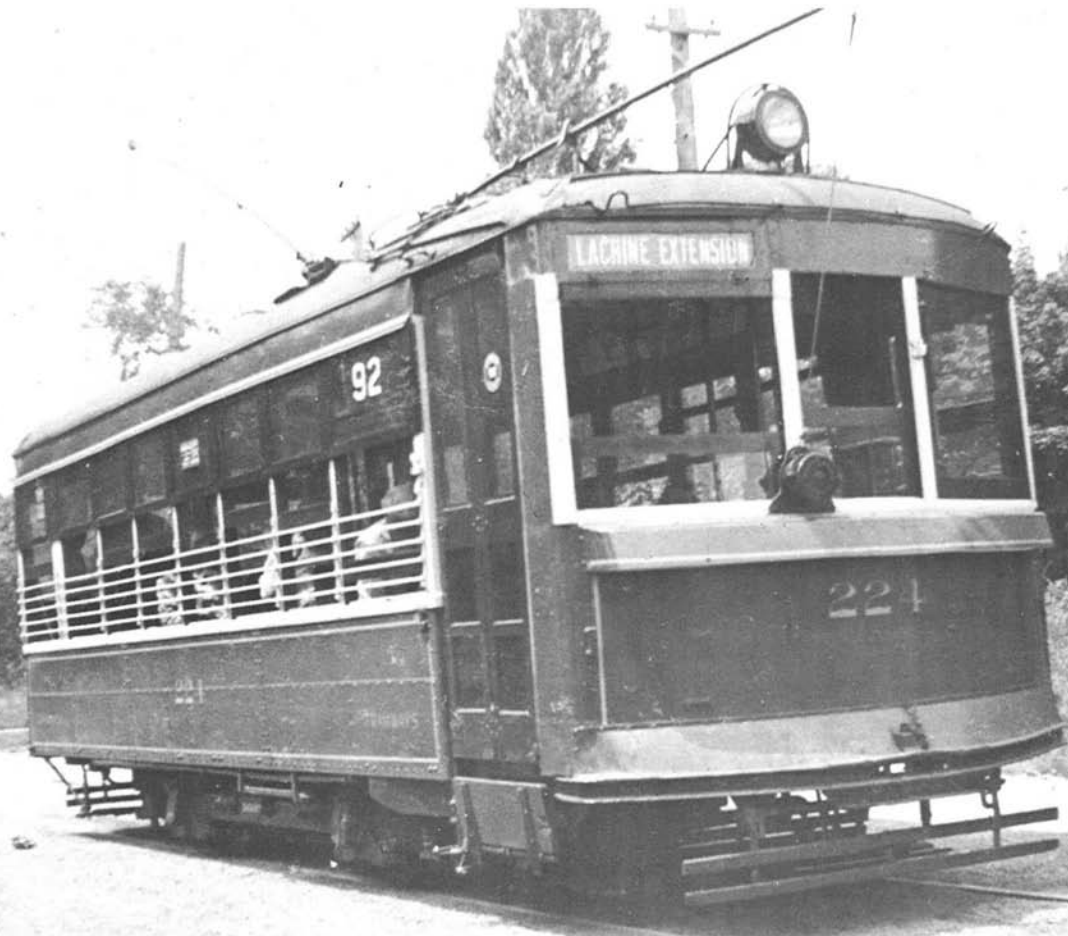


Canadian Rail

March
1967

Number 186







Crewless Passenger Service

Not to be outdone by the automated Expo Express, CN capped its always dynamic passenger-services-innovations programme by recently operating R.D.C. shuttle service from Windsor, Quebec to Brompton and return, without a driver nor a train crew. Despite fairly successful crewless operation, CN maintains it does not contemplate further such service for the time being.

The unanticipated breakthrough in railway technology occurred on the afternoon of February 3 when the regular Montreal-to-Sherbrooke Railiner, manned by a regular crew, stopped at a level crossing near Windsor, after disputing right-of-way with a propane truck. The train crew leaped off to give medical aid to the truck driver. The R.D.C. was parked on an upgrade and -- a result of the collision -- had inoperative airbrakes. Possibly taking its title of self-propelled car a little too literally, the R.D.C. began backing up -- crewless. The brakeman lunged for the car but missed.

Faster and faster went the history-making Budd, until it was quite out of sight of its crew. The passengers on board, with the exception of an elderly couple up front, were unaware of anything unusual. The crewless Railiner picked up momentum sufficient to overcome the minor opposing upgrades, until arrival at Brompton, eight miles from its starting point. There, it encountered a steep opposing grade, stopped briefly, then reversed direction.

Meanwhile, the Budd car crew, literally left behind by progress, had decided that this revolutionary development must be arrested. Thus, they had commandeered a yard engine and were off in search of their Budd. The shuttle Budd now self-propelling itself back toward Windsor, had retraced five of its eight errant miles when it encountered the pursuing yard engine. The elderly couple, aware of the fast-developing cornfield meet, abandoned ship and were luckily uninjured. Also luckily, the yard engine and the R.D.C. had a token cornfield -- very gentle. At this point, the experiment was declared complete.

CN Officials are coyly denying any prior knowledge that this test would be made, and will not, of course, acknowledge that further such tests might occur. Equally uncertain is a possible implementation date for regular crewless passenger service -- especially between Windsor and Brompton, Quebec.

* * * * *

QUARTER-CENTENNARY: Twenty five years ago, Montreal Tramways cars were shuttling back and forth between 44th Avenue and 56th Avenue, Lachine, on the M.T.C. route 92, LACHINE EXTENSION. The route required a double-end tram, and equipment usually assigned was one of the 2001 or 2600 class units. On occasion, however, one of the few remaining single-truck Birney cars was operated. The photo on the adjacent page was taken during the early summer of 1942, and shows Birney 224 at the Dixie end of the short shuttle.

Champlain & St. Lawrence Railroad

Their Snow Winter Service

S. S. WORTHEN

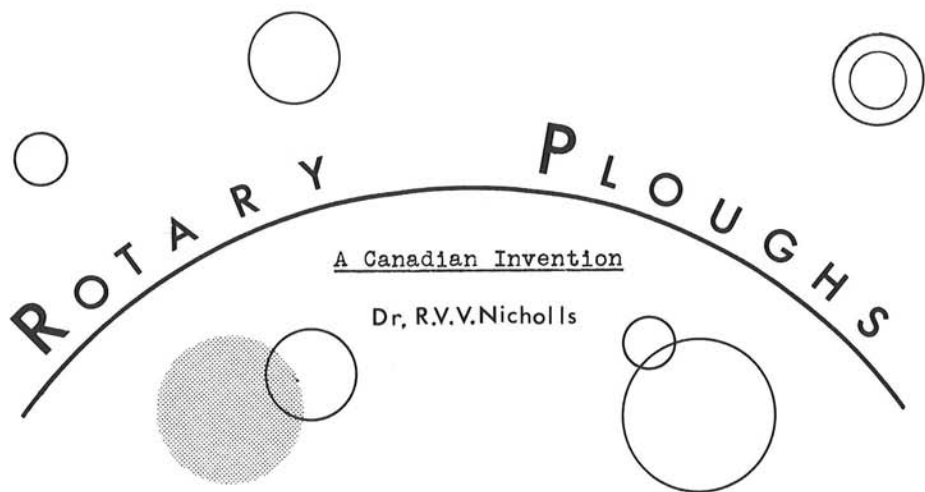
Newspaper announcements to be found in the autumn editions of 1836 or 1837 Montreal journals, state bluntly that the Champlain and St. Lawrence Railroad would cease operation for the winter on a certain day, and infer that suitable accommodation for winter-time travellers can be found on appropriate winter stage coaches, -- that is to say, sleighs. At a slightly later date, the Champlain and St. Lawrence Railroad was kept running during the winter months only with the greatest difficulty.

It may be safely assumed that the same situation prevailed throughout the Eighteen Forties. When the country traversed by a railway was comparatively flat, the winter wind could be depended upon to sweep the snow off the right-of-way; however, shallow cuttings and stretches of the line through thick woods could not and did allow the snow to accumulate.

