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Meetings

Regular UCRS meetings are held twice each month. **Toronto** meetings begin at 7:30 p.m. on the third Friday of each month (except July and August), on the third floor of Metro Hall, 55 John Street, at King Street. **Hamilton** meetings begin at 8:00 p.m. on the fourth Friday of each month, at the Hamilton Spectator auditorium, 44 Frid Street, just off Main Street at Highway 403.

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News and Research



SOCIETY NOTES

Toronto August meeting

The second of our summertime UCRS outdoor meetings will be during the evening of Friday, August 21, at the GO/VIA station at Aldershot. Come on out to this busy station, and join fellow UCRS members for an evening, short or long, of train watching.

Aldershot is one of Canada's newest, and busiest, passenger stations. Opened in 1992, the facility is served by six GO trains each day, on their way between Hamilton and Toronto. VIA's Toronto Windsor, Toronto-Niagara Falls-New York, and some Toronto-Sarnia trains also call. The station is located at 1199 Waterdown Road, Burlington (east side of Waterdown Road, just south of Highway 403).

You can get to Aldershot on one of three GO trains to Hamilton, leaving Toronto at 16:37, 17:05, or 17:34, and arriving at Aldershot at 17:31, 17:59, or 18:48. Up to seven VIA trains are scheduled to pass the station in the evening, all but one of which stops at Aldershot. We're also likely to see CN freight action, as the station is west of the junction of the Halton and Oakville subdivisions.

Many return options are available from Aldershot, on the VIA/Amtrak Train 98 from New York at 18:30, VIA Train 78 from Windsor, at 21:16, or on the many GO buses which connect with eastbound GO trains at Burlington at 18:14, 19:14, 20:14 and 21:14, or at Oakville at 22:30 and 23:30.

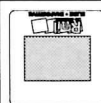
September meeting not to be missed

Regular Friday meetings at Metro Hall will resume in September, with a very interesting presentation by Ted Wickson on the railways of the port of Toronto. Ted's presentation will include information and views of the little-known construction railways which played an important role in building the port area. Don't miss this meeting, on Friday, September 18, at Metro Hall, 55 John Street at King Street, steps west of St. Andrew station.

Renewal time

For many members, it is now time to renew your UCRS membership for the 1998-1999 season; if your membership is due for renewal, you will have received a renewal form in this issue. Once again this year, there is no increase in membership fees, which remain at \$29.00 in Canada. Memberships will run for a 12-month period, and for most UCRS members this means that your membership will extend from September 1998 to August 1999. We're happy to have got *Rail and Transit* back onto a regular schedule over the last three months, and over the next year we'll try our best to keep putting out issues of an informative and interesting publication.

Bob McMann
 Bob McMann remains one of my railfan heroes.
 I first met Bob in Toronto in the mid-1960s. At the time, I was an eager, young railfan with a strong leaning to roster shots and action wedgies. Preservation of the rapidly-vanishing CPR passenger trains and first generation diesels was uppermost in my mind. Bob changed me forever.
 Bob was a friend of two friends, Ted Wickson and John Thompson, who were also long-time UCRS members. After some long-since-forgotten fan-trip, Bob invited us back to his house in North York for a slide show. The evening featured scenic shots of steam, but particularly streetcars in scenes from Toronto and Pittsburgh. These shots showed the car but emphasised the setting. As a student of geography I was very struck by his sensitive rendition of transportation as a feature of the urban landscape. Most notable were his shots of Route 10, Fineview, which I learned was famous for its tortuous routing amid the hills and dales of north-side Pittsburgh. Many of these scenes featured telephoto lenses, which to me were a daring innovation. One must remember that at this time railfan photography was seen only in *Railroad* and *Trains* magazines. Only *Trains* featured the interpretive photography of John Gruber, J. Parker Lamb, and a very few others who strayed from the three-quarter views which had captured trains for 80 years. By 1967, with Bob's coaching, I had purchased an learned to use a Pentax 135 mm lens and even a 35 mm wide-angle!
 Bob's interest in Pittsburgh intrigued me for another reason. Typically my trips of the period were shoestring affairs with friends in old cars staying in much older hotels. Bob did not have a car, did not drive and rode the CP-NYC overnight train to



COVER PHOTO:

GO Transit trains lay over at the Bathurst North yard, just west of Union Station in Toronto.

Photo by Pat Scrimgeour

Continued on Page 10 ►

17 hours at Pickering

A TRAIN SPOTTERS SPECIAL REPORT
By BRIAN ELLIS and PAUL BLOXHAM

Pickering, Ontario, may be the busiest point on the railways of Canada. It is the eastern end of the bypass line around Toronto, where CN freight trains join the main line to Montréal, and the junction of GO Transit's line from Oshawa with the main line.

The three CN lines which intersect at Pickering are the Kingston Subdivision, from Toronto to Montréal, the York Subdivision, from MacMillan Yard, and the GO Subdivision, to Oshawa. These lines connect as shown on the diagram to the right: the Kingston and GO subdivisions at Durham Jct., and the Kingston and York subdivisions at Liverpool and Pickering Jct. The GO Subdivision passes under the York Subdivision, and the steep grades of its flyunder are suitable only for passenger trains.

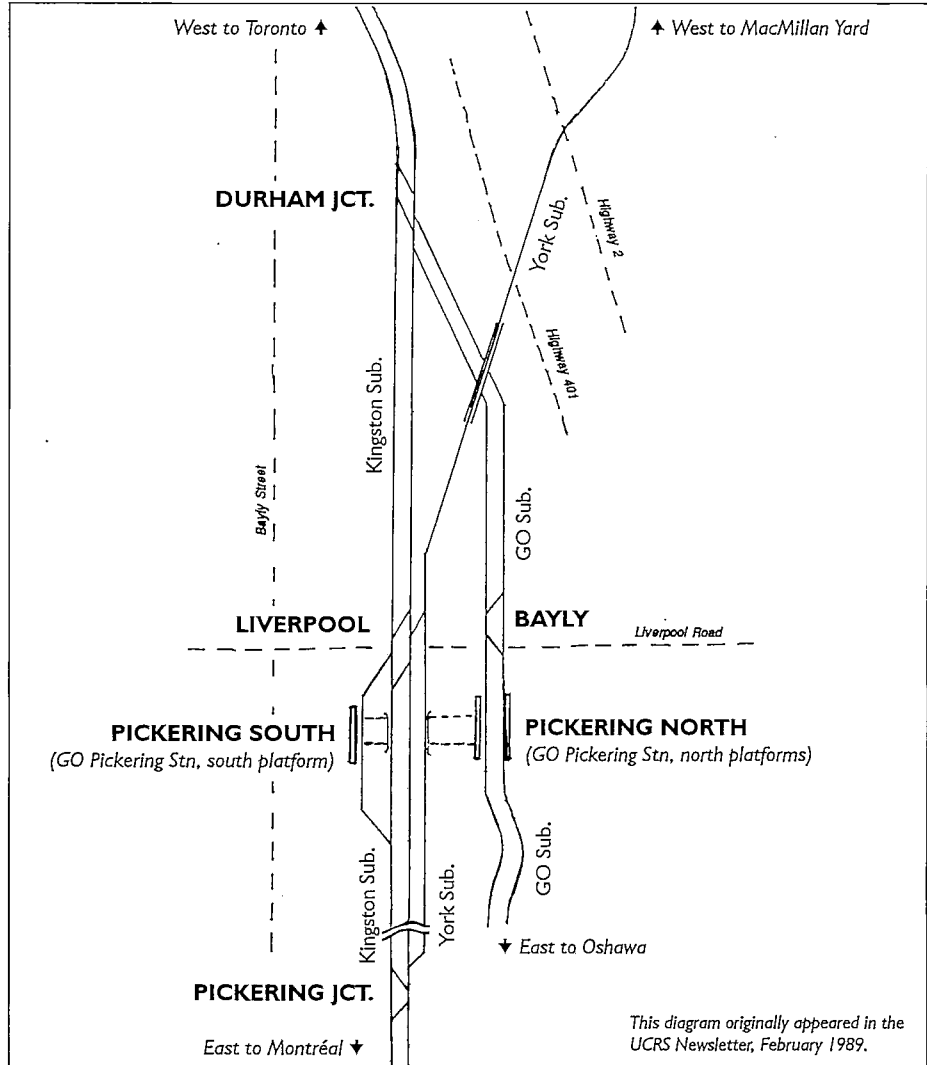
There are three platforms for GO Transit commuter trains: two at Pickering North on the GO Subdivision, and one at Pickering South on a short spur off the Kingston Subdivision. The GO trains which end at Pickering—short-turn trains during rush hours and all trains at off-peak times—use the south platform, and the through trains to and from Oshawa use the platforms on the GO Subdivision. All of the platforms are linked to the station buildings, bus loop, and parking lot.

VIA intercity passenger trains pass Pickering at 80 to 100 m.p.h., without stopping. They run east from Toronto to Ottawa (with train numbers in the 40-series), Montréal (with train numbers in the 50- and 60-series), and Kingston (trains 650 and 651). Most of the VIA trains use Bombardier LRC coaches and are hauled by GM F40PH-2 locomotives; some have LRC locomotives as power and others are made up of stainless-steel HEP2 coaches. One Montréal train each way each day carries a baggage car.

The greatest part of the CN freight trains which pass Pickering are through freights between the Brampton Intermodal Terminal or MacMillan Yard north of Toronto and Taschereau and Turcot yards in Montréal. Trains with numbers in the 100-series are intermodal trains of containers and trailers; trains in the 200-series are express trains of mixed freight (including autos and auto parts); and trains in the 300-series are lower-priority manifest trains. Local road switchers are in the 500-series.

Several freight trains each day set out or lift cars at the CN yard at Oshawa, 10 miles east of Pickering, adjacent to the large General Motors auto-manufacturing complex, and some westbound trains set out and lift cars at Ajax, three miles east of Pickering.

A few trains between Oshawa and points west of Toronto use the Kingston Subdivision west of Liverpool, to make a short-cut through downtown Toronto. Trains between Montréal and western Canada bypass the



This diagram originally appeared in the UCRS Newsletter, February 1989.

Toronto yards and connect between the York and Bala subdivisions at Doncaster.

We set out to get a first-hand look at the traffic through Pickering on a typical weekday. Friday, July 24, was only unusual in that auto-parts and auto-hauling trains to and from Oshawa were light, because of the long GM layoffs this summer. All of the GO and VIA trains that were scheduled did run, and most were close to on-time, and we saw the regular CN freights that we expected to see.

Paul arrived at Pickering at about 06:10 and Brian joined him close to 07:00. For most of the day, we were at the GO station, but we took a couple of breaks, to a track-side restaurant in Ajax for lunch, and to a take-out place for a snack in the evening (during which time we left an associate to watch for trains—there were none). After the heat and humidity of the preceding two weeks, July 24 was a blessedly pleasant day.

As the day passed, we could also hear the whistles of CP freight trains on their Belleville Subdivision, about three miles to

the north. We found out later that about 18 CP trains had run through Pickering during the day. There is no location from which all of the CN, GO, VIA, and CP trains can be seen, but from Bowmanville to Belleville, the CN and CP lines run roughly parallel, and along that stretch there are many places where all the CN, CP, and VIA trains can be seen. Another day, perhaps we'll do an all-day log in that area, trading-off the loss of the GO trains for the gain of the CP freights.

We'd like to invite other *Rail and Transit* readers to compile all-day lists of trains at other busy points in the country, so that we can all compare them. Some possible spots that come to mind are New Westminster, near Vancouver; Portage la Prairie, west of Winnipeg; and Ballantyne, in Montréal.

Recording 93 trains in 17 hours is a rather more rigorous way to spend a day of train-watching than we've spent before, but it certainly gives an interesting illustration of the volume and variety of railway traffic on CN in 1998.

