Just A. Ferronut's *October 1995*

Railway Archaeology

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Back in June I mentioned that we would be doing some extra coverage on the recently completed Montréal's Deux-Montagnes commuter line. Well it looks like we are finally starting to get back on track with things around here.

After I first volunteered to do an article on the Deux-Montagnes reconstruction, I started looking at the reams of material that has been published on this line. My dilemma was therefore, are there any angles to this story that hasn't been covered? I was drawing a blank until I happened to be see a presentation on this three year reconstruction project given by CN's Assistant Chief Engineer – Special Projects, Mr. Jack Davis. He made a comment about the amount of the home-built equipment used on the project. This turned a light on, – why not cover some of the construction proposals of this line including the present one with some of the home-built equipment used. The more I thought of this approach, the better I liked the idea, not only would it show some of the Canadian ingenuity used, but perhaps it would even give modellers a few ideas for adding a little to their layouts. And, of course, it is a chance to take a quick look at this three-year project that has culminated many years of talks, plans and more talk, etc., about improving this rail line.

When did the first thoughts of improvements occur? I expect it is quite probable that Mr. S. J. Hungerford, was thinking of improvements to the line as Canadian Northern electric locomotive No. 601 pulled the first passenger train carrying the general public from the Tunnel Terminal in Montreal at 8:15 a.m., on October 21st., 1918, bound for Ottawa and Toronto. I say this knowing Mackenzie and Mann's philosophy of building cheap, and if the line makes money, upgrade it, if it doesn't, you didn't lose much.

The re-opening of this reconstructed rail line on October 26, 1995 for commuter service put it on a new plateau in the 77 years of operation. The initiation of this new service was also the calumniation of plans that have existed for at least 30 years for higher speed modern type suburban rail service. So, before I start looking at the recent three-year re-construction program on the Deux-Montagnes line, a few of the many schemes that have been considered for this line. This is only a list of a few that come to mind, and I am not considering the many grander schemes considered for the greater Montréal area.

The first major improvement or change resulted in the 9 mile extension of the electric train operation, from its previously end at Val Royal (originally Lazard) to St. Eustache-sur-le-lac in July 1925. This remained the northern terminal of electric operations until the present upgrade that extended the catenary approximately another four miles, to north of the new equipment maintenance centre.

The Deux-Montagnes line and the Mount Royal Tunnel were key elements to a 1927 proposal for a new central passenger station. While Canadian Northern had acquired a right-of-way south of their Tunnel Terminal, it was directed towards the harbour and the Montréal Harbour Commissioner's trackage. The Harbour Commission had electrified their operation shortly after the opening of the Deux-Montagnes line. By 1927 Canadian National had not only been given the Canadian Northern, but it had also amalgamated with the Grand Trunk Railway, so the thinking was somewhat changed. This new plan proposed what is the present track alignment from Central Station to the Victoria Bridge for passenger trains to eastern Québec and the Maritimes.

Passenger trains to and from the west, on the Grand Trunk line would use the proposed Pointe-Claire to Saraguay, near Val-Royal on the Deux-Montagnes line cut-off. We discussed this proposed line in our May 1995 Column. This proposed double track route would let these passenger train access the proposed central station and avoid all the level road crossing in the area east of Turcot.

While there were several other aspects of this 1927 proposal, only one other directly affected the Deux-Montagnes line. In 1927, Canadian National had amongst its problems the fact that it was operating three prime stations in Montréal, plus the Montréal & Southern Counties station on McGill Street. Of the prime stations, there was the Canadian Northern's Tunnel Terminal, about 400 yards away was the Grand Trunk's Bonaventure, and about three miles east was Canadian Northern's Moreau Street station. The problem was that there was no convenient rail link between them. CN often had to travel the 108 mile northern loop to Rinfret Junction (near St-Jérôme) and Joliette to get from their Tunnel Terminal, or Bonaventure to the Moreau Street Station. Occasionally, they could get a little rail traffic via the Harbour Commissioner's trackage.