While it was the duty of the sectionmen to keep the line clear for about two to three hundred yards on each side of a station, this was for the particular purpose of allowing the train to start after it had stopped to discharge its passengers and merchandise. Light wooden ploughs or scoops were generally used by the sectionmen with the snow being removed a short distance and dumped beside the track in any appropriate gully. At the time, the engineer had to depend on a much more primitive device to remove the snow from the rail. Two large brooms, made of birch branches split or peeled in narrow strips about 1 inch wide and a quarter of an inch thick and bound about a three inch stick as a handle, were tacked to the buffer beam of the engine just ahead of the pilot truck wheels. Obviously, such a rudimentary arrangement was exposed to immediate improvement.

By 1851, the year the Champlain and St. Lawrence was extended to Rouses Point, continuous year-round operation was considered essential. The equivalent of calling out the "plow extra", was to station two men on each side of the engine buffer beam. These hardy souls were provided with longhandled shovels, about eight feet long (actually), which they allowed to ride lightly along the tops of the rails. The shovel blades were about ten inches by eight inches and were fully three-quarters of an inch thick. They were heavy, and how they were allowed to "skim" along the rail-head was puzzling. In addition, the blade had a piece cut out of the lower corner with a turned-up lip so that when the shovel rested on the rail it could go down about three inches, thus keeping clear of the ties and, at the same time, passing over the rail joints. The continuous cold, the weight of the shovel, and the frequent necessity of raising the shovel to clear switch points made this job an enviable one. The consequences of not raising the shovel at the required point can well be imagined. Fortunately this arrangement lasted but a short time.

Around 1860, the railway dipped into its slush fund and bought small iron snow-ploughs which were bolted over the pilots of the engines. These were fitted with scrapers or flangers which could be raised or lowered by means of a lever in the cab. Later, when the Grand Trunk assumed operation of the line, a wedge-plough with sidewings was used. This vastly improved railway snow removal but snow became even less an enemy of railroading with the introduction of



In 1869 a Canadian patent was granted to J. W. Elliott, a Toronto, Ontario, dentist, for his invention of a "compound revolving snow shovel". On May 4, 1870, the same man obtained a patent for "An Improvement on a Machine for Removing Snow from Railway tracks". From this primitive machine evolved the rotary snow plough, to be used with spectacular success on many of the world's railways. Its novel feature was a large wheel with four flat spokes, placed edge-on, rotating within a casing on a shaft in line with the track. A "window" was placed in the casing near the top. The device was to be mounted, with its steam engine, on a railway car. The intention was that, when it was driven against a drift on the line, the knife-edges of the casing and spokes would cut the snow, and the rotating wheel would fling it to the side through the "window" by centrifugal force. It is not known whether a prototype of the Elliott "shovel" was ever built and tested. However, though crude it evidently included the principal element of the modern "rotary".

About 1883, Orange Jull of Orangeville, Ont., modified the Elliott Plough by placing a knife-wheel (Fig. 1) in front of the shovel-wheel (Fig. 2). To the former were attached four heavy-teel knives; within the latter were incorporated twelve shovels or vanes, or partitions). The knife-wheel was mounted on a solid shaft and the shovel-wheel on a hollow shaft enclosing the other. They were driven in opposite directions by two powerful one-cylinder steam engines, operating through bevel gears, at 200 to 300 r.p.m. (Fig. 3). Plough, engines, boiler, water-tank and coal-bunker were intended to be mounted on a car frame. He was granted Canadian patent No. 18,506 on January 22, 1884.

The winters of the 1880's were unusually severe and one cannot help reflecting whether their severity was a stimulus to the inventiveness of Orange Jull. Certainly railways must have been a frequent topic for dinner-table conversation in the Jull home. His father, Thomas, was a keen advocate of them, being responsible in large measure for bringing the Toronto, Grey & Bruce Ry. to Orangeville in 1871 and the Credit Valley Ry. in 1879. Furthermore, there was as much talk of the building of Canada's first transcontinental

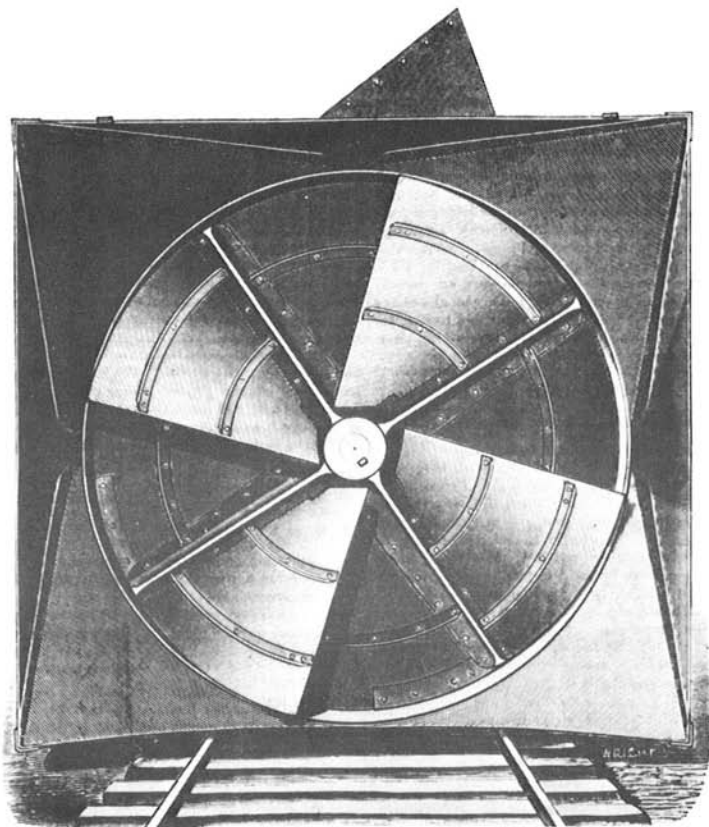


Fig. 1.—Front View, showing Revolving Knives.
 ROTARY STEAM SNOW SHOVEL.

ne, around the Great Lakes, across the Prairies, and over the
 skies, where heavy snows would be encountered.

Evidently, the principle of the Jull Plough (like Elliott, called it a shovel) is that of an auger; the knife-wheel bits to the snow of the drift, cutting it into chunks, which are then thrown beyond the railway fence or over the top of the cutting. The first machine was the result of numerous experimental models, which were made by Jull and tested in sand. Some of its leading dimensions were: diameter of wheels, 9 ft.; size of projecting casing, 9 ft. square (sloping inward to the knife-wheel); diameter of solid forged shaft, 6 in. (carried on a bearing 21 in. long and provided with a thrust-bearing); diameter of hollow cast shaft, 10 in. (carried on a bearing 16 in. long); diameter and stroke of pistons, 12 in. and 14 in. To guard against the choking of the knives, the shovels had double the capacity of the knives, so that the snow would be cleared as fast as it was cut. The rotating parts were carefully balanced by weights attached to the periphery of the knife-wheel. The plan was to have the plough followed by a flanger to clear the snow from between and beside the rails.

The Jull invention was taken up by Leslie Bros. of Orangeville, who proceeded to construct the prototype during the winter of 1883-84. One authority states that it was built in the shops of

the Credit Valley Ry. (later part of the C.P.R.) at Parkville, near Toronto. It was not ready until April 1st, by which time most of the snow had disappeared. However, workmen were instructed to collect what was available and a bank was shoveled into a cut on the line between Queen's Wharf and Parkdale. Though the amount was limited, the capability of the Elliott device to clear the line of snow and ice, and to throw it 200 feet or more was clearly demonstrated.