17 hours at Pickering

July 24, 1998, 06:00 to 15:30

	TIME	SUB	DIR	TRAIN	DESCRIPTION
06:00	06:21		W	CN 899	CN SD75I 5655 with 82 empty covered hoppers
06:15	06:31	GO	W	GO 949	GO cab car 211 with nine double-deck coaches and F59PH 542 pushing
06:30	06:49	GO	E	GO 902	GO F59PH 558 with nine double-deck coaches and cab car 239
06:45	06:53	GO	W	GO 905	GO cab car 209 with nine double-deck coaches and F59PH 531 pushing
07:00	06:59		E	GO E953	GO F59PH 537 with nine double-deck coaches and cab car 238
07:15	07:10		W	CN 391	CN SD40-2 5322, SD40 5186, and SD40-2 5330, with 72 cars
07:30	07:17	GO	E	GO 952	GO F59PH 552 with nine double-deck coaches and cab car 221 trailing
07:45	07:18	GO	W	GO 951	GO cab car 213 with nine double-deck coaches and F59PH 556 pushing
08:00	07:25		W	GO 953	GO cab car 238 with nine double-deck coaches and F59PH 537 pushing
08:15	07:35		E	VIA 52	VIA LRC 6905 with an LRC club car and three LRC coaches
08:30	07:38		E	GO E957	GO F59PH 560 with nine double-deck coaches and cab car 232
08:45	07:43	GO	W	GO 955	GO cab car 239 with nine double-deck coaches and F59PH 558 pushing
09:00	07:47		W	GO 957	GO cab car 232 with nine double-deck coaches and F59PH 560 pushing
09:15	07:50		W	CN 149	CN SD75I 5633, GP40-2 9486, and SD60 5516, with 120 intermodal cars
09:30	08:05		W	CN 101	CN Dash 9-44CWL 2583, SD40-2 5372, and SD75I 5756, with 69 intermodal cars
09:45	08:07	GO	E	GO 960	GO F59PH 540 with six double-deck coaches and cab car 217
10:00	08:08	GO	W	GO 907	GO cab car 221 with nine double-deck coaches and F59PH 552 pushing
10:15	08:11		E	GO E959	GO F59PH 532 with nine double-deck coaches and cab car 222
10:30	08:13		W	VIA 651	VIA F40PH-2 6416 with HEP2 coaches 4112, 4125, and 4116
10:45	08:20		W	GO 959	GO cab car 222 with nine double-deck coaches and F59PH 532 pushing
11:00	08:24		E	VIA 40	VIA F40PH-2 6431 with an LRC club car and three LRC coaches
11:15	08:31		W	CN 113	CN Dash 8-40CM 2418 and SD40 5225 with 68 intermodal cars
11:30	08:49	GO	E	GO 906	GO F59PH 534 with six double-deck coaches and cab car 235
11:45	09:01	GO	W	GO 909	GO cab car 217 with six double-deck coaches and F59PH 540 pushing
12:00	09:20		E	CN 546	CN GP9s 7019 and 7076 with two cars
12:15	09:42		W	CN 369	CN GP40-2 9455 and SD40s 6008, 6019, and 6002 with 124 cars
12:30	09:49		E	GO 908	GO F59PH 525 with five double-deck coaches and cab car 208
12:45	09:53		W	VIA 41	VIA F40PH-2 6432 with an LRC club car and three LRC coaches
13:00	10:06		W	GO 911	GO cab car 208 with five double-deck coaches and F59PH 525 pushing
13:15	10:33		E	VIA 56/42	Combined "J-train" with Montréal and Ottawa sections: VIA F40PH-2 6407 with four LRC coaches and an LRC club car, then F40PH-2 6422 with three LRC coaches and a club car
13:30	10:49		E	CN 362	CN SD40s 6022 and 6017 with about 75 cars
13:45	10:50		E	GO 910	GO F59PH 524 with five double-deck coaches and cab car 236
14:00	11:02		W	GO 913	GO cab car 236 with five double-deck coaches and F59PH 524 pushing
14:15	11:35		W	VIA 53	VIA LRC 6919 with an LRC club car, three LRC coaches, and an LRC club car
14:30	11:42		E	CN 302	CN SD75Is 5630 and 5737 with 92 cars
14:45	11:50		E	GO 912	GO F59PH 540 with six double-deck coaches and cab car 217
15:00	12:02		W	GO 915	GO cab car 217 with six double-deck coaches and F59PH 540 pushing
15:15	12:28		E	VIA 60	VIA F40PH-2 6429 (painted for Home Hardware) with an HEP1 baggage car, six HEP2 coaches, and an HEP2 club car
15:30	The four trains between 13:00 and 14:00 were seen at Ajax (Mile 315.5 on the Kingston Subdivision); while at Ajax for lunch, we missed GO Trains 914, 917, 916, and 919 at Pickering.				
	13:14		W	VIA 43	VIA F40PH-2 6411 with an LRC club car and three LRC coaches
	13:27		E	VIA 44	VIA LRC 6907 with three LRC coaches and an LRC club car
	13:28		-	CN 546	CN GP9s 7076 and 7019 switching a local spur
	13:46		W	CN 363	CN SD40-2 5311, SD40 5064, and GP9s 4113 and 4111, lifting 11 cars
	14:34		W	CN 546	CN GP9s 7076 and 7019, light
	14:51		E	GO 918	GO F59PH 540 with six double-deck coaches and cab car 217
	15:07		W	GO 921	GO cab car 217 with six double-deck coaches and F59PH 540 trailing
	15:24		W	VIA 57	VIA F40PH-2 6436 with an HEP1 baggage car, an HEP2 club car, and six HEP2 coaches

17 hours at Pickering

July 24, 1998, 15:30 to 23:00

TIME	SUB	DIR	TRAIN	DESCRIPTION
15:30		E	VIA 46	VIA F40PH-2 6412 with an LRC club car and four LRC coaches
15:45	GO	E	GO 920	GO F59PH 525 with five double-deck coaches and cab car 208
16:00	GO	W	GO 923	GO cab car 235 with six double-deck coaches and F59PH 534 trailing
16:15		E	VIA 64	VIA F40PH-2 6432 with an LRC club car and three LRC coaches
16:30	GO	E	GO 970	GO F59PH 536 with seven double-deck coaches and cab car 218
16:45		W	VIA 61	VIA F40PH-2 6417 with an LRC club car and four LRC coaches
17:00	GO	W	GO 981	GO cab car 208 with five double-deck coaches and F59PH 525 pushing
17:15	GO	E	GO 922	GO F59PH 557 with nine double-deck coaches and cab car 241
17:30		E	CN 148	CN SD75ls 5636, 5629, and 5703, with 103 intermodal cars
17:45	GO	E	GO 972	GO F59PH 527 with nine double-deck coaches and cab car 240
18:00	GO	E	GO 974	GO F59PH 533 with nine double-deck coaches and cab car 230
18:15	GO	W	GO 983	GO cab car 218 with seven double-deck coaches and F59PH 536 pushing
18:30		E	VIA 66	VIA LRC 6919 with an LRC club car, three LRC coaches, and an LRC club car
18:45		W	VIA 45	VIA F40PH-2 6410 with an LRC club car and three LRC coaches
19:00		E	CN 308	CN SD60F 5519 with 75 empty well cars
19:15		E	GO 976	GO F59PH 531 with nine double-deck coaches and cab car 209
19:30	GO	E	GO 924	GO F59PH 564 with nine double-deck coaches and cab car 210
19:45		W	GO E976	GO cab car 209 with nine double-deck coaches and F59PH 531 pushing
20:00		W	CN 131	CN SD75ls 5644, 5764, and 5716, SD40-2 5394 (painted in CP Rail System red), SD75ls 5741 and 5678, and SD40-2 5385 with 85 intermodal cars
20:15	GO	W	GO 927	GO cab car 240 with nine double-deck coaches and F59PH 527 pushing
20:30		E	GO 978	GO F59PH 546 with six double-deck coaches and cab car 225
20:45		W	CN 307	CN SD75ls 5669 and 5775 with 89 cars
21:00		E	VIA 48/650	Combined train with Ottawa and Kingston sections: VIA F40PH-2 6433 with an LRC club car and four LRC coaches, then HEP2 coaches 4104, 4124, and 4109, and F40PH-2 6418
21:15	GO	E	GO 980	GO F59PH 542 with nine double-deck coaches and cab car 211
21:30		W	GO 985	GO cab car 225 with six double-deck coaches and F59PH 546 pushing
21:45		W	CN 395	CN SD50F 5435, SD40-2 5302, and SD60F 5543, with 111 cars
22:00		E	VIA 68	VIA F40PH-2 6430 with an LRC club car and five LRC coaches
22:15	GO	E	GO 926	GO F59PH 534 with six double-deck coaches and cab car 235
22:30	GO	W	GO 929	GO cab car 210 with nine double-deck coaches and F59PH 564 pushing
22:45		E	CN 330	CN SD701 5614 and GP40-2 9527 with 92 cars
23:00		W	CN 361	CN GP40-2s 9650, 9501, and 9456, and SD40-2 5310, with 109 cars
		W	VIA 47	VIA F40PH-2 6431 with an LRC club car and three LRC coaches
	GO	E	GO 928	GO F59PH 537 with nine double-deck coaches and cab car 238
	GO	W	GO 931	GO cab car 235 with six double-deck coaches and F59PH 534 pushing
		E	GO 930	GO F59PH 536 with seven double-deck coaches and cab car 218
		W	VIA 65	VIA F40PH-2 64xx with four LRC cars (passed while GO 930 was on a nearer track)
		E	CN 104	CN SD75ls 5652 and 5750 with 80 intermodal cars
		W	GO 933	GO cab car 218 with seven double-deck coaches and F59PH 536
		W	VIA 67	VIA LRC 6905 with an LRC club car and three LRC coaches
		E	CN 364	CN GP40-2s 9578, 9526, 9409, 9587, and 9455, with about 100 cars
		E	GO 932	GO F59PH 527 with nine double-deck coaches and cab car 240
		W	VIA 49	VIA F40PH-2 64xx with four LRC coaches (passed while GO 932 was on a nearer track)
		E	CN 282	CN GP40-2 9534 with six Ecorail trailers
		W	GO 935	GO cab car 240 with nine double-deck coaches and F59PH 527
		W	CN 335	CN SD60F 5523 and SD40-2 5290 with 100 cars
		E	CN 306	CN SD40-2 5311 and SD40 5064 with 79 cars
		E	GO 934	GO F59PH 525 with five double-deck coaches and cab car 208

Canadian Pacific yards in Toronto

Text adapted from an StL&H publication.

Canadian Pacific's St Lawrence and Hudson Railway in the Toronto area has three primary yards: Toronto Yard, Lambton Yard, and Oshawa Yard. This article focuses on the largest of the three, the 30-year old hump classification facility known as Toronto Yard.

Toronto Yard is a hump yard operation with mechanical shops for rolling stock and locomotive maintenance and repair; Lambton Yard is a flat switching yard serving customer needs in central and western Toronto; and Oshawa Yard serves the inbound and outbound railway needs of the General Motors car and truck plants in the city east of Toronto.

Toronto Yard

Toronto Yard (often referred to as Agincourt Yard, for the old name of the nearby community), covers 432 acres in Scarborough, and was opened in 1964. Located at Mile 197 of the Belleville Subdivision, the yard is

served to the east and west by the Belleville Sub., and to the northeast by the Havelock Sub., which begins at the west end of the yard. Toronto Yard contains just over 100 miles of track and has nominal standing capacity of more than 6000 railway cars. The yard is divided into four separate areas.

A and B yards are used for departures and arrivals, and contain 20 tracks ranging in length from 1900 feet to 6700 feet.

Six local customers are served out of A and B yards, the biggest being the automotive compound. Managed by a contractor, in recent times the compound has received on average more than 125 multi-level cars each week of import automotive traffic. The automobiles are off-loaded and stored in the compound. Many automobiles are later reloaded to railway cars—up to 45 a week, each holding up to 15 automobiles—for onward forwarding.

C Yard is the classification bowl, and is the largest complex of tracks in the yard.

Cars are humped into the tracks by gravity from the elevated hill, and the actual individual car speed is slowed and track alignments are controlled by various computer controlled transponders, relays, and radar devices. Toronto Yard featured the first automated hump operation on the CPR. Much of the current retarder and computer control equipment has been replaced with updated technology at least once since the yard opened. C Yard has 72 tracks and a workable capacity of 1350 cars, and a standing capacity in excess of 1600 cars.

F and G yards are used primarily for train arrivals, although both yards are used to build trains from time to time. The tracks range in size from 5100 feet to 7100 feet.

R and D yards are used by the Mechanical Department for car repairs and locomotive servicing. There are 18 tracks, a diesel locomotive repair shop, a freight car repair shop, and a mechanical turntable for turning locomotives.



Toronto Yard is the home base for 231 road locomotives and 56 yard locomotives. The diesel shop facility presently repairs 68 locomotives per week, and services (fuel, water, and routine maintenance) 55 locomotives a day.

The car shop presently processes approximately 148 cars a week for light to moderate repairs. Also handled are upwards of 50 car cleanings a day, and the preparation for loading of an average of 250 multi-level cars per week for the Honda Canada assembly plant in Alliston and the GM car and truck assembly plants in Oshawa.