Therefore, the 1927 proposal also included a line from Eastern Junction (Jonction d'Est) on the Deux-Montagnes line east across the island of Montréal to connect with the Moreau Street – Joliette line. We know that the west passenger entrance didn't get built. While work started on the new station project a couple of years later in 1929, the depression of the 1930's slowed up and delayed this and other parts of this 1927 scheme. The new Central Station passenger depot was opened for service on July 14th., 1943. With Central Station came what we now know as the Viaduct, that provides the rail connection to the Victoria Bridge and the Grand Trunk routes to the west.

Construction started in April 1944 on the new line from Jonction d'Est to Bout-de-l'Ile on the Moreau Station line. The line was opened to through traffic into Central Station on August 12th., 1945. The portion of this new line within the City of Montreal, 5.86 miles between Montréal Nord and Jonction d'Est was electrified over the winter of 1945-1946. When this was completed, electric locomotives took over the operation of the suburban trains that had been operating to Montréal Nord since August 13th., 1945.

One of the next major proposals for upgrading this commuter service came in the fall of 1964, just as various plans were being developed for Montréal's Expo 67. At that time, the cost to upgrade the line and fully equip it was estimated at $41.5 million. It was expected that this proposal could be ready to operate by 1966, prior to the opening of Expo. This scheme envisaged not only continued electric operation on the main line and the Cartierville spur, but also proposed a new spur from near Ste-Dorothee to serve Chomedey-de-Laval. The other feature of this scheme, dubbed the "Rapide," was that it would acquire the rail cars from the Expo Express following the close of the World's Fair to round out its roster.

Similar types of schemes appeared periodically over the intervening years. The construction of the International Airport at Mirabel resulted in a flurry of proposals to extend or provide rapid, electric operation to it.

While the citizens of the north-western part of Montréal Island, and the various back river communities out to Deux-Montagnes had been given numerous promises for improved rail service, it wasn't until 1992 that plans and commitments started to gel. The proposal was for a total rebuild of the rail line including new electric equipment design to operate on 25,000 volts, instead of the old 3,000 volt system. The nearly thirty years since the 1964 ``Rapide'' saw the estimated project cost climb to $270 million.

The new rail operation would be centred around a new maintenance facility and yard in Deux-Montagnes at the north end of the line. Not only would this fit in with the plan for the STCUM to look after the maintenance of the new rolling stock, it would a base for testing the new equipment while the old system was still in operation. The rails in this yard are the older rails lifted from the commuter line in 1993. The material taken from the rail undercutting along the line helped supply the fill and foundation fro this new yard.

The new equipment would consist of power-car and trailer units to be coupled in groups of five to provide the equivalent of a ten car train. This new electric equipment was to be build by Bombardier, mainly in Québec.

The construction schedule tied together the length of Montréal's construction seasons, equipment design and construction times, in with such things as ridership demands and Québec annual vacation period. The result was a tight three year schedule. It was agreed that there would be total shut down of the system over the summer months, with reduced service during the springs and falls.

These shutdowns also impacted CN's freight service to its customers along the Doney Spur, and the GM plant near St-JJr^me. Disruption to freight operation between Jonction d'Est and Saraguay (Doney Spur) was kept to a minimum. Some rail service to GM's plant was over C.P.R. trackage.

The old 3,000 volt system had to be kept operational until the third year, 1995. However, as indicated about four miles of new high voltage catenary was erected north of the old Deux-Montagnes station to permit the testing of the new equipment starting in 1994.

Since the changeover in voltage on the old electrified portion wasn't to occur until 1995, this meant that the final signal plant changeover, also had to be in the last year of construction.

The design of the new service called for a number of the stations to be relocated. This was done to permit a better tie-in with the highway and bus transit system, etc. These station relocations, required changes to the rail plant layout, i.e. cross-overs, signal locations, etc., to be different than the original. This made the rail relaying more complex, since the old crossovers, etc., had to be kept until the 1995 shut-down.

The first design called for extension of the double tracking for most of the line on Montréal Island. Due to the expected costs, some of this was dropped and replaced with long sidings at some of the stations. In the line of general matters, the line was to be renamed the Deux-Montagnes Subdivision. This new subdivision was extended south of Central Station almost a mile to near CN Cape, where the new Mile 0.00 Deux-montagnes Subdivision was established. The former Mount-Royal Subdivision was totally gobbled up, as was a portion of the old Montfort. The Montfort Subdivision and its old mileages remain north of the new maintenance centre.