The demonstration also revealed some deficiencies. The plough should be so constructed that the snow could be thrown on either side of the track, and a flanger should be provided to prevent the plough being derailed in hard snow or ice and to leave the rails clear after it had passed. During the summer of 1884 John S. Lewis (postmaster of Toronto and a partner in Lewis Bros.) formed the Rotary Steam Snow Shovel Manufacturing Co. of Petterson, N.J., with right to build the machines in the United States. An improved plough was constructed for the company by the Cook Locomotive Works of that city. (Edward Leslie, Can. Pat. No. 21,730, May 29th, 1885) It incorporated manually reversible blades on the knife-wheel and a movable baffle over the window of the cylindrical casing. Flangers and ice-cutters were fastened to the front of the forward truck, and

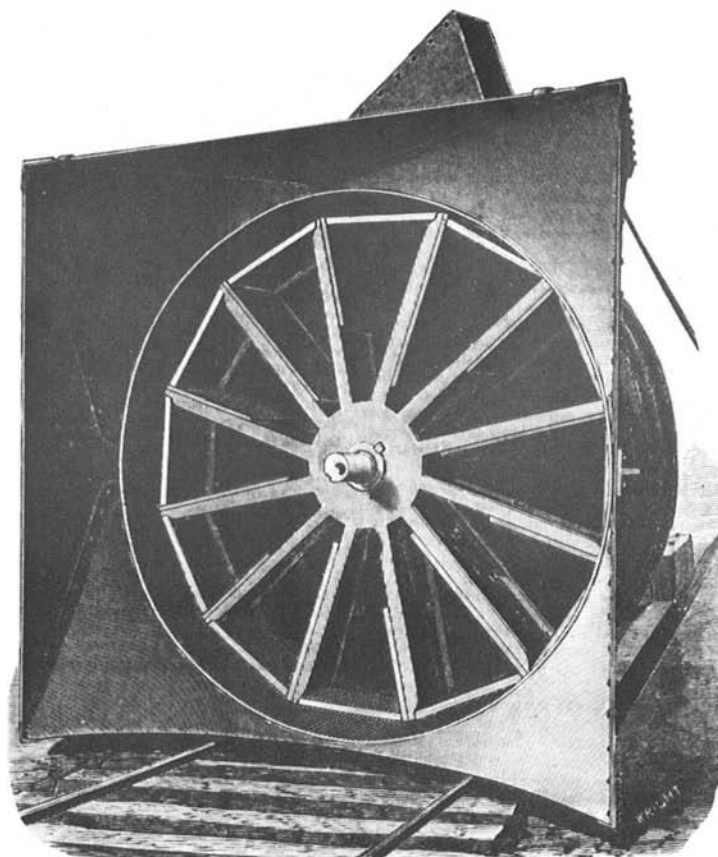


Fig. 2.—Front View, showing Revolving Shovel, the Knife Wheel being removed.

ROTARY STEAM SNOW SHOVEL.

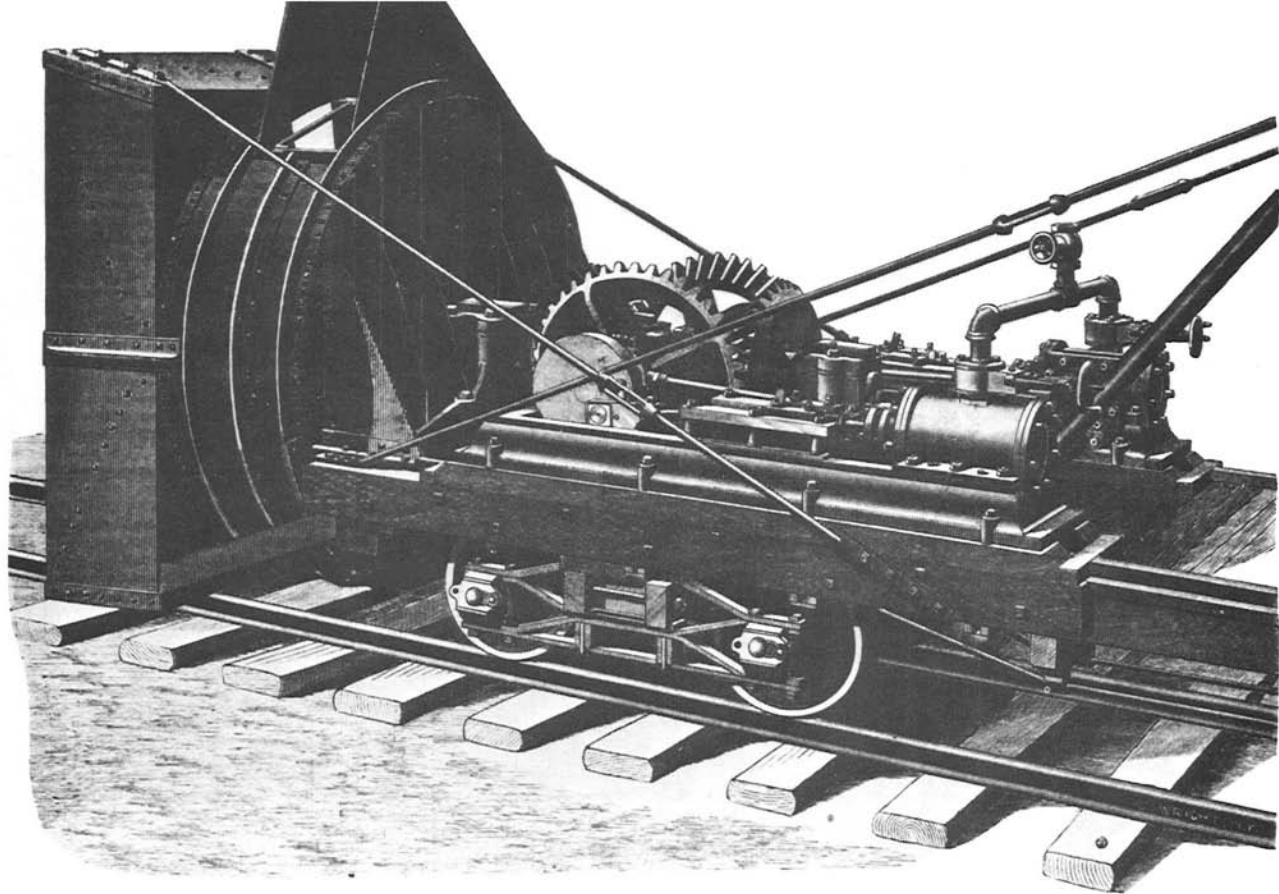


Fig. 3. General View, showing Engine and Gear Wheels.

ROTARY STEAM SNOW SHOVEL.

a wedge-plough to its rear. The flangers and cutters could be raised, or lowered, simultaneously by compressed air. The engines were equipped with Walschaert valve gear. This model was operated on the Chicago and North Western Ry. in Northern Iowa during the winter of 1885-86.

One difficulty was experienced! The friction created by the snow passing between the oppositely rotating wheels absorbed more power than that required to cut and throw the snow. Accordingly, Leslie Eros, devised a single wheel, having knives which reversed automatically their position according to the direction of the rotation of the wheel. The back of the wheel was a round sheet of steel plate to which radial gusset plates or partitions were attached, which in turn supported front rings and the trunnions for the knives. This design became known as the square-fan type. It was tested toward the end of the same winter and proved to be satisfactory.

The plough was sent back to Patterson and rebuilt with several improvements, suggested by the previous winter's experience. The new rotary, as it was popularly called, was given its first trial on the Oregon Short Line Division of the Union Pacific R.R. during 1886-87, being operated by J. S. Leslie himself. It was so successful in opening the 70-mile branch that it was purchased by the railroad and orders for three more were placed. It was also adopted by the Chicago and North Western; Chicago, Milwaukee & St. Paul; Northern Pacific; and other American roads.

The relationship of Jull to the Leslies as inventors is not clear. Canadian patent No. 24,429, July 5th, 1886, refers to Orange Jull as "assignee of Edward Leslie". All subsequent patents, respecting the rotary snow plough, were granted to Edward Leslie.

On Page 53 of the "Popular Mechanics Railroad Album", printed in 1954, appears the statement: "The rotary, perfected about 1885, was the invention of Lewis Bergendahl, an Oregon Ry. & Navigation Co. water-service foreman". In light of the foregoing its accuracy seems open to serious doubt.