Total traffic received and traffic forwarded by Toronto Yard averages approximately 2200 railway cars per day. Up to 2800 static cars at any one time in the yard is considered to be the full working capacity of the facility.

The current average number of cars humped is 1110 cars per day, with a high of 1400 cars per day and a low of 800 cars per day. In addition, 175 cars per day on average are switched within the yard without going over the humps.

There are about 33 train departures per day and 32 arrivals per day. This total of 65 train movements in and out of the yard in a 24-hour period includes local switching assignments.

Total tonnage handled through Toronto Yard is in the neighbourhood of 132 000 tons a day.

Lambton and West Toronto yards

The Lambton and West Toronto Yard area was in use as the main Toronto classification

yard prior to the construction of Toronto Yard. The complex stretches between Mile 5 and Mile 6 of the Galt Subdivision, immediately west of where the North Toronto Sub. and MacTier Sub. meet the Galt Sub. CP is considering plans for a new direct connection between the MacTier Sub. and Galt Sub., near the Lambton Yard complex.

The working capacity standing count for the yard is 440 cars. While the static capacity is higher, 440 cars allows fluid movements in and out of the yard with limited congestion.

On average, 200 cars are received and forwarded daily, and about 25 trains per day on average set out and lift cars in the Lambton and West Toronto area. Lambton Yard is heavily used as a marshalling and staging area for connecting finished automobile traffic originating at Windsor, and in the northeast U.S., as well as for the traffic from the Honda plant in Alliston.

In the case of the Alliston traffic, the majority of the traffic is routed to the U.S. through the Niagara gateway. In the case of finished vehicles coming from the Niagara gateway or Windsor, they are staged at Lambton for connection to trains headed either to western or eastern Canada.

The yard has nine assigned carmen, whose duties are the inspection of inbound and outbound trains, and minor car repairs; the Number 1 brake test on outbound trains, and the Number 3 brake test and end of train unit testing of all trains.

Lambton Yard has been reduced in scope and usage over the years, including a period of very little activity in the early 1990s. The

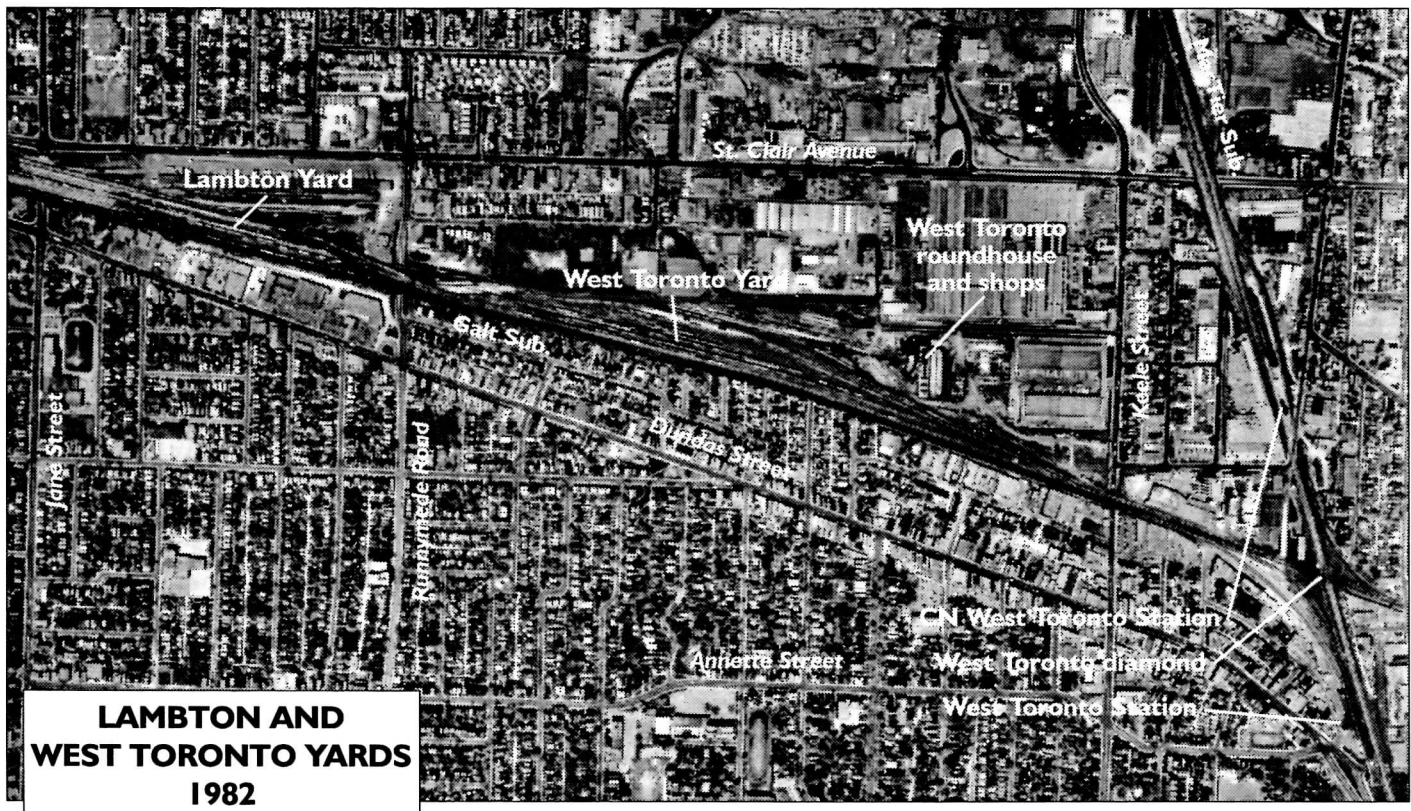
facility is busier now than it has been for some time. Parkdale Yard, near Mile 2 on the Galt Subdivision, was closed within the past ten years, and lifted within the past five, and some of the activity that used to take place at that yard now takes place at Lambton.

The yard is split into two halves. Lambton Yard is used to stage loaded export automobiles from the Ford Canada truck and minivan assembly plant at Oakville. This currently averages 70 loaded cars of vehicles per day. The yard is also used to stage the arriving and departing Roadrailer trains, which operate on the StL&H between Toronto and Detroit, and are interchanged to the owner, Norfolk Southern, at Detroit. These trains are made up exclusively of NS-owned Roadrailer truck trailers, which travel on specialised railway trucks, without flatcars.

West Toronto Yard is used to stage and store local customer traffic. Approximately 60 customers are served out of Lambton and West Toronto yards. The area also contains the Iron Highway facility, the alternative intermodal technology owned by CP. The locomotive roundhouse and shops, which in latter years were used for maintenance of way equipment work, were recently demolished, and the land sold for redevelopment as a supermarket.

Oshawa Yard

The Oshawa Yard facility was constructed in 1953-54 to service what was then the new General Motors assembly plants south of the city. The yard is located at Mile 175.5 of the Belleville Sub. Also constructed as part of



the yard was a mile spur to the new GM plants. This spur includes a long bridge spanning Highway 401 and the CN Kingston Sub., just north of the GM site.

At Oshawa, 48 loaded just-in-time cars per day on average (and 48 corresponding empties) are switched into the two automobile assembly plants and one truck assembly plant at the GM site. An average of 25 loaded multi-level cars are handled out-bound from the plant each week.

Oshawa Yard is also used to serve other local customers, with the largest being Co-Steel Lasco in Whitby. Volume to this large recycler of steel is approximately 50 loads and 50 empties per week.

Total volume handled is approximately 36 000 cars per year out of the Oshawa facility. The yard has nine assigned carmen, whose duties are the inspection of inbound and outbound trains, and minor car repairs; the Number 1 brake test on outbound trains, and the Number 3 brake test and end of train unit testing of all trains.

Changes since Toronto Yard opened

Any railway facility in use for several decades will undergo changes over the years, and Toronto Yard is no exception.

When the yard opened, the Belleville Subdivision was still called the Oshawa Subdivision, and the Havelock Subdivision was named the Peterborough Subdivision. The latter still extended through to Smith Falls, over the section through Tweed and Glen Tay which was closed by the early 1970s.

Tracks and facilities were available at the new yard for icing and refilling charcoal heaters in reefers. Most such cars have long departed the local railway scene.

A selected list of classification track assignments from when the yard opened is a reminder of many CPR locations no longer served by Toronto Yard, or, in many cases, by any railways at all.

Selected 1964 track assignments

Track 13—Orangeville, Elora, Teeswater, Walkerton, and Owen Sound Subdivisions

Track 14—50-foot automobile cars

Track 17—Havelock Subdivision, Locust Hill to Peterborough; Bobcaygeon Subdivision

Track 21—Vancouver Terminal; Wharf; B.C. Coastal Services; Cascade, Westminster, Victoria, Lake Cowichan, and Port Alberni subdivisions

Track 25—Calgary Terminal; MacLeod, Laggan, Red Deer, Crowsnest, Turin, Lomond, Aldersyde, Crossfield, and Alberta Central subdivisions

Track 32—Galt to Innerkip; CP Electric Lines (LE&N and GRR)

Track 33—Milton to Killan; G & G Waterdown North to Guelph

Track 37—Detroit, Wabash

Track 39—Windsor, NYC; Detroit, NYC

Track 55—Winchester, Ottawa Terminals, Cornwall, Prescott, Brockville, Eganville, M&O, Chalk River, Waltham, Maniwaki, Carleton Place, Kingston subdivisions; Belleville Subdivision to Tichborne

THE MECHANICAL REPAIR FACILITY AT TORONTO YARD

The freight car facility consists of three repair shops, six outside repair and service areas within the yard, and three repair and service areas remote from Toronto Yard. Total staff for all areas is 247 employees.

Heavy car shop—Work in the heavy shop consists of all types of car repair which are estimated to be up to 40 hours. This includes metal fabrication of car parts, stick and semi-automatic welding, component change-out and rebuilding, and modification or dismantling of equipment.

- *Day shift, 07:00 to 15:00, Monday to Friday:* 16 tradesmen identified as carman, 1 lead hand special projects, 1 lead hand estimator, 1 lead hand AAR billing, 1 helper materials supply, 1 assistant operation co-ordinator

- *Afternoon shift, 15:00 to 23:00, Monday to Friday:* 16 tradesman identified as carman, 1 lead hand estimator, 1 lead hand AAR billing, 1 helper materials supply, 1 assistant operation co-ordinator

- *Swing shift, 07:00 to 15:00 and 15:00 to 23:00, seven days per week:* 8 tradesman identified as carman

One spot shop (light repair)—Work in the light repair shop consists of all types of car repair which are estimated to be take up to 10 hours to perform. The work is similar to that of the heavy shop, except that only less-involved repairs are performed at the one-spot shop.

- *Day shift, 07:00 to 15:00, 7 days per week:* 8 tradesman identified as carman, 1 AAR billing, 1 helper materials supply, 1 assistant operation co-ordinator

- *Afternoon shift, 15:00 to 23:00, 7 days per week:* 8 tradesman identified as carman, 1 AAR billing, 1 helper materials supply, 1 assistant operation co-ordinator

Ancillary shop—This shop handles repairs to shop equipment, such as welding equipment, air brake testing rigs, shop machines, company automobiles and trucks, etc.

- *Day shift, 07:00 to 15:00, Monday to Friday:* 3 carmen, 1 labourer, 1 pipe fitter, 1 electrician, 1 sheet metal worker, 3 auto mechanics

Support staff—Support staff fill positions in all areas of the car shop to compensate for unexpected work load increases, absenteeism, or vacation. Support staff operate mobile repair vehicles which are required to respond to location calls from customers when problems are encountered with freight cars at their sidings. The support staff also have the important responsibility of responding to derailments, using the 130-ton road-railway crane based at Toronto Yard.

- *Day shift, 07:00 to 15:00, 7 days per week:* 21 carmen, 1 helper, 1 labourer

- *Afternoon shift, 15:00 to 23:00, Monday to Friday:* 18 carmen, 1 helper

Upgrade and repair area—Work at the upgrade area consists of interior repairs to box cars, such as replacement of hardwood floors and plywood walls. Replacement and repair of flat car decks and replacement and repair of gondola floors are also frequently carried-out.

- *Day shift, 07:00 to 15:00, Monday to Friday:* 6 carmen

Tank track repair area—Repairs to the exterior running gear and safety appliances of tank cars. No work is done to tank car valves, interior linings, or tank shell, as these specialised and safety-related jobs are usually done by the car owner.

- *Day shift, 07:00 to 15:00, Monday to Friday:* 4 carmen

F1 fast repair area—This area does light repairs, those which can be completed in under one hour.