During 1993, the Mount-Royal Tunnel was upgraded to provide improved clearances for the signals and their cables. The road bed and drainage was also improved in the tunnel.

The other major work during this first year of construction was the rehabilitation of the road bed, rail laying and tie replacement. To help reduce long term maintenance, large size ballast was used. As indicated, some of the cross-overs, etc., had to be left until year three.

As mentioned the reconstruction on this line used a number of home or custom built equipment. A number of the contractors had gone to Europe as this project was getting started to discuss European construction techniques. Various European companies wanted to either sub-contract work or to sell expensive specialized equipment to the contractors. Knowing their bids, etc., they basically said thanks, but no thanks and returned home to build or modified equipment to suit their special needs.

The photos show some of this equipment. The track contractor relied heavily on his modified trackmobile and home-built, crane equipped flat cars, (Photo #1). This design met the requirements for CROR operation when needed, but more importantly provided the equipment to lift and lay rail, etc., quickly.

Other more standard equipment as the ballast regulator shown in Photo #2, were used during the 1993 tracking laying.

Since Montréal is on an Island, and the Deux-Montagnes line hops across several islands on its 20 mile trip to Deux-Montagnes, there are several substantial bridges near the north end. These bridges like all bridges need periodic inspections. In this case they also needed to be examined to determine the most suitable locations for attaching the new catenary system. Photo #3 shows a CN owned bridge inspection truck at work. These trucks are hi-rail equipped and have a sectional boom with an inspection basket at the end much like the fire department snorkel trucks or some of the utility trucks. The operator in the basket at the end of the boom can move the boom.

Also during 1993, two grade separations were reconstructed. A third was done during 1995.

The summer of 1994 saw considerable preliminary work for the new catenary system and stations. One problem relating especially to the placement of the new foundations of the catenary system, was getting the concrete foundations in place. The solution for digging the holes for the foundations is shown in Photo #4, where a Petrifond's truck mounted soil auger was equipped with hi-rail wheels and rolled along the rails digging the required foundation holes. This was followed a standard concrete delivery truck (Photo #5), again equipped with hi-rail wheels and supplying the concrete for the catenary foundations.

Many of the posts for the new catenary system, where they cleared the existing system were erected during 1994. This work was done by standard boom trucks, again mounted on hi-rail wheels as shown in Photo #6. The catenary, except for the northern test section was place during 1995. These three pieces of equipment helped keep costs down while ensuring the speed needed to keep things on schedule.

Finally, photo #7 shows the mobile rail version of a standard sight around all urban construction sites – the johnny-on-the-spot. In this case is mounted on a push car with railway wheels and coupled with a tool cart. This enabled the crews to keep both these essential items (tools and !!) near their work site.

While 1993 was the heavy track year, 1994 was the season for getting the signal cables, foundations, etc., in place. This project saw the upgrading of most of the at-grade road crossings along the line. Work on the stations, their platforms, parking lots, lighting was all meshed together with the heavier work.

This year saw the removal and relocation of the various crossovers, signal cut-in, finishing of the stations, and their facilities. With the higher voltage, all the adjacent fencing hand railings, signal equipment along the line has to be grounded. By late July 1995, the testing of the new plant, especially the signal installations was started and gradually extended southward.

So, over the three years, two almost separate systems, the fixed rail plant and the new rolling stock were built and placed into a single system that can be expected to form the basis of a growing electric rail commuter system around Montreal. It was a long time coming, and it has had some teething problems, but comments from most of the commuters is that it was worth waiting for.

Abandonment News

Chatham abandon in a year
Cayuaga abandonment applied for
Newmarket accepted as application

CP Highgate, QC station

Other topics

NYC line Finch to Cornwall

Ottawa, Northern & Western Railway
O,N&WR (CP) - Hull to Maniwaki, QC

Ottawa, Northern & Western Railway
O,N&WR (CP) - Mattawa to Angliers, QC