A further digression may be permitted here. Between 1869 and 1883 several "machine ploughs" had been designed and tested. None proved satisfactory. The Hawley Plough was exhibited at the Centennial Exhibition in Philadelphia in 1876 and was tested on the Peeswater Division of the Toronto, Grey & Bruce Ry. It was equipped with a conveyor screw, rotating on a vertical axis and supported in a rectangular casing, the front of which was shaped to collect the snow. It was unsatisfactory because it failed to throw the snow as well. The Marshall Plough was tried on either the Chicago, Milwaukee & St. Paul R.R. or the Chicago and North Western R.R. in the late 1870's. Its novel feature was a large wooden wheel, on which were fastened a number of radiating blades and which revolved on a shaft at right angles to the track. (The modern Sicard snow plower for street and highway use is a modification of this principle.) The Blake Plough, which attempted again unsuccessfully to exploit the rotary principle, was tried on the Winona & St. Peter Division, Chicago and North Western R.R. in the early 1880's.

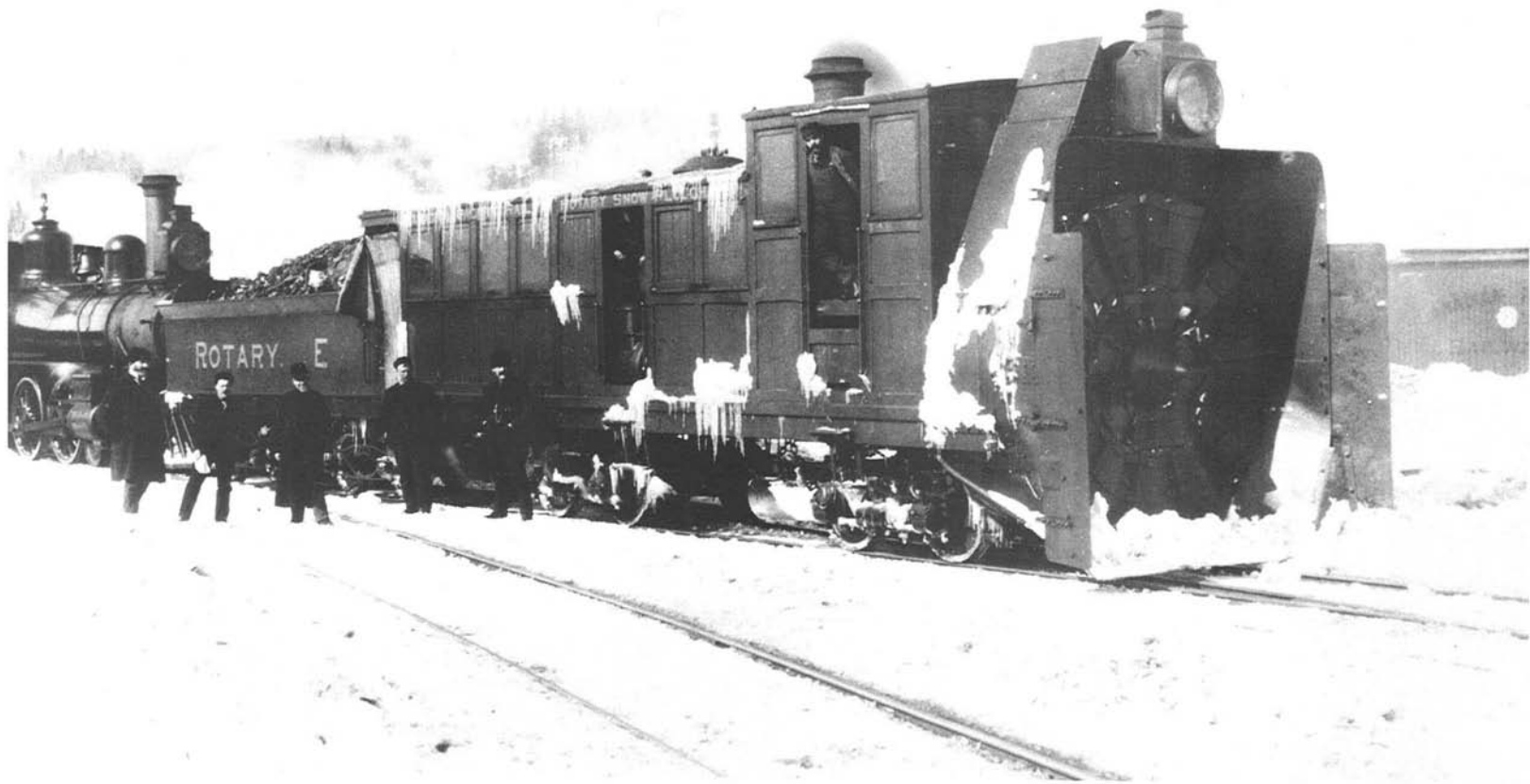
Subsequent to the perfecting of the Elliott-Jull-Lewis rotary, Jull devised a centrifugal excavator in 1889, which was

rst put in service on the Union Pacific R.R. during the next winter. (Can. Pat. No. 31,679, June 26th, 1889) Its unique feature is a cone-shaped screw, built up from four spiral blades and mounted on a shaft, set diagonally across the track and inclined rearward to it. The screw revolved at 250 to 300 r.p.m. and was intended to lift the snow and throw it to side and rear. The design was defective because the spiral cutter was easily damaged, the screw conveyor became clogged with snow and ice, and together they tended to raise the front truck leading the derailment. In the same year the Cyclone Plough was tried on the Central Pacific R.R. Like the Jull Excavator, it had a revolving auger but in addition had a fan-wheel mounted behind on the same shaft. It too was successful.

Let us now revert to our main theme. In 1888 the Canadian Pacific Ry. built at its Montreal shops and in collaboration with the Polson Iron Works Co. of Toronto, eight Lewis-type rotaries. No. 101 was the first of the series and a complete description of it can be found in Vaughan's article (see bibliography). Its wheels were of the square-fan type, 9 ft. 10 $\frac{1}{2}$ in. in diameter, mounted on 8 $\frac{1}{2}$ in. dia. shaft and supported by a 34-in.-long bearing. The roller was provided with 1,259 sq. ft. of heating surface and carried 180 p.s.i. pressure. The cab was of wood. The plough without tender weighed 62 $\frac{1}{2}$ tons in working order. Fig. 5 is a reproduction of a photograph in the Association's C.W. Spencer Collection and is believed to depict one of these ploughs. A source of difficulty with them arose from the heavy bending strain applied to the main shaft, when the lower portions of the wheel and its casing were forced into hard snow or ice. This strain was then transferred to the bevel gears, their bearings and supporting castings. Failures resulted.