- *Day shift, 07:00 to 15:00, 7 days per week:* 15 carmen

F3/F5 repair and service tracks—At these tracks, servicing, repairs, and inspection of auto rack cars for General Motors and Honda is performed, prior to these cars being forwarded for loading at these two important customers.

- *Day Shift, 07:00 to 15:00, 7 days per week:* 11 carman

C17 and C17A repair and service area—This area undertakes light repairs to all freight cars, mostly consisting of interior work and door repair.

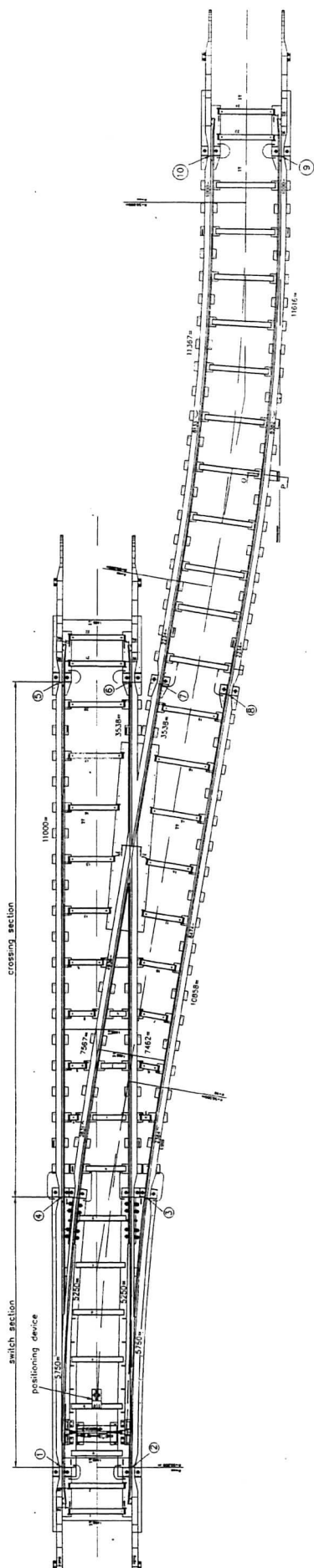
- *Day shift, 07:00 to 15:00, 7 days per week:* 4 carmen

Inspection yard—At the inspection yard, employees perform inspections of inbound and outbound trains, and any necessary minor running repairs. This yard also performs the Number 1 brake test on outbound trains, and the Number 3 brake test and testing of end of train units. Inbound and outbound pull-by inspections are done in the inspection yard, and lading-related inspections are carried out, where the interior condition of cars is checked on inbound trains.

- *Day shift, 07:00 to 15:00, 7 days per week:* 15 carmen

- *Afternoon shift, 15:00 to 23:00, 7 days per week:* 17 carmen

- *Night shift, 23:00 to 07:00, 7 days per week:* 17 carmen



The crossovers, which are the mirror image of each other, break down for transport in several pieces. The ends of the pieces are colour-coded, to aid assembly, and each

A major part of the project in September will be to test the potential cost-savings of rebuilding one track at a time, while streetcar operations continue on the other track. It is expected that the crossovers will work as intended; the key finding will be whether, overall, the operating cost savings from not replacing streetcars with buses will outweigh the increased construction cost of rebuilding only one track at a time.

Transcontinental

News and Research

►Continued from Page 2

Pittsburgh! Once there, he would tour the city on foot and by streetcar, often alone but sometimes in the company of friends from Toronto or New York. His world was as different from mine as that of Beebe and Clegg.

An unfortunate theft of my Pentax gear left me devoid of camera equipment late in 1967. Bob inspired me once again. This time, his experience and wisdom convinced me that Nikon was the brand of choice for serious railfan photographers. Being "serious," Bob arranged a tour of the camera shops of Yonge and Church streets in Toronto and I purchased my first Nikons, an F and, my favourite, a Nikkormat FTN. Bob's good friend, Gerry, the original proprietor of Henry's on Church, made the sale. That's Henry's north of Queen, I might add.

As the years went by, Bob served the UCRS in many capacities – as a long-time director, as recording secretary, as editor of the *Newsletter*, and as president. I was an out-of town member, and was only able to attend UCRS meetings at the Mount Pleasant Road location from time to time, but I was struck by Bob's vitality and enthusiasm for the hobby. This was especially true during the "newscast" where local fans played one upmanship to see who had the most exotic and unidentifiable locations for shooting the TTC. Bob was always a strong contender; this was a heady challenge for the coterie of younger, maturing fans. Bob later contributed to various publications, particularly those dealing with streetcars. He was a contributing author to the acclaimed work *The Open Gate*, the history of the Toronto Union Station.

After Bob's parents died in the early 1970s, he moved to an apartment on College Street just west of Maple Leaf Gardens. This move brought him much closer to his work at the University of Toronto.

Each time I visited Toronto, Bob and I would get together, sometimes with other friends for dinner at Fran's, sometimes to tour the camera shops, and always to talk about mutual interests in film, photography, music, and computers.

Regularly through the '80s and '90s, I would call Bob from my home in the Maritimes to seek his advice on pending purchases of VCRs, computers, and cameras. He was always eager to share his latest insights on commercial reviews balanced by his personal experience.

For many, many years he had the latest and best of the Nikon line and was very well known throughout the camera shops of Toronto. He developed a considerable collec-

tion of significant vintage camera equipment by Nikon and other manufacturers. Similarly, he rapidly acquired expertise in video, audio and computing equipment. Accordingly, I often followed his advice, bolstered by his pre-visit pricing tours which allowed me to concentrate my shopping on the one or two best-priced contenders. We both relished the experience, I loved the quality and the bargains and he delighted in the transactions which often led us to trial runs and computer burn-ins at his apartment. Usually the new gear went home with me by rail on the *Atlantic* or the *Ocean*. These were the best of times.

My friend, Bob McMann died in Toronto on June 9 at age 60. I miss him deeply.

—Bill Linley

Railway news from eastern Canada

THE RAPIDO

CN/IC plans announced

As the Canadian National's planned takeover of the Illinois Central Railroad moves along to completion, CN has released its plans for operating the new combined railway.

CN announced its plans to acquire IC on February 10, completed the acquisition of 75 percent of IC's stock by March 14, and put into effect a preliminary merger in the U.S. on June 4. On June 16, CN made its formal merger application with the Surface Transportation Board in the U.S. The application includes details of CN's plans for operating the new railway.

New services are planned, including trains operated in co-operation the Kansas City Southern, which concluded 15-year marketing and train operations agreements with CN and IC in April 1998. CN and KCS have also reached agreement on certain trackage, haulage, and terminal arrangements.

A main selling-point of the CN/IC combination is that many trains will either avoid the congestion inherent in train handling in the Chicago area, or will move between CN and IC via the combined railway's improved connection in south Chicago. Particular service changes are:

- Automotive trains from Oshawa will be extended to operate over the IC to Memphis, Tennessee. From Memphis, trains will run through over the KCS to Shreveport, Louisiana, and Dallas, Texas.
- A new automotive service will be operated from Flint, Michigan, on the former Grand Trunk Western, to Council Bluffs, Iowa, on IC's Chicago, Central and Pacific Railroad. Michigan traffic will be combined at Flint with traffic forwarded on CN lines from Canada.
- A new service will be added to accommodate traffic growth from Oshawa to Kansas City, Missouri. From Chicago, this train will

operate as a new service over IC to Springfield, Illinois, and from there on KCS's affiliate, Gateway Western Railway, to Kansas City.

- New direct intermodal service will be introduced between Montréal and Memphis, where CN expects to divert much business from trucks. Traffic will be consolidated at Montréal, adding Toronto, Detroit and Chicago traffic destined to Memphis. The train will bypass the Jackson, Mississippi, yard and operate over KCS directly to and from Dallas and the Houston, Texas, area via Port Arthur, Louisiana.

- A direct Toronto-Shreveport manifest service will be inaugurated. This train will handle traffic from eastern Canada and Michigan points to interchange points at Memphis, Jackson, and Shreveport.

More details about the planned new trains and the present trains they would replace are in the separate item which follows.

Investment plans attributed by CN to the merger include:

- \$54.6-million (U.S.) for new locomotives;
- \$37.3-million (U.S.) for new intermodal and automotive facilities;
- \$31.2-million (U.S.) for yard improvements and new connections;
- \$17.6-million (U.S.) on information technology.

Other planned changes which will result from the merger are:

- Closure of the former GTW locomotive shop at Battle Creek, Michigan, and transfer of heavy work to the IC Woodcrest shop at Homewood, Illinois, IC's Memphis shops, and GTW's Flint shop. Battle Creek will retain responsibility for fuelling and servicing local yard locomotives, terminating trains and foreign-line locomotives. GTW employees at Battle Creek will be offered positions at Woodcrest, Memphis, and Flint.
- Consolidating GTW and Duluth, Winnipeg and Pacific train dispatching, crew calling, and time-keeping operations at IC's Homewood facility.
- Merging CN's Gateway and IC's Moyers intermodal facilities at Harvey, Illinois, south of Chicago.
- Retaining, initially, separate customer service organisations and facilities.

—Al Tuner, CN

Planned CN/IC service changes

New intermodal trains

- I42 – Chicago-Toronto, 6 days/wk
- I43 – Montréal-Chicago, 6 days/wk, via Brampton
- I44 – Dallas-Montréal, 6 days/wk, KCS to Jackson
- I45 – Montréal-Dallas, 6 days/wk, KCS from Jackson
- I76 – Winnipeg-Chicago, 7 days/wk, including manifest traffic
- I77 – Chicago-Winnipeg, 7 days/wk, including manifest traffic

New automotive trains

- A01 – Toronto–Memphis, 6 days/wk, via Oshawa
- A02 – Memphis–Battle Creek, 6 days/wk
- A03 – Flint–Council Bluffs, 6 days/wk, to UP at Omaha
- A05 – Toronto–Kansas City 5 days/wk, via Oshawa, GWWRR
- A06 – Kansas City–Oshawa 5 days/wk, via GWWRR

New merchandise trains

- CHTO – Chicago–Toronto, 6 days/wk
- QCCH – Québec City–Chicago, 6 days/wk
- SHTO – Shreveport–Toronto, 7 days/wk, via Champaign
- TOSH – Toronto–Shreveport, 7 days/wk, via Centralia

New unit trains

- CBFRC – Council Bluffs–Toledo, Ohio, 1 day/wk, coal
- FRCBC – Toledo–Council Bluffs, 1 day/wk, coal empties
- B386 – Saskatoon–Chicago, 1 day/wk, potash
- B390 – Saskatoon–Champaign, Indiana, 1 day/wk, potash for south of Champaign
- B391 – Champaign–Saskatoon, 1 day/wk, potash empties

Trains to be cancelled

- I11 – Chicago–Council Bluffs; traffic handled by A03
- Q142 – Chicago–Toronto; replaced by I42
- Q143 – Toronto–Chicago; replaced by I43
- Q144 – Chicago–Montréal; replaced by I44
- Q145 – Montréal–Chicago; replaced by I43 and I45
- Q148 – Chicago–Halifax; replaced by I44 and Q106
- Q149 – Montréal–Chicago; replaced by I45
- E255 – Pontiac–Battle Creek; traffic handled by E251 and M397
- E271 – Toronto–Griffith; traffic handled by A01 and E251
- E273 – Flint–Proviso; traffic handled by A03 and E257
- E275 – Toronto–Cicero; traffic handled by A05 and E251
- E277 – Toronto–Flint; cancelled
- E279 – Toronto–Griffith; traffic handled by A01 on Saturdays
- M341 – Clearing Yard–Winnipeg; traffic handled by I77 from Markham
- M391 – Québec City–Clearing Yard; traffic handled by QCCH, TOSH, and M397
- M392 – Clearing Yard–Toronto; cancelled
- M393 – Sarnia–Griffith; cancelled
- M396 – Battle Creek–Toronto; traffic handled by CHTO and SHTO
- M399 – Toronto–Battle Creek cancelled
- A464 – Griffith–Battle Creek cancelled
- A465 – Battle Creek–Markham handled by QCCH
- A466 – Markham–Battle Creek handled by CHTO
- A468 – Blue Island–Battle Creek cancelled
- A469 – Battle Creek–Blue Island traffic routed via Markham

Barrie–Collingwood Railway news

CN has set a deadline of September 2 in negotiations for a municipal purchase of the

Newmarket Subdivision between Bradford and Barrie. The provincial government has been negotiating with CN on behalf of the municipalities of Barrie, Innisfil, and Bradford–West Gwillimbury to buy the 35-kilometre line.