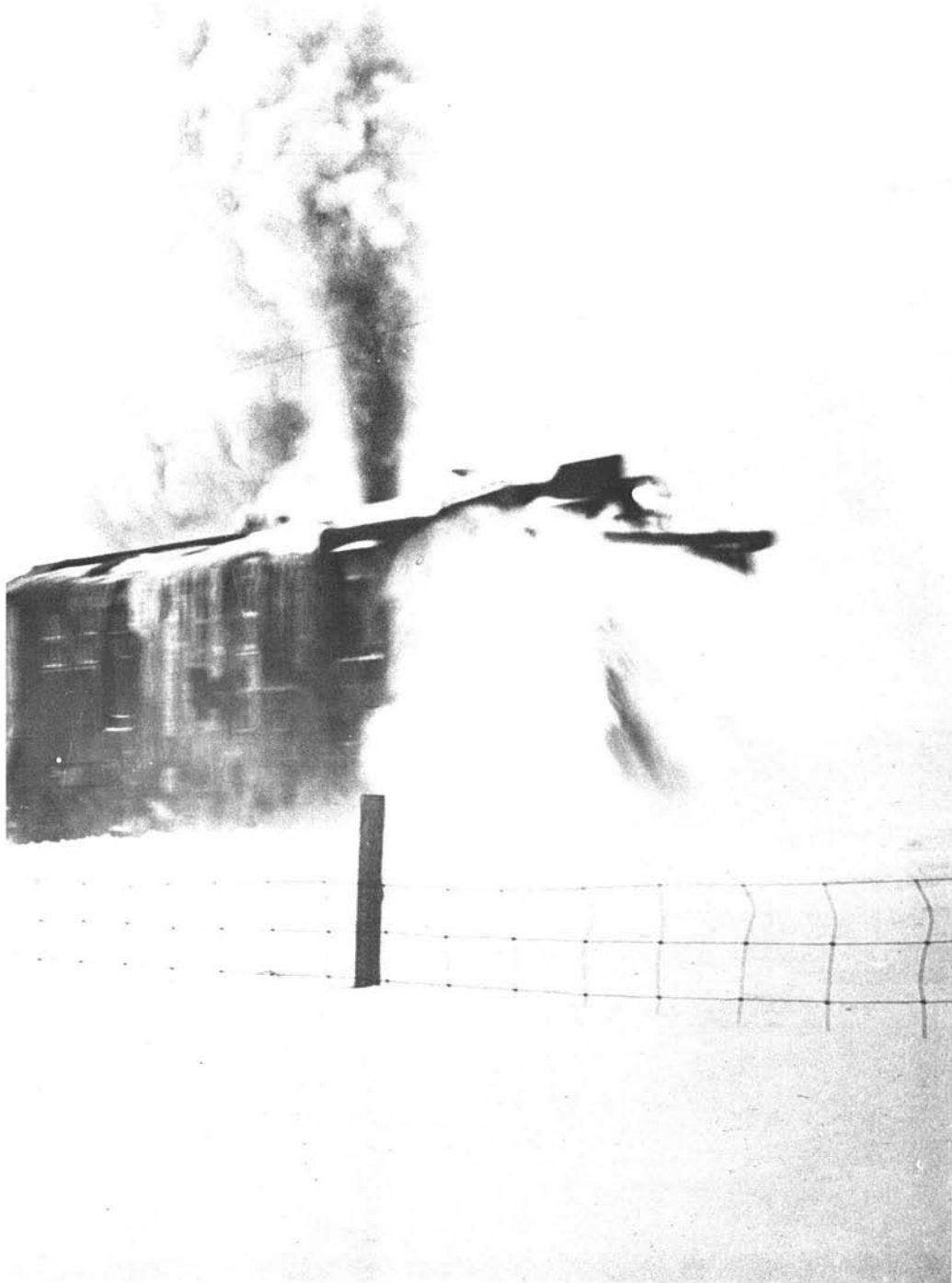
The square-fan-type wheel proved satisfactory when discharging the dry snow found east of the Rockies but unsatisfactory with the wet snow on the Pacific slope. The latter sort had a tendency to adhere to and clog the spaces between the partitions. Furthermore, in heavy work the partitions were not sufficiently strong to drive the knives. As men on the ploughs put it, "the back ran away from the front". To overcome these defects Leslie Bros. devised a wheel in which the compartments or pockets were formed by conical shaped scoops with smooth surfaces (strongly secured to a casting at the centre), on the edges of which scoops, the knives were carried. In the early 1900's the Bucyrus Co. built two ploughs for the Grand Trunk Pacific Ry. One bore the number 385075. The rotors were provided with ten conical scoops. The ten cutting blades were heavy castings and had double edges. They adjusted themselves automatically and independently. The blades were alternately long and short so not to interfere with one another.

The most severe test to which a rotary can be subjected is presented by snow slides such as are met with in the Selkirk, Cascade and Rocky Mountains. The snow and ice in these slides is not only packed very hard, but contains gravel, rocks and trees. The custom of probing for the latter obstructions with sounding rods and, if located, removing them by pulling or blasting was only partially successful. The repair of damaged knives was difficult and slow, often requiring that the plough be shopped. During the winter of 1908-09, George Bury, General Manager, Western Lines, Canadian Pacific Ry., decided that even more rugged construction was required. He envisaged a design with knives of 2-in. armour plate.





Rotary Plough Extra battles the blizz
Deloraine line in Southern Manitoba

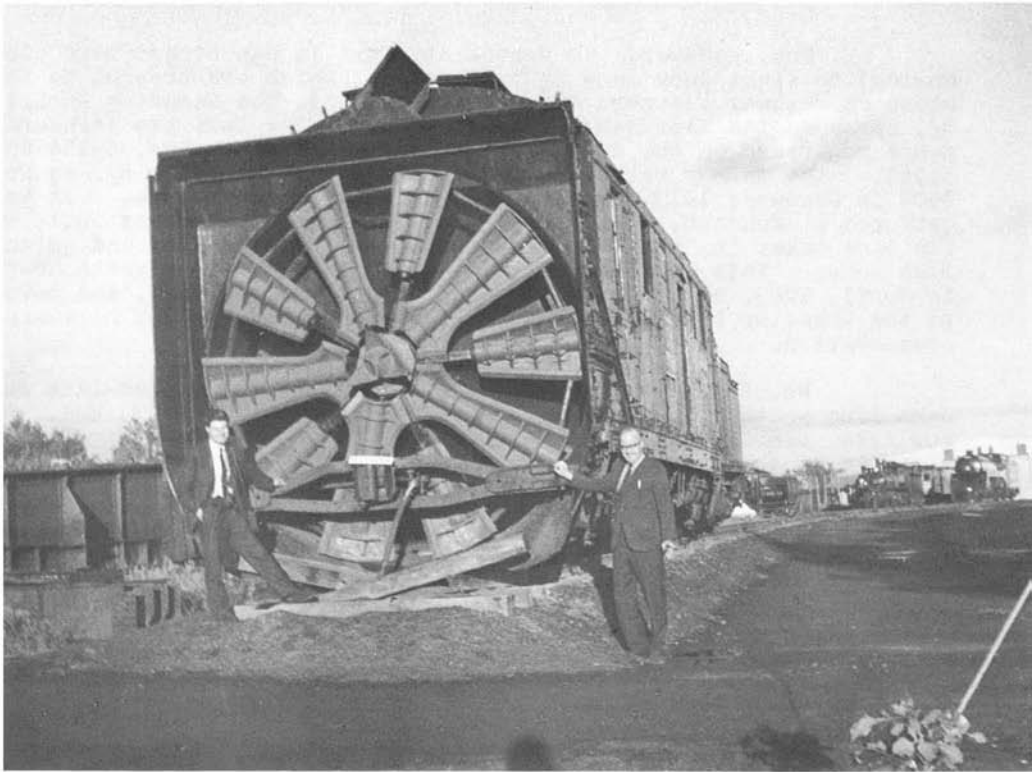


and snowdrifts on the C. N. 's
the difficult winter of 1949.

he following spring authority was given to have the Montreal Locomotive Works build two such ploughs. Mr. H. H. Vaughan, Assistant Vice-President of the Railway, and John Player, Consulting Engineer of the American Locomotive Co., collaborated on the plans.

A detailed description of the design, which was commenced in July, appears in the articles by Vaughan and by Winterrowd. Two suggestions, made by Vaughan, were incorporated from the beginning: one was that the plough-wheel be driven directly by a marine-type engine without the intervention of bevel gears, and the other that the frame of the plough resemble a bridge girder in order to support thoroughly the wheel-casing, rather than be fabricated of channel iron. However, since the employment of 2-in. armour plate for lades and scoops, with a correspondingly heavy construction behind, would have led to an unacceptable weight, a different idea was attempted. The wheel was built up from a number of very strong castings. It weighed in excess of 12 tons and was driven by a shaft 11 1/8 in. in diameter and 12 1/6 ft. long. Wheel and shaft were supported on two large plain bearings and secured by an unusually rugged thrust bearing. The casing was fabricated of 3/4 in. plate, reinforced at the bottom by a second sheet. The engine had cylinders of 20 inches diameter and 24 inches stroke. It was connected to the plough-wheel shaft by a drag-link coupling to prevent bending strains. The boiler was similar to those of the C.P.R. class M-4 Consolidation-type locomotives. The trucks were of the wheel type, had cast-steel frames, and were specially designed for the purpose. The tender had a capacity of 16 tons of coal and 1,000 Imperial gallons of water.





There were delays due to a desire for preliminary testing of the novel wheel and casing on an older plough and to the necessity of redesigning many of the subsidiary parts so as to bring the whole within limitations of weight. Nevertheless, the first plough was completed on January 8th, 1911, and the second one a few days later. One carried the number 300808.

These ploughs were very efficient, being even capable of dealing with 4-in. diameter trees embedded in snow slides. In particular they operated with very little vibration at 400 r.p.m. The only trouble experienced was due to occasional derailment when the rack was badly heaved. The body of the plough was so stiff that the provision of additional spring movement became necessary. They remained the largest and most powerful machines ever built until the 1920's.