Because of the tight deadline, the area's member of Parliament has asked the federal transport minister to intervene, and seek an extension of the deadline from CN. The line is seen by the local municipalities as a key future link in the GO Transit network. While present GO service, which extends as far north as Bradford, would not be affected by the removal of the line, there would be little possibility of reviving commuter train service to Barrie if the line were lifted.

CN is said to have put a price tag of \$3-million on the line and land.

In a related development, by late July much work was evident on a track connection between the Barrie–Collingwood Railway (the municipal operator of the former CN Meaford Sub.) and the CPR's MacTier Sub. Bulldozers and graders were busy constructing a new roadbed on the southeast side of the diamond crossing between the CPR and Barrie–Collingwood Railway. The actual connection appears to be planned for just under a mile south of the Barrie–Collingwood line, on the east side of the MacTier Sub.

When this connection is complete, freight from the former Meaford Sub. can connect with the outside world via the CPR. Until then, Barrie–Collingwood Railway trains, operated for the municipalities by Cando Contracting, travel south to Snider, at the junction of the CN Newmarket and York subdivisions, to interchange with CN. For the time being, CN still operates north on the Newmarket Sub. to serve a few remaining customers in Bradford.

—*Barrie Examiner, Peter Bowers via CNET*

New VIA labour agreement in place

On June 29, VIA Rail Canada reached a new contract with the Brotherhood of Locomotive Engineers. The three-year deal covers 508 employees, and paved the way for VIA's elimination of the conductors' jobs on board trains on July 1.

The plan to eliminate the position of conductor was announced in March 1997, but could not take place until the new labour agreement was in place. With the change, all tasks pertaining directly to passengers, including safety-related information and procedures, are the responsibility of on-train service personnel. An in-charge employee in the passenger section of the train is in radio contact with the two engineers in the locomotive. On-board personnel have been issued new portable low-powered radios, and communicate with the head-end crew on the 160.200 MHz frequency.

In addition to the work-rule changes, the contract includes a two percent wage increase in each of the three years of the

contract, and a premium payment for locomotive engineers, to take into account their additional train-handling duties. The agreement will reduce VIA's costs by \$175-million over the next ten years.

About 240 conductors were affected by the change. They either took early-retirement packages or opted to transfer back to CN for freight-train conductor positions. There was some confusion on the first day after the change, however, when CN initially refused to take back the employees.

AMT's former GO cars

Further work is to be performed on the former GO Transit single-level cars currently in service in Montreal with the Agence métropolitaine de transport.

All 19 cars are to be sent back to Alstom (formerly GEC Alsthom AMF Transport) at Pointe Saint-Charles this summer for Phase II modifications. In addition, cab car 106 is to be added to the fleet after receiving both Phase I and II modifications. These additional modifications include new emergency tools, fire extinguishers, first aid kit, conductor seat, cab windows, lateral door control, door key locks, radio system, flooring, truck sidebearers, AEI tags, and batteries.

—*Roman Hawryluk, Earl Roberts*

Commuter train study in Ottawa

Ottawa could have an eight-kilometre commuter railway system between the LeBreton Flats area and the South Keys Shopping Centre in operation by the summer of 2000. The experimental light-rail line was proposed by a task force set up by the Regional Municipality of Ottawa–Carleton government. The line would use diesel-powered light rail vehicles, similar to the Siemens RegioSprinter that demonstrated two years ago in Calgary.

The task force report said that the pilot service would cost between \$10- and \$23.5-million to set up, depending on the number of stations and the equipment used. The line would use the existing CP Ellwood Subdivision, including the tunnel under Dow's Lake. Seven stations, which would cost \$10-million, are identified, at Gladstone, Carling, Carleton University, Confederation Heights, Walkley, and Greenboro, where connections would be made with the southwest transitway. The stations at Gladstone and Walkley could be omitted, for a \$5.5-million savings. Track and signal improvements would cost another \$3-million to \$5.5-million, and the lease of three or four light rail vehicles would add \$3-million to \$8-million. Trains would run every 15 minutes, and travel time from Greenboro to Bayview would be about 11 minutes. The CPR is on record as keen to operate the line.

The line is projected to carry 7300 riders a day after a year's operation. By 2021, the daily ridership could jump to 14 500. If the line were extended to Hull, an easy move, but not one that would be funded by the

Ottawa-Carleton region, an additional 700 riders a day would be carried.

Plans for other corridors, on the east-west lines from Kanata and Barrhaven to the Ottawa train station, and to downtown, were also considered, but will not be pursued for the immediate future because of low projected ridership or very high capital costs.

The proposal was not made by OC Transpo, but the regional task force responsible for the proposal emphasises that light rail should be seen as an integral part of the region's transit system and not a competitor to OC Transpo. It says that because the light rail service would not take most people directly to their destinations, a good transfer system is critical to its success. The task force suggests common routes, schedules and fares.

The report goes to the region's transportation committee for approval September 2 and then on to council for potential approval.

Trenton Works outlook

A \$7-million expansion of the Trenton Works freight car plant in Pictou County, Nova Scotia, will likely start this fall. The Greenbrier Companies, the U.S. firm which owns the plant, has already authorised \$5-million (U.S.) in capital expenditure for the plant, in expectation of upcoming orders.

The company is expecting confirmation of an intermodal car order for 1000 cars from TTX worth about \$70-million. The final agreement for the cars depends on Trenton Works' ability to produce cars of the same quality as a current 500-car order for TTX.

The plant expansion would increase painting and blasting capabilities, resulting in reduced costs per car and improved productivity. The expansion would also create construction work and could add to the plant workforce next year. Usual plant employment is about 1250, though it can drop between orders.

Since Greenbrier took over in March 1995, more than \$10-million has been spent on improvements, and employment has increased five-fold.

The future of the car plant, on the verge of collapse in the early 1990s, now looks solid. Greenbrier has a backlog of orders for 5300 cars that will mean steady work well into 1999.

—Halifax Mail-Star

Forest City slide day

The fall slide trade and sale day organised by the Forest City Railway Society will be on Saturday, October 24, in London. Admission is \$2.00. The location is Room B1071, Fanshawe College, 1460 Oxford Street East, and the hours are 11:00 a.m. to 4:00 p.m. Parking is free in any marked parking spot, including the meters. Dealers are welcome; for information, contact Ian Platt, 1240 Glenora Drive, London, Ontario N5X 2P7, or call him at 519 438-3330.

Railway news from western Canada

THE PANORAMA

Ridley Island sulphur

The Sulphur Corporation of Canada plans to build a sulphur-export facility on Ridley Island at Prince Rupert. It will use some existing facilities at the Ridley Terminals. The new facility will receive molten sulphur from various locations in B.C., Alberta, and Saskatchewan, starting in the first quarter of 1999. The product will either be shipped molten to international markets, or converted into pellets at Prince Rupert for export.

—Vancouver Sun via Dean Ogle

Burlington Northern and Santa Fe coal

BNSF's first shipment of metallurgical coal from the Fording Coal Ltd. mine in Fording, B.C. to Altos Hornos De Mexico (AHMSA) in Monclova, Mexico started on Tuesday, June 16. The 105-car trains will travel more than 2250 route miles on BNSF to AHMSA, which is located 148 miles south of Eagle Pass, Texas. The shipping agreement provides BNSF with a new market potential of 200 000 tons of metallurgical coal per year. The coal from the Fording mine will be blended with Mexican coals at AHMSA to make coal coke for steel production.

—Altamont Press Newswire

CN business-car train

Canadian National operated a business-car train from Chicago to Vancouver. The train travelled on CN via Duluth and Winnipeg to Edmonton. CN SD75I 5712 and Dash 8-44 2570 were the units that pulled the train into Vancouver on July 3 after a 3-day trip from Edmonton. The consist that arrived in Vancouver was: CN 15162—*Coureur des Bois*, Trans Alpine Express *Glacier Park*, CN 15161—*David Thompson*, UP 114—*Feather River*, BNA Red River, KCS 98—*Kansas City*, KCS 99—*New Orleans*, CN 100—*Pacific Spirit*, BNA 60 High Level Lounge (full length dome), BNA 68—*Regal Spa*, WSOR 800149—*Northern Nites*, UP 1602—*Green River*, UP 200—*Omaha*, KCS 56—*Jackson*, CN 15165—*Tawaw*, and CN 15050—*Sandford Fleming*.

The U.S. business cars returned on both Amtrak and the *Rocky Mountaineer*. The occasion was the Association of American Railroads Safety and Operations Management Committee meeting and Chairman's inspection trip.

—Jim Brock,

Stephen Goodman, Dean Ogle, Mike Swick

Biggar crew facilities

CN has completed work at Biggar, Saskatchewan, on a \$2.2-million facility that will give crews a home away from home when they are on the job. Crews from both Saskatoon and Edmonton lay over in Biggar, and the much-improved facility offers soundproofed rooms with private bathrooms, heating and air-conditioning, and laundry and exercise rooms.

—Saskatoon Star Phoenix via Ted Deller

Level crossing incident demonstration

CN staged a level-crossing accident in Regina on Monday, June 22, as part of the Operation Lifesaver safety program. Two units and a train of 1700 tons struck a full-sized van configured as a school bus. One locomotive sustained a bent handrail, while the van sustained much more severe damage.

—Len Turple

Grain vacuum

As part of a continuing effort to reduce wildlife mortality in national parks in Alberta and British Columbia, the CPR is buying a jumbo vacuum cleaner to suck up grain spilled from trains in an attempt to reduce the number of animals killed on the tracks. The machine will be based in Banff, for use in and around Banff National Park and Yoho National Park. The high-rail truck-mounted unit will be able to operate both on the road and on the railway, and will cost about \$500 000.

Grain that spills from grain cars makes the tracks a tempting source of food for wildlife, and has long attracted elk, sheep, and other animals to the track. Having such a truck readily available would have been a major help with the cleanup after the runaway-derailment at the Spiral Tunnels last December, when considerable amounts of grain were spilled and had to be retrieved.

—Ottawa Citizen; Dean Ogle

CPR line reductions

In Alberta, the CPR is offering for sale to the short line railway market the 44-mile section of the Macleod Subdivision between Claresholm and a point south of High River, and the 24-mile section of the Turin Subdivision, between Turin and a point just north of Coalhurst.

The CPR will be discontinuing operations between Southall and Minton on the Bromhead Subdivision, on August 8.

—Al Tuner

E&N Budd car notes

On the E&N, the *Malahat* dayliner run has been busy this summer, with some trips carrying upwards of 150 passengers. Recently, both Budd RDCs have broken down, with various problems. Car 6148 had transmission troubles, and when 6135 went out alone it broke down on Four Mile Hill, south of Langford, with a broken drive shaft. Buses were ordered, and passengers were three hours late. On June 27 and 28, both 6148 and 6135 needed new wheels, and it was decided to keep them both in the Victoria shop to be done together. Buses were substituted for the weekend service. Car 6133 went to Vancouver six months ago for truck changes.

—Pat Hind

Nelson line lifted

International Reload Rail has lifted the trackage of the former BNSF Nelson Subdivision from just north of the Atco Lumber mill at Parks, B.C. to the end of IRR trackage

about a mile north of the Salmo depot. The only reason IRR went north of Parks was to service a reload operation at Salmo which was in competition with the reload operator who owns the railroad. The rest of the BNSF Nelson Sub. is still in place north of Salmo to Nelson, but the grade crossings have been lifted and the trackage in Cottonwood Pass is overgrown. The trackage has been acquired by a U.S. dismantler who is supposed to start lifting it in August.

—Phil Mason via Dean Ogle

Kamloops event

As listed in the last *Rail and Transit*, Kamloops Railway Days will be held September 19, 1998 at three venues: the historic CNR station, a display room in the Riverside Coliseum, and the 2141 Steam Restoration Society backshop. There will be free shuttle bus service between venues. There will be a CPR demo train, a caboose, and a snow plough; CNR is providing an SD75I, and CN Police will have the Operation Lifesaver Display; and Rocky Mountaineer Railtours will showcase one of their new cars. Other attractions are bands, a sales area, and hand car and speeder rides. Admission is \$3 (\$10 maximum for a family), with the event going from 10:00 a.m. to 5:00 p.m.

—Al Kline

Revelstoke event

Revelstoke Railway Days will be held August 28 to 30. This social weekend features slide shows, guided photography tours, a model railway exhibit, a trade fair, and a CPR picnic. There will also be guided tours of the Revelstoke Railway Museum, and a photo competition. The registration fee is \$35 for a pass for all activities. More information can be obtained from the Revelstoke Enterprise Centre, P.O. Box 2398, Revelstoke, B.C. V0E 2S0, 1 800 487-1493.

Island event

The Alberni Pacific Railway started its 1998 operation on July 4, to run every weekend until Labour Day. The locomotive will be ex-CPR Alco RS3 8427 because steam locomotive No. 7 is getting its wheels and journals turned. It is hoped that No. 7 will be ready for E&N Days on August 15 and 16. This event will celebrate the 113th anniversary of the E&N Railway. On August 16, there will be a parade of trains and the main celebration, with birthday cake and clowns, model trains, and CPR railway equipment on display.

—Glenn Migneault

White Rock event

Until November 22, 1998, the City of White Rock, B.C., Museum and Archives is having an exhibition of the story of the Great Northern Railway and the City of White Rock. The display is open seven days a week, from 10:00 a.m. to 8:00 p.m. until September 1, then 10:00 a.m. to 6:00 p.m.; admission is by donation. The White Rock Museum is at 14970 Marine Drive.

—Ken Wuschke

Cranbrook event

The Canadian Museum of Rail Travel at Cranbrook is planning a "Centennial Celebration" weekend for August 21 to 23. The year 1998 marks 100 years since the first train arrived in Cranbrook. The museum will be open from 8:00 a.m. to 10:00 p.m. during the weekend. The touring Crowsnest photo exhibit will be in Cranbrook; this is a display showing many aspects of the development of this area. CPR may have their exhibit cars in town over the weekend, and there will be guided heritage tours of Cranbrook.

MOTIVE POWER

The last runs of CPR MLWs

The CPR's RS18s and C424s have now all been retired. The last run, with 4230, 1838, and 4216, was from the Montréal Wharf to Saint-Luc Yard on July 7.

Details on the EW&S Class 66s

When Wisconsin Central, through its subsidiary English, Welsh and Scottish Railway (EWS), took over the former British Railways freight companies Rail Express Systems in December 1995, and Transrail, Loadhaul, and Mainline in February 1996, it embarked on a thorough survey of the locomotive fleet. From this survey it became apparent that a significant part of the fleet was life-expired and replacements would be required. With re-engineering soon ruled out because of the age of the locomotives and with nothing suitable on the second-hand market, the only option that remained was to buy new locomotives.

EWS was impressed with the reliability of the 15 GM-built Class 59 locomotives already in service and asked GM if they could produce an updated version of the Class 59 — a Class 59 Mk II. GM said yes, and after further negotiations EWS placed an order for 250 3300-hp C-C diesel-electric freight locomotives on May 24, 1996. The order called for 220 Class 66/0 heavy haul locomotives and 30 Class 66/4 HEP-equipped high-speed locomotives to be assembled at GM's London, Ontario, plant. The Export Development Corporation of Canada provided the initial funding for the locomotives, and in June this year EWS announced a £375-million leasing deal with Angel Train Contracts for the final funding.

The production schedule agreed between GM and EWS was for two pre-production locomotives to be delivered by December 1998 for testing, with deliveries of production locomotives starting in May 1999. An upturn in traffic and poor availability of some of the older locomotives saw EWS becoming short of power. EWS pressed GM and they agreed on the production schedule being brought forward by nine months to the spring of 1998. In the end, the delivery of the two pre-production locomotives slipped by nearly a month but the

production locomotives should still be in service at least nine months earlier than originally planned.

With the order signed, detailed design work started at GM in consultation with EWS and Railtrack. (As the owners of Britain's railway network, Railtrack have to give approval for the locomotives to run over its lines.) It was during the detail design stage that it became apparent that, due to excessive track forces from the HT-CR trucks, it would not be practical to build a high-speed variant of the heavy haul design. By now, traffic was beginning to increase, and after further negotiation with GM, the order was changed to 250 heavy-haul locomotives, now classified Class 66, and a new order was placed with GM for 30 high-speed locomotives, now classified Class 67, to be built by Alstom in Spain.

The Class 67 locomotives will be built at the plant at Albuixech, Valencia, Spain, where Alstom is currently building ten GA 3000 B-B diesel-electric for PRA Israel license from GM. The Class 67 locomotives will be based on these locomotives. Being a new design, they will have to go through a full Railtrack safety case approval test programme. The first locomotive is expected to arrive in June 1999. (Although not formally ordered yet, Virgin Cross Country will also be buying 36 of a Class 68 single-cab variant of the Class 67 for use with new push-pull train-sets to be ordered at the same time from Bombardier.)

The JT42CWR design of the Class 66 is an update of the JT26CW-SS design of the Class 59/2 locomotives supplied to National Power in 1995. By using this design GM and EWS will be able to speed up the Railtrack approval process by only needing approval for those items that have been changed.

Major changes are the replacement of the 16-645E3C engine with the later 12-710G3B engine with electronic fuel injection and engine management systems. The HT-C trucks have been replaced by the modern HT-CR self-steering radial trucks that offer reduced track and wheel wear and the elimination of flange squeal. The heavy duty AR11 MLD-D14A traction alternator and D77B traction motors have also been replaced by the lighter AR8 traction alternator and D43TR traction motors because the Class 66 locomotives are not required to spend the same long periods at full power that the Class 59 locomotives are. This has saved weight and allowed fuel capacity to be increased from 4500 litres to 6800 litres.

Although the maximum fuel capacity is now 6800 litres, the cut-off valves on the Class 66 locomotives have been set to 5900 litres. At this setting, when 66001 officially weighed as part of the type approval, the total weight was 123 tonnes, which was four tonnes below the maximum of 127 tonnes. Once EWS has made some decisions about optional additional equipment, including

knuckle couplers, the cut-off valves will be reset to allow the maximum fuel within the 127 tonne limit.

Other changes include the Q-Tron "black box" recorder and the EM2000 microprocessor control system. The EM2000 provides full fault archive and diagnostics allowing observation almost everything from track speed to the alternator voltages, as well as to undertake the isolation of traction motors.

Construction of the two pre-production Class 66 locomotives started on May 12, 1997, at La Grange, Illinois, with the cutting of the metal for the frames. Final assembly took place at London and by March 23, 1998, 66001 was complete and ready for hand over to EWS. Following some test runs on March 26 and 27, 66001 was towed to the Port of Albany, New York, on March 31 for shipping to Immingham aboard the heavy lift ship *Fairload*. (The original plan to ship the locomotive on a fast sailing from Halifax to Liverpool was scrapped after the price was more than doubled.) The locomotive arrived at Immingham Docks on April 18, and unloading using the ship's cranes began at 06:00 and was completed at 08:49, when 66001 settled onto the dockside rails. The cranes then removed the shipping cover, and after a check to ensure the locomotive was safe to move, it was towed to the nearby Immingham Depot by Class 56 56018. (Twenty years earlier 56018 had arrived at the same docks from Romania, where it was built.)

After inspection at Immingham Depot, 66001 was displayed to the press on April 20 and officially handed over to EWS. In the evening 66001 was towed to Toton Depot by Class 60 60016 as Train 0Z84 leaving at 19:43 and arriving just before midnight. More detailed inspections were carried out at Toton before 66001 was towed to Chester and back, again by 60016, for exhibition at a European Union Transport Ministers conference.

On April 27, 66001 was towed to the Engineering Development Unit at Derby for static tests and measuring to ensure compliance with specifications. With these tests completed 66001 returned to Toton under its own power (its first powered move on the Railtrack network) as Train 0Z66 leaving at 09:30. The first loaded road test was on May 27, when 66001 took 19 empty VBA vans as 6Z66 from Toton to Peak Forrest (near Buxton) and back leaving at 09:30. The same run was repeated on May 28 as 4Z66.

Although still on test, 66001 worked her first revenue earning train on June 2 from Toton to Drakelow Power Station and back. This was the 03:00 7C45 Bentinck Colliery to Drakelow Power Station MGR ("merry-go-round," equivalent to a unit train) comprised of 36 loaded HAA hoppers totalling 1512 tonnes. The train was hauled from

Bentinck to Toton by Class 58 58049 *Littleton Colliery* where 66001 was attached. With 58049 tagging along for insurance, 66001 took the train on to Drakelow in heavy rain. After unloading 66001 returned 58049 and the empties to Toton as 6P45 leaving at 08:45. Following the completion of the loaded test runs between Toton and Peak Forrest, fitter and re-railing training started at Toton on June 22.

With training completed at Toton, 66001 moved to Cardiff Canton Depot for fitter and driver training on July 3 in 6V67, the 15:26 Wakefield-Cardiff Tidal from Burton-upon-Trent behind train locomotive 56057 *British Fuels*. To get to Burton-upon-Trent 66001 ran light engine from Toton. The first outing from Cardiff came on July 9 when 66001 travelled light engine to Llanwern. From Llanwern 66001 hauled 08:42 6B57 Llanwern-Port Talbot Grange Sidings MGR empties as far as Margam with the train locomotive, 56044, shut down. At Margam, 66001 was detached and 56044 restarted to take the train on for loading and on returning to Margam 66001 was reattached and hauled the train back to Llanwern.

The second pre-production locomotive, 66002, was shipped from London, Ontario, on June 18 to arrive at the AAR's Transportation Technology Centre near Pueblo, Colorado, on July 1 for eight weeks of testing. For the journey, the body was separated from the trucks and loaded onto Canadian Pacific flat car CP 315612. This was necessary because the U.S. Federal Railroad Administration requires locomotives to withstand 1 000 000 pounds compression at the drawbar, but the Class 66 locomotives are only designed to withstand 660 000 pounds.

The first week was spent fitting-out 66002 with sensors and assembling the test train. The line-up at the start of testing was 66002, flat car CP 315612 (now loaded with 21 tonnes of steel), a test car, and SD60MAC demonstrator 9502 bringing up the rear. One reason for the SD60MAC in the formation is load simulation using the dynamic braking. Although some of the tests are for type approval and safety case certification, the majority is for the benefit of GM to test the HT-CR trucks. So far 66002 has managed 87 m.p.h., which is 12 m.p.h. faster than the service speed of 75 m.p.h. It had been hoped to reach 90 m.p.h. but the worn tyres and shock absorbers on 9502 and resultant rough ride at 87 m.p.h. made this impractical.

Construction work on the production series locomotives has already started and will start shipping in August with three or four locomotives, increasing to six or seven in September, and from October at 11 locomotives per month. The locomotives will be shipped from Halifax, Nova Scotia, to Newport, Wales, aboard the MV *Stella Mare*, which has been hired for two years and will convey up to 11 locomotives at a time on a

10-day crossing every month.

Now that 66001 has Railtrack type approval and a safety case, the production locomotives will not need to be inspected by Railtrack on arrival. GM will supply them tested and ready-to-run and once EWS reconnects systems disconnected for the voyage, checks the fuel, lubricant, coolant, braking, and safety systems, they will be able to enter traffic immediately. The checks are expected to take approximately three hours per locomotive and will be performed on the quayside when the locomotives are landed.

For the future, EWS is also looking to replace its Class 37/0 locomotives with new Class 38 locomotives and is currently discussing options with GM. The general specification is for a B-B locomotives with a 1750 to 2000-horsepower prime mover and a maximum axle load of 17.5 tonnes.

Class 66 specification

Model.....	JT42CWR
Built at:.....	General Motors Diesel Division, London, Ontario, Canada
Wheel arrangement.....	C-C
Engine.....	GM 12N-710G3B-EC of 2465 kW (3300 hp) at 900 rpm
Traction alternator.....	GM AR8
Auxiliary alternator.....	GM CA6
Traction motors.....	GM D43TR, axle-hung
Power at rail.....	2240 kW (3000 hp)
Trucks.....	HT-CR
Gear ratio:.....	81:20
Wheel diameter:.....	1.067 m (3 feet 3 1/4 inches)
Maximum design speed:.....	145 km/h (90 m.p.h.)
Maximum service speed:.....	120 km/h (75 m.p.h.)
Maximum tractive effort:.....	396 kN (89,000 lbf)
Continuous tractive effort.....	254 kN at 24 km/h (57,000 lbf at 15.2 m.p.h.)
Length over buffers.....	21.35 m (70 feet 1/2 inch)
Width.....	2.64 m (8 feet 8 inches)
Height.....	3.91 m (12 feet 10 inches)
Maximum weight.....	127 tonnes (280 035 lbs)
Brake force.....	68 tonnes (149 940 lbs)
Maximum fuel capacity.....	6800 L (1500 gallons)
Minimum curve radius.....	80 m (262 feet 6 inches)
Route availability.....	RA7
Multiple working:.....	Class 59, Class 66, and Class 67

Current work at GM Diesel Division

These units were seen in various states of completion outside GM Diesel Division in London in May:

- Amtrak F59PHIs 450 and 451 (shipped to Chicago as GMDX 1001 and 1002).
- Frames and trucks for Amtrak F59PHIs, being shipped to SuperSteel in Schenectady, New York, for assembly there.
- Fuel tanks, short hoods, and radiator grilles for Burlington Northern and Santa Fe SD70MACs, being shipped to Bombardier-Concarril in Sahagun, Mexico, for assembly there.
- Frames and parts for Conrail SD70MACs, being shipped to Conrail in Altoona, Pennsylvania, for assembly there.
- English, Welsh and Scottish JT42CWR (Class 66) 66002.
- GM demonstrator SD90MAC-2s GMD-90 and GMD-91.