For many years the rotary was unrivaled as a means of clearing the line of lengthy drifts and packed slides. It has been employed in many countries throughout the world, on prairies and in mountains. In recent times it has been improved in various minor ways, such as the use of steel cabs, and modified to meet local conditions, such as, through the replacement of steam power by a diesel or electric motor.

Now, however, in Canada at least it has become more economical to fight deep snow by bull-dozers, which are brought to the scene on railway flatcars (or highway trucks). The Canadian Pacific scrapped its last rotaries some time ago. The last two standard-gauge rotaries on the Canadian National Rys. were Nos. 55184 and 55361. The former was built for the Canadian Northern Ry. as No. 500 in January, 1912, by the Montreal Locomotive Works. It was scrapped at Moncton, N.E., early in 1965. The latter was built by the same maker in 1926. It is approximately 41 ft. long and weighs 12½ tons. This historic machine was saved "at the eleventh hour" in April, 1965, while awaiting scrapping at London, Ont., and moved to the Canadian Railway Museum the following November for permanent preservation.

No. 55361 saw considerable service on the Quebec-Lake St. John Line and Fig. 6 is a picture of it taken at Charny, Que., by our late member William G. Cole, sometime in the 1930's. Fig. 7 shows it at the Museum, this summer, when it was receiving close inspection by two visitors from the United Kingdom.

Though the rotary snow plough may have disappeared from the country of its birth it still remains in widespread use in many parts of the world, from Alaska to Peru and from Norway to Switzerland.

The writer of this article will appreciate receiving from readers information and pictures relating to its subject matter.

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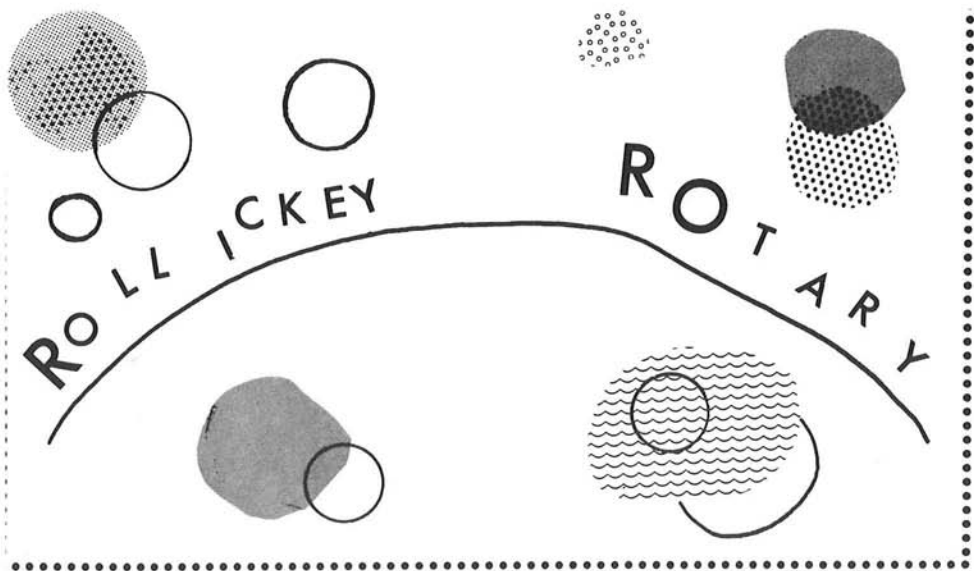
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W. H. Winterrowd,
Canadian Railway and Marine World, September, 1920, pp. 469-473
October, 1920, pp. 525-529
November, 1920, pp. 581-587



While typing this article, our other eye caught an item in the March 3 issue of Time Magazine about the "Double Dactyl", a new poetry form by Poet Professors Anthony Hecht and John Hollander. The rules governing the poem form are:

- a) All poems must begin with a double dactyl nonsense line.
- b) The next line must be a famous name also double dactylic followed by another double dactyl and a line of four beats.
- c) Begin all over again, ending with a punchline.
- d) Somewhere include a double dactylic line of one word.

The word "Rotary" just seemed to lend itself to this format, thus:

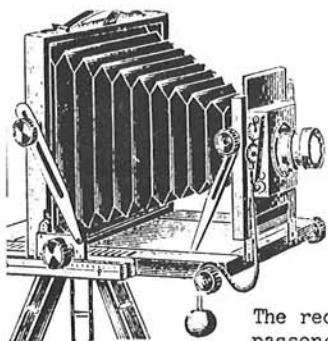
Rotary Doctory

Rickety rotary
 Johnathan Elliott
 Watched as his drill
 Gave his customers pain

Uninterestedly
 Freeing teeth of tarter stain
 Doc turned his thoughts
 To clean track for a train

Relicy rotary
 Doctor Bob V. Nicholls
 Got the Museum
 An obsolete plow

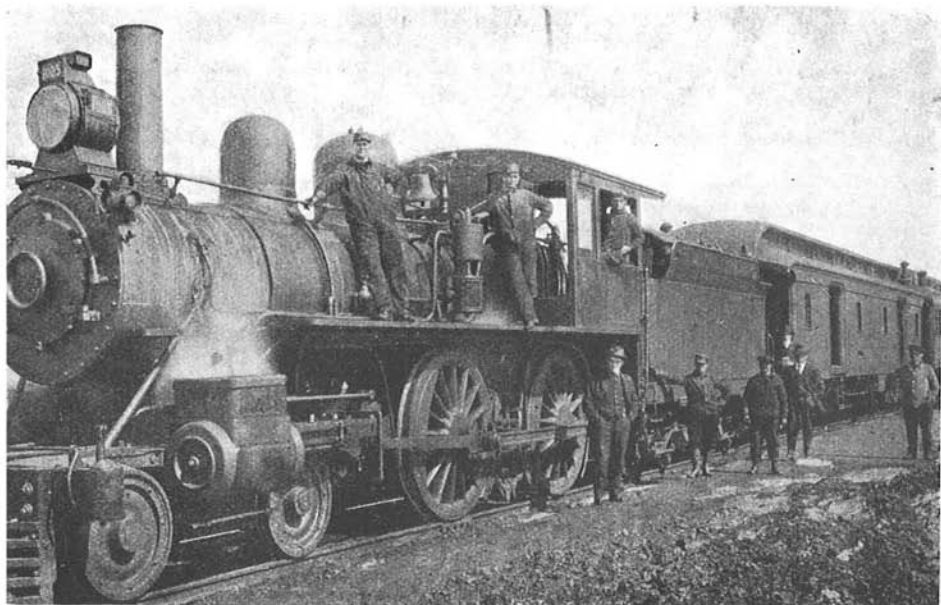
Incontrovertably
 Saved by the President
 Upkeep will take
 More than nickels, I vow.



Photos

The recent announcement by the C.N. that a new first-class passenger train is to be inaugurated over the National Transcontinental Route between Charny and Moncton, brought to light the above old photograph, showing the locomotive that hauled the "First Daily Express Train" over the line between Monk and Levis. Luckily, a photographer was on hand when the train pulled in to record the event for the future.