- Indian Railways GT46MACs 12003, 12004, 12005, 12006, 12007, and 12008.
- Union Pacific 4300-horsepower SD90MACs 8262, 8263, 8265, 8266, 8267, 8268, 8269, 8270, 8271, 8272, 8273, 8274, 8275, 8276, 8277, 8278, and 8279.
- UP 6000-horsepower SD90MACs 8508, 8509, 8510, 8511, and 8512.

GMD-90 and GMD-91 are the demonstrators for a new Phase II version of the SD90MAC model. They have a three-piece frame, newly-designed trucks, and a different style of cab.

Locomotive assembly

CPR has been awarded a contract to assemble, paint, and test 42 of the 61 AC locomotives it is purchasing from General Motors. The work will be done at Ogden Shops, where 23 locomotives will be built in the last half of 1998 and 19 in the first quarter of 1999. The remaining 19 in the order will be assembled at the GM plant in London.

CP's sales of retired MLWs

CP RS18s

- 1800 – On display in Machias, New York.
- 1803 – Sold to Four States Railway Service (Philadelphia, Pennsylvania), May 7
- 1807 – Retired, April 24, and sold for scrap to Century Metals (Lachine)
- 1811 – Sold to Tioga Scenic Railroad (Oswego, New York), April 30
- 1813 – Sold to New Brunswick East Coast Railway (NBEC), April 1
- 1814 – Sold to NBEC, April 17
- 1817 – Retired, April 24, and sold for scrap to Century Metals
- 1818 – Sold to NBEC, April 17
- 1821 – Sold to NBEC, April 1
- 1825 – Retired, April 24, and sold for scrap to Montreal Locomotive Sales (Lachine)
- 1826 – Retired, April 24, and sold for scrap to Century Metals
- 1831 – Sold for scrap to Century Metals
- 1834 – Sold to NBEC, April 17
- 1835 – Sold to NBEC, April 17
- 1837 – Sold to Minnesota Commercial
- 1838 – Retired, July 7
- 1840 – Sold to NBEC, April 1
- 1841 – Sold to NBEC, April 17

- 1845 – Sold to NBEC, April 17
- 1850 – Sold to Cayuga Railway Company (Oswego, New York), April 30
- 1851 – Sold to NBEC, April 1
- 1853 – Sold to NBEC, April 17
- 1854 – Sold to NBEC, April 1
- 1855 – Sold to NBEC, April 1
- 1856 – Sold to NBEC, April 17
- 1857 – Sold to NBEC, April 1
- 1858 – Sold to NBEC, April 17
- 1860 – Retired, May 5, and sold to Ontario Southland Railway; now OSRX 180.
- 1867 – Sold to NBEC, April 17
- 1868 – Sold to NBEC, April 1

CP C424s

- 4200 – Sold for scrap to Century Metals
- 4201 – Sold for scrap to Century Metals
- 4205 – Retired, April 24, and sold for scrap to Century Metals
- 4209 – Sold for scrap to Century Metals
- 4211 – Sold to Apache Railway
- 4216 – Retired, July 7
- 4221 – Sold for scrap to Century Metals
- 4227 – Sold to Apache Railway
- 4229 – Retired, April 24, and sold for scrap to Andrew Merrilees (Mascouche)
- 4230 – Retired, July 7
- 4233 – Sold to Apache Railway
- 4234 – Retired, April 24, and sold to Andrew Merrilees
- 4238 – Retired, May 5
- 4239 – Retired, April 24, and sold for scrap to Century Metals
- 4248 – Sold for scrap to Century Metals

CP M636

- 4711 – Sold to Minnesota Commercial

CN roster changes

Retirements

- GMD 11169..... May 28
- SW1200RS 1338..... May 13
- SW1200RS 1353..... May 14
- SW1200RS 1361..... May 27
- SD40 5005..... June 26
- SD40 5057..... May 25
- SD40 5065..... May 25
- SD40 5085..... June 19
- SD40 5087..... June 19
- SD40 5088..... May 5
- SD40 5089..... May 27

- SD40 5090..... May 27
- SD40 5147..... May 27
- SD40 5191..... May 25
- SD40 5214..... May 27
- GTW SD40 5929..... June 26
- GP40 9304..... June 1
- GP40 9306..... June 1
- GP40 9309..... May 27
- GP40-2 9538..... June 23
- GP40-2 9556..... June 23
- GP40-2 9582..... June 23

Motive power notes

Express Marco's U23B JMG1, for service on the Quebec Central Railway, was delivered by CLN from Charny, and is now at the Express Marco trucking yard in East Broughton. • General Electric will soon be delivering new AC4400CWs for CPR, to be numbered in the 8500-series, and new Dash 9-44CWs for QNS&L, to be numbered from 404 to 414.

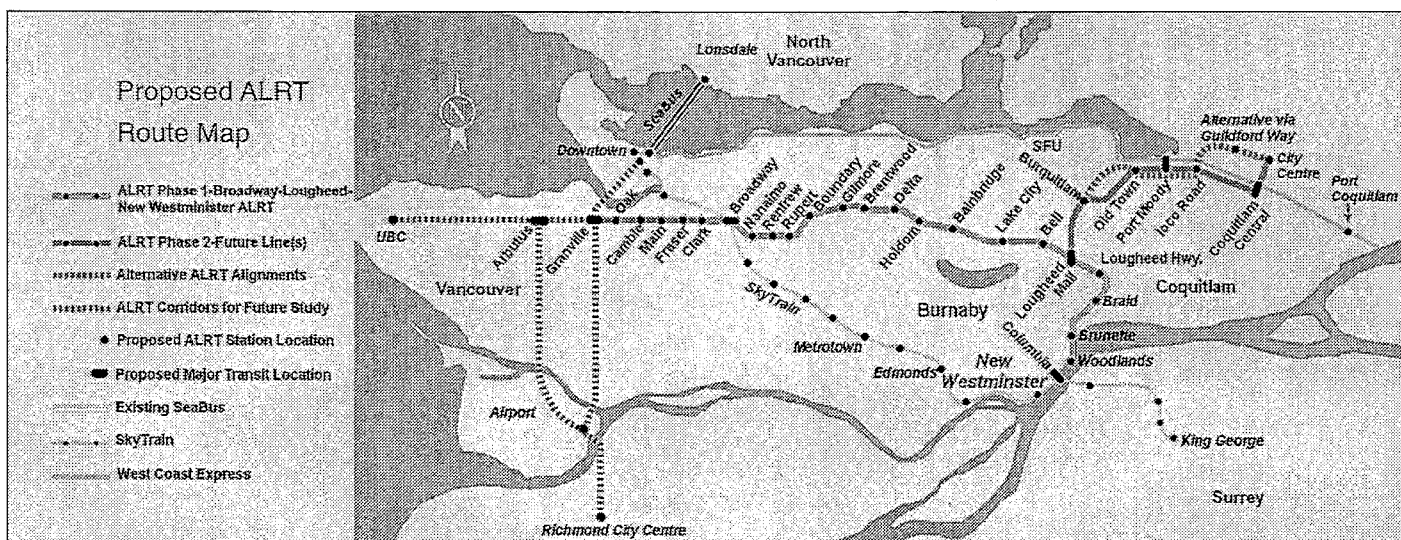
Motive Power sources: Ray Corley, Roman Hawryluk, John Legg, Bill Miller, FCRS Tempo Jr.

IN TRANSIT

New SkyTrain line

The B.C. government announced on June 24 an agreement with Bombardier to build a new east-west SkyTrain line along Broadway and the Lougheed Highway, and to establish a research and manufacturing plant in the Lower Mainland. A map of the proposed new lines is at the bottom of this page, taken from the project's web pages at www.lrtprojectoffice.com.

The first section of the new SkyTrain line between Vancouver and New Westminster will extend from Clark Drive in Vancouver to Columbia Station in New Westminster. It will connect with the present line at Broadway Station (at Commercial Drive) in Vancouver and at Columbia Station. A future branch to Coquitlam will connect at Lougheed Mall. Just as the current SkyTrain line runs along the B.C. Electric Railway's



Central Park interurban line for much of its length, the new line will be roughly parallel to the BCER's Burnaby Lake line.

Lines planned for the second phase of the new project are an extension west along Broadway from Clark to Granville Street and the branch from Lougheed Mall to Coquitlam. (Several alternatives are still being examined for the route to Coquitlam.)

Lines for further study are an extension west from Granville to the University of British Columbia, lines south to the airport and to Richmond along Arbutus Street or Granville Street, and a line from Granville and Broadway into downtown.

The B.C. government says that some sections of the Phase I alignment could be running in the fall of 2000, with completion of the first phase expected in 2001. (The previous plans for a light rail line had been for the line to be in service between Vancouver and Coquitlam by 2005, and on to New Westminster by 2008.) Construction on the \$1.17-billion project is planned to begin this summer.

An estimated 80 SkyTrain Mark II vehicles will be purchased for the extension. The Mark II vehicles are longer and wider than the cars used on the original SkyTrain line; the first customer for the Mark II cars is Putra, in Kuala Lumpur, Malaysia.

Also as part of the memorandum of understanding between the province and Bombardier, the manufacturing company will establish a Centre for Advanced Transit Systems in the Greater Vancouver area. The facility will be used for SkyTrain manufacturing, production, research, technology development, operation, maintenance and global marketing. Bombardier says that most manufacturing will still take place at their plant in Kingston, Ontario, which has produced all ALRT cars to date.

TTC subway signal changes

The use of flashing red aspects on the signal system on the TTC's subway, introduced as a limited trial after the August 11, 1995, fatal collision, is being expanded to the entire subway system.

The flashing red aspects are being introduced on existing grade-timed signals. These signals limit the speeds of trains, mostly on down-grades, by changing to green and lowering the trip arm only if the train is travelling under the prescribed speed.

In the past, the signals displayed a solid red aspect, and cleared to a green aspect if the train was in the timing circuit long enough, and thus travelling at the proper speed. The coroner's inquest after the 1995 accident recommended that the solid red aspect be supplemented by a different system, as the approach of a train to a red signal, with the expectation that the red would change to green, was seen as counter-intuitive.

In response, signals on the Bloor-

Danforth Subway between Old Mill and Royal York stations, and on the Spadina Subway between Dupont and St. Clair West stations (the site of the crash) were modified with the flashing red aspect in 1997. This is now being extended to the entire system. The existing signal heads are used, and the circuitry is modified so that the existing red signal can flash or remain solid. For interlocking signals, only the top red aspect, the block display, will flash. The bottom red aspect, the route display, will always remain solid. A lunar white aspect will continue to be used to show whether a clear signal can be expected if the train is operated at the correct speed.

A minimum of three flashes will be shown by the flashing red aspect. Where this not possible due to a short-approach timing section, the signal in advance of the timed signal will flash in unison with the timed signal to provide the sufficient number of flashes.

During the implementation period, each grade timing signal equipped to flash will have a temporary marker, to show that the signal is equipped. The marker has the letters "FLR" within a circle designed to symbolise a flashing signal.

The implementation timetable is given below. Signals in both directions on the line segments shown will be equipped by the dates given.

Yonge-University-Spadina

Finch to Sheppard (11 signals).....	June 19
Sheppard to Lawrence (20 signals).....	June 26
Lawrence to Bloor (8 signals).....	July 3
Bloor to Union (13 signals).....	July 17
Union to Museum (23 signals).....	July 24
Museum to Dupont (22 signals).....	Dec 4
Dupont to St. Clair West.....	Part of original test
St. Clair West to Eglinton West (32 signals).....	Dec 15
Eglinton West to Yorkdale (23 signals).....	Dec 16
Yorkdale to Downsview (26 signals).....	Dec 17

Bloor-Danforth

Kipling to Royal York (15 signals).....	September 12
Royal York to Old Mill.....	Part of original test
Jane to Woodbine (12 signals).....	October 8
Woodbine to Kennedy (26 signals).....	October 9
Greenwood Wye (13 signals).....	December 18

Used buses arrive

The TTC has purchased 100 used GM New Looks, built for and operated by Montréal's STCUM, from the Québec dealer Regor Inc. The vehicles cost about \$11 000 each, and date from 1979 and 1980. They will be put through the TTC's 18-year GM rebuild programme, and will replace in TTC service, one-for-one, New Flyer buses from 1987 and later which have suffered premature structural failure. While rust-free buses from the southern United States had been sought, the low price and certification to Canadian standards of the Montréal buses made them the best buy.