(Photo courtesy C.N.R.Magazine - 1921: originally submitted to C.N.R.Magazine by Mr.J.E. St.Onge of Riviere du Loup)

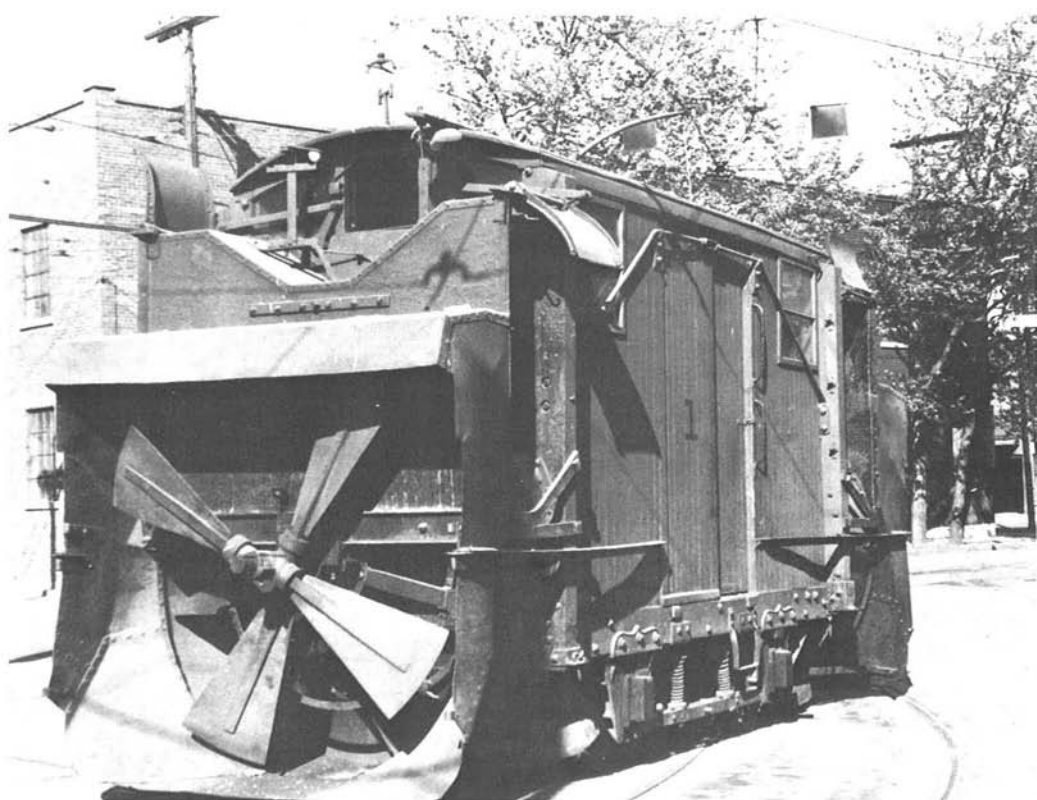
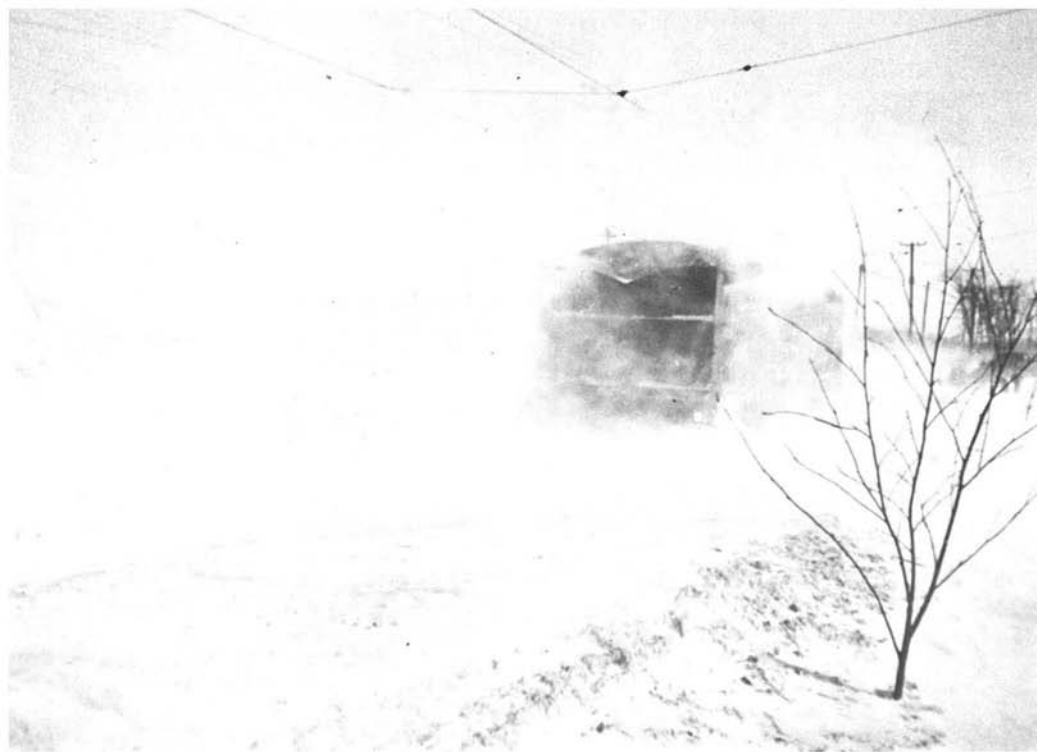


otary snow ploughs were also used on some interurban and suburban electric railways during the early part of this century. Montreal tramways operated two double-truck and three single-truck Rotaries, 11 double-ended machines capable of making short work of accumulated and packed snowbanks. Subsequent expansion of urban development forced the early retirement of most of these units --- one of the last uses for MTC Rotaries was on March 7, 1943 when double truck #2 was required to open the snow-choked Cartierville line.

UPPER PHOTO; Battling the elements on Decarie between Namur and Cote de Liesse Road.

COVER PHOTO; Mission completed!!!

LOWER PHOTO; No work today for #1 --- shown at Mt.Royal Depot May 14, 1949.



CANADIAN NATIONAL RAILWAYS

liveries: up to February 28, 1967.

Unit 3228, serial M-3477-07, was outshopped February 21, 1967.

rappings: up to February 28, 1967.

Prior to 1965, when a unit was retired on account of accident, high cost of repairs, obsolescence, etcetera, (i.e. in such a way that parts could be salvaged from it), the unit was cannibalised and the local shop forces dismantled it on a specific date, which was entered as the scrap date.

This practice was stopped in 1966 and the car bodies are forwarded to London, Ontario, for dismantling by Stores Staff. Since exact dates are being fed back on their program there, such dates are no longer recorded.

It was for this reason that 9318, retired February 15, 1966 (see CanRail #179) and since stored at Point St. Charles, arrived Montreal Yard on February 9, 1966. It left for London at 0300 the following day on Train 743, pulled by locomotives 1801 and 1803.

scrapals: up to February 28, 1967.

Locomotive 77, retired some years ago and since working at Canada Starch in Cardinal, Ontario, has been donated to the Canadian Railway Museum by the Canadian National Railways. Date of delivery to the Museum is uncertain since the locomotive, the oldest CN diesel-electric in existence (1930), is still in use. A more comprehensive report on this locomotive will appear in "Power" CanRail #189 (June, 1967).

CANADIAN PACIFIC RAILWAY

liveries: up to February 28, 1967.

ROAD NUMBER	DATE DELIVERED	BUILDER'S NUMBER
5533	January 27, 1967	A-2178
5534	January 21, 1967	A-2179
5535	January 21, 1967	A-2180
5536	January 21, 1967	A-2181
5537	January 27, 1967	A-2182
5538	February 1, 1967	A-2183
5539	February 1, 1967	A-2184

ELECTRONIC RESERVATIONS

A step by step introduction of an electronic reservations system for trains -- the only one in North America -- was begun in mid-February by Canadian National Railways.

The computer-run service will not become fully operational until June when all seats on CN's new turbotrains will be added to the computer's inventory memory. Until then the computer will be programmed to increase its space inventory in stages while railway personnel become thoroughly familiar with its use.

The system is designed to make coach and parlor car reservations, for journeys over 160 miles, on most of the railway's major trains, within a matter of seconds. (Passengers are not required to reserve coach accommodation for travel under 160 miles.)

Programming for the new system is as follows:

Effective mid-February it became necessary to reserve coach seats for travel beginning April 1, on CN's two transcontinental trains: the Montreal to Halifax "Ocean Limited", and all trains on Rapido service between Montreal-Toronto and Montreal-Quebec City. Parlor car seats, also for travel after March 31, will be reserved on all Montreal-Toronto, Montreal-Ottawa and Montreal-Quebec trains, as well as trains in the Toronto-Southwestern Ontario and Chicago service.

As of April 30 coach space on two additional Montreal-Toronto trains -- the "Scotian" and "Chaleur" -- must be reserved, and 1000 coach seats on the "Lakeshore", "Bonaventure" and "Cavalier", between Montreal and Toronto, will be added to the system in May.

John H. Richer, CN's vice-president, passenger sales and services, said the railway is adopting the system because its expanding passenger business has become too large to be handled effectively by the present manual method.

"We have not applied the electronic system to all trains," Mr. Richer said. "We have chosen our most-travelled trains in an effort to meet the expected heavy demand for our services during Canada's centennial year and Expo 67."

Heart of the automatic reservations system is the Collins computer centre of CN telecommunications in Toronto. The room-size computer is connected to 36 Canadian cities, stretching from Victoria, B.C. to St. John's, Nfld., and to Chicago in the United States.

The system is capable of handling 1,000 requests per hour, 24 hours a day, seven days a week. Reservation requests from any of the connected points can be answered in 10 seconds or less.

The computer will accept last minute cancellations and will reserve travelling space as much as four months in advance.

Smaller communities not directly tied in to the network can secure reservations through the nearest connected office by using existing telecommunications facilities.



by Derek Booth

The Government of Ontario (GO) Transit is scheduled to begin operations on May 23rd. The system will be introduced in four stages. The first will provide 17 trains daily Monday to Friday, between Pickering and Hamilton. The second phase, to begin on June 26th, will see the addition of eight trains in addition to weekend and holiday service. The third stage, beginning on July 17th, will add 14 more Monday-to-Friday trains and the fourth stage, beginning in September, will add another 6, bringing the total number of trains on week days to 45.

From Edmonton comes news of the possibility of the development of a rapid transit or freeway system for the city which would use the CN right-of-way. Meetings have been held between Mayor Vincent Dantzer of Edmonton and CN vice-president for the Mountain Region, Roger Graham. The use of the CN right-of-way would mean that the city could avoid the high cost of acquiring new land in an urban area.

CN will have more mainline trains with more capacity than at any other time in its past" stated CN passenger sales vice-president Jean H. Richer. This statement summed up the massive undertaking of preparing for 1967 and the biggest passenger year in CN's history. As well as the hundreds of cars bought, leased or rebuilt, new trains are being built. These include five Turbos for Montreal-Oronto service and five rapid lightweight trains for southwestern Ontario. The total increase represents additional accommodation of almost 2,000 sleeping spaces and 7,500 seats.

Following a nine-day public inquiry by the Board of Transport Commissioners into the bus-train collision at Dorion, Quebec, approval was announced of a move to eliminate the CP and CN level crossings. The two railways have been ordered to build new fences along the right-of-way within the town of Dorion and controversy still exists over a petition for a rail speed limit of 25 miles per hour. The approval of the chief commissioner of the Board of Transport Commissioners assures Dorion of \$1,000,000 from the Board's railway crossing fund. The town council has approved a project for an overpass 350 feet west of St. Charles street. In addition, plans call for pedestrian tunnels under both CN and CP tracks to connect with the central retailing district of the town. Estimated cost of the overpass is \$2,300,000 and for the pedestrian tunnels, \$100,000. In the neighbouring city of Dorval, Quebec, the Board of Transport Commissioners has approved plans to build a 210-foot-long tunnel under the CP and CN tracks at Pine Beach Boulevard on the site of a former level crossing.

On February 3 the ICC rejected a petition by the state of Vermont to force the B & M to continue passenger service between Springfield, Mass., and White River Junction. Vermont Governor, Philip Hoff, has promised to try further legal measures to restore passenger service in Vermont.

Canadian National Railways recently leased a 45-acre site to the Valley Camp Coal Co. at Fort William, Ont., for a proposed expansion of their facilities. This expansion is designed to handle 1.5 million tons of iron ore pellets a year produced at the Bruce Lake mine near Red Lake in northwestern Ontario. Shipping of the pellets from Bruce Lake to Fort William on a year-round basis will require winter stockpiling and the installation of additional rail facilities.

As a result of the long awaited National Transportation Act which received royal assent early in February, the railways will have greater freedom in the use of pricing policies to meet competition from other transportation forms. At the annual convention of the Canadian Industrial Traffic League, a CP executive stated that Canada's railways may offer in the near future multiple car, or even train-load rates to shippers to capture a larger share of the movements of bulk commodities. Previously railways were limited to car-load rates.

CP will inaugurate a new computerized car tracing service to go into operation by March 15 in five major Canadian cities - Vancouver, Calgary, Winnipeg, Toronto, and Montreal. Under the new system car tracing officers in the five cities will be able to determine the time, date and last reported location of a specific boxcar, anywhere on CP's 16,700 mile rail network in Canada. Initially, shippers will direct their inquiries to the nearest of the five centres and the answer will be obtained and relayed to them by railway employees. An extension of the service, however, whereby subscribers to the Telex network of the CP-CN Telecommunications would be able to dial directly into the computers to obtain car locations, may be instituted. (CN will introduce an almost identical system at about the same time --Ed.)

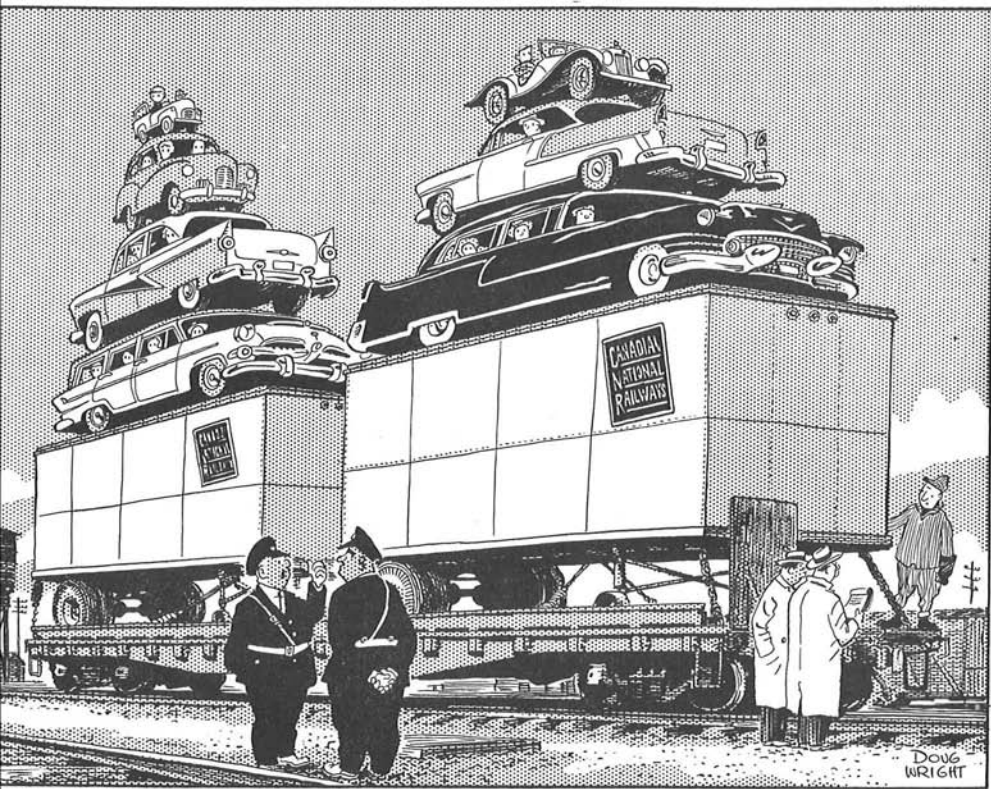
CP Hotels may participate in a \$28,000,000 project in Winnipeg at Portage and Main to include a 30 storey sky-scraper office tower, a new Bank of Canada building, an underground shopping mall and a major hotel. Completion date is in 1969.

CP showed 25% increase in net railway earnings in 1966 to \$50.2 million from \$40.2 million in 1965 while Algoma Central reported net income of \$2.5 million for 1966 compared with \$2.0 million in 1965.

Premier W.A.C. Bennett stated that 1966 was the last year in the bid for the P.G.E. The British Columbia government railway lost \$560,585 last year.



The Illinois Central Railroad is to get a new symbol. To replace the diamond-shaped trademark which has served the company for over one hundred years is a new design intended to be both simple and distinctive. It consists of a symbol similar to a steel rail divided down the middle from top to bottom. To this is added a dot on the left side making a lower case "i.c.", the railroad's initials.



Some of our research people running a test on a suggested method for the evacuation of Montreal - - -"

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