The Montréal buses are arriving at Hillcrest at the rate of about two per day. Among the first arrivals were 23-029 (built

September 1980, last registered in May 1997) and 23-082 (November 1980, August 1997), which arrived on July 21. By mid-August, more than a dozen were in storage at Hillcrest, and the first bus was in the shops, undergoing a trial rebuilding. It will emerge as bus 2600, so numbered to allow all 500 or so remaining TTC GMs to be renumbered below the Montreal buses in the 2000-series when they receive their 18-year rebuild.

The first rebuild will be used to evaluate the general condition of the buses, and to determine which unique Montréal features, including the gates which open the rear doors, will need to be replaced or removed.

—Dave Morgan, SH

First D40LF on property

TTC 7300, the precursor of 51 New Flyer D40LFs, was delivered to Hillcrest on July 24. It was driven from the NF plant in Minnesota.

The bus has 35 seats, including four forward-facing pairs on the rear upper deck. Other features: DD Series 50 engine; rear-mounted air-conditioning; seat frames and a wheelchair securement system from different manufacturers than other TTC buses; auxiliary heaters on the floor by the rear door; and a simple external paint scheme, with much black at the front. Large centre doors with a centre stanchion mean that this is the only one of the three low-floor types at the TTC that has a rear or centre door that will actually work as a two-stream exit.

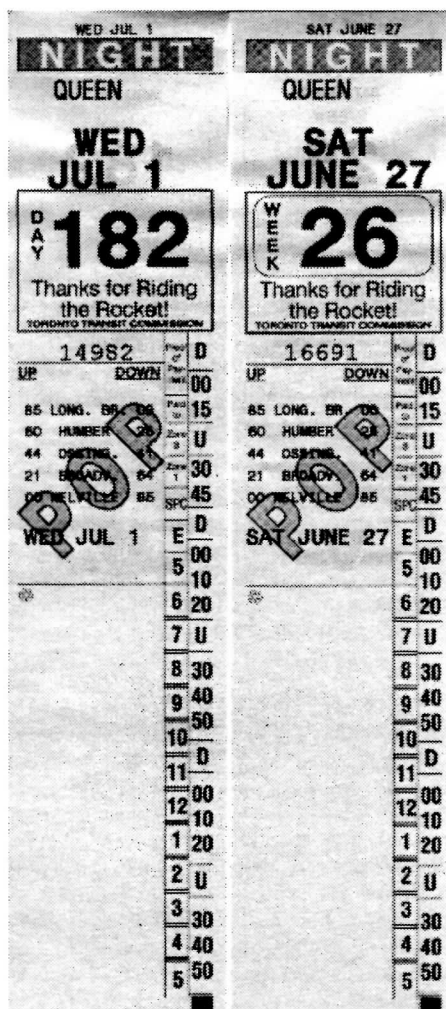
The bus is to be based at Eglinton Garage, and the remaining 50 are to come in 1999.

Other new bus notes

After delivery in June, the first RTS bus, 7200, was moved to Danforth Garage for commissioning. Several problems were found with the bus and its sub-systems, and it had not entered service by mid-August. Delivery of the remainder of the 52-bus order has been halted by the TTC. The buses will now not arrive in time for the September service increases. Unlike other recent deliveries, the RTS buses are not coming equipped with the TTC's CIS communications system, which requires additional time to install once delivered. • The RTS bus loaned to the TTC by manufacturer Nova Bus, numbered 1000 and in use out of Eglinton and Danforth divisions since late last year, was removed from service and returned to its owner on July 15. • The single Nova LFS low-floor bus at the TTC, 1001, entered service at Eglinton Garage in July. • All 50 Orion V low-floor CNG buses have now been delivered, and are in service. The last to arrive was bus 9242.

Transfer notes

On July 1, the TTC modified its bus and streetcar transfers by changing the large week number to a large day number. With this change, both surface and subway trans-



fers show the same information; the new design of subway transfer, introduced in 1996, has always shown the day numeral. Examples of both new (left) and old (right) transfers are shown above.

Just A. Ferronut's

RAILWAY ARCHAEOLOGY

Well, the warmer summer days make one want to relax and lay around in the sun, rather than bomb around the countryside pestering the various archives, libraries, and museums! But to keep my nasty image alive, I have been visiting a number of the Maritime establishments to learn what interesting stories and data they may have buried deep in their dark vaults and dusty storage rooms.

Another reason for some of these wanderings has been trying to check a few details for some of the crowd who are busy compiling books. While attempting to straighten out some corporate names and histories of a couple of Nova Scotia industrial railways for Don McQueen, I made a visit to the Nova Scotia Museum of Industry in Stellarton the other day. While they had a few paragraphs on the Intercolonial Coal

Mining Company, Limited, of Westville, one of the industrial railways of the central Nova Scotia coal mining region, I also turned up a few more details about a couple more Canadian railways that were built using wooden rails.

I am getting somewhere near the point, one of these months, of doing a sizeable article on railways with wooden rails across Canada. This would be an article with maps, detail photos, and sketches, and would compare some of the similarities and differences in these lines. Using these recent tidbits from Nova Scotia, I figured I would whet your appetite with a quick glance at a few of these wooden roads.

It appears that there were two types of rails used, those using squared timber and those that kept the top surface curved. Some of this latter type did have their bottom and sides squared, but the top was curved to permit the use of double-flanged wheels.

The findings, so far, indicate that the first of these railways were started about 1870. A second group appeared in the 1890s, and the most recent one I came across was started as late as 1939.

Of the early group, it appears that an American named J. B. Hulbert went to Québec, where he was able to talk the Provincial Legislature into approving six railways using his style of wooden rails. Two of these were built and probably the best known was the Québec and Gosford Wooden Railway, which extended slightly over 25 miles from Québec City to the Lac-Saint-Joseph area. The second, the Richelieu, Drummond and Arthabasca Railway, extended about 50 miles from Sorel to Drummondville, Québec. Among the other railways in this group of six was a part of what we know today as the Quebec Central Railway.

In New Brunswick, it was proposed in 1871 to construct the St. Martin and Upham Railway as a narrow-gauge line with wooden rails. While this line was constructed, wooden rails were not used.

In a similar vein, different accounts show up of early railways replacing broken rails with lengths of wood, until metal ones could be obtained.

Locomotives for the first group of railways used wheels with wide tires that would bear the full width of the squared wooden rails.

Nova Scotia had two railways constructed in the 1890s using wooden poles. At least one used poles with the bottom and sides squared. Unlike the early Québec lines that used wooden wedges to connect the squared rails to the ties, the Nova Scotia railways simply used square wharf spikes to fasten the poles to the ties.

One of these was the Castlereagh Railway, also known as the Bass River Pole Railway. This railway was constructed to carry silica sand from Lilica Lake, near

Castlereagh, to the Bass River Wharf. This railway used spruce poles for rails and operated for about ten years from 1895 until the processing plant was destroyed by fire in 1905.

The second Nova Scotia pole railway, the Weymouth and New France Railway, was also started in 1895. When finished two years later, it extended some 12 to 14 miles from Emile Stehelin's mills in a community called New France, through Southville, to a connection with the Dominion Atlantic Railway southwest of Weymouth. The Weymouth and New France Railway lasted until 1907, when its tracks were totally destroyed by fire.

The Weymouth and New France Railway's first engine, the *Flyer*, was built on site, and referred to as consisting of a boiler and a 20 horsepower engine setting on a small four-wheeled truck with a tender suitable to hold cordwood for its fuel.

Robb Engineering of Amherst, Nova Scotia, got into the locomotive construction business and built locomotives for both of these Nova Scotia pole railways. Now, whether these railways were the first to use a double-flanged wheel or not, these do appear to have become the "standard" for future Canadian pole railways. The wheel arrangement was shaped somewhat like a latter-day car or truck rim, and the design permitted it to bear on the curved top surface of the pole rails. The Weymouth and New France Railway's second locomotive, built in 1897, the *Maria Theresa*, had a wood-burning boiler fuelling a four-cylinder 80-horsepower engine, mounted on two four-wheeled trucks. The tender was on two single-axle trucks.

This company followed an approach similar to that of its locomotives for its coaches. Stehelin's company built its first coach that was described as "a gem of ingenuity and artistry." Later it had Rhodes and Curry, of Amherst, build it a coach called the *Caribou*.

While I have not collected much on them, a number of west coast lumber companies built and operated pole railways. Their cheapness and ease of construction made them quite suitable for the task of hauling lumber.

One of the most recent Eastern Canadian pole railways was one constructed about the beginning of the second world war to reach mining and prospecting sites in Bourlamaque Township, a little southeast of Rouyn, Quebec. This pole road, as described by Marcel Deschambault in the April 1975 issue of *Canadian Rail*, was used to haul material and food to the mining camps. This line, known as the Bourlamaque Central Railway, was built by Louis Abel, and lasted until it was destroyed by fire in 1944.

Unlike the other eastern wooden railways, the Bourlamaque Central Railway used internal combustion engines in its mo-

tive power. This was the same approach used by most of the western lumber operators. Mr. Deschambault details how the railway used a Ford four-cylinder 1933 truck as the mainstay of its motive power.

So, I hope that before long I can get things in gear and use the various pieces I have collected, along with Robert R. Brown's writings on the Quebec and Gosford Wooden Railway, to take a broader look at these wooden roads from a present-day perspective.

A non-operated mystery

Among some of the other goodies that I came across at the Nova Scotia Museum of Industry was a short item on a railway that was apparently built, but was condemned before opening, and therefore never operated. Sounds like a bit of a waste of someone's money!

The Cumberland Coal and Railway Company was federally incorporated in 1883 to acquire the Springhill and Parrsboro Coal and Railway Company's property, and to extend the line to West Bay and Oxford. The goal was to permit Springhill coal to be moved to the ports of Pugwash and Wallace where it could be shipped, by boat, to compete more favourably with Cape Breton coal in the central Canadian markets. Cape Breton coal was being shipped by water at a cost of \$1.25 per ton, while Springhill coal was costing \$2.50 a ton to ship by railway.

The Cumberland Coal and Railway Company, with a federal subsidy in hand, completed fourteen miles between a point on the Springhill-Parrsboro route and one on the short line at Oxford.

Today, the line we remember through Oxford was Canadian National's Oxford Subdivision. This line had been originally touted by Sir Sandford Fleming, as part of his plan for his global "All-Red-Route," with which he planned to show the British mastery around the globe. The Canadian railway portion was to be known as the Great American and Short Line Railway Company. While CN's Oxford Subdivision did finally connect Oxford Junction, N.S., on the Intercolonial Railway, with New Glasgow, N.S., Sandford Fleming's dream remained just that, for on the North American side of things he had seriously underestimated the roughness of the Newfoundland terrain and its effect on his equation for train speeds, and of course he was never able to find backers with pockets deep enough to back his grandiose scheme.

So at this point, the faux pas relating to matters surrounding this 14 miles of railway, that didn't get to see regular traffic, is one more cloud among the many in Canadian railway history.

This switching was heavy work

Another interesting item from the Stellarton Museum. The above-mentioned Intercolonial Coal Mining Company, Limited, built

and opened a railway line from their Drummond colliery in Westville, N.S., through Mount William to Granton, a distance of 73 miles, in 1868. This was a narrow-gauge line.

Shortly after, in 1868, the Nova Scotia Coal Company opened a railway between its Bear Creek mines in Westville, through Alma, to an outlet on Pictou harbour, also at Granton, on the Middle River. This line was six miles long. The Nova Scotia Coal Company stopped operating in 1875. In 1887 their properties were bought by the locally-owned Black Diamond Company. Part of the Nova Scotia Coal Company's line had been sold to become a portion of the "short line" to Pictou, which later became CN's Oxford Subdivision, mentioned above. After this sale, the Black Diamond Company built a siding that crossed the Intercolonial Coal Mining Company, Limited, line near the wharves at Granton.

Possibly to avoid capital costs, or perhaps to meet the dictates of corporate politics, this railway crossing near the Granton wharves had no fixed or permanent diamond. Black Diamond coal trains would come up from Westville and stop just short of the Intercolonial Coal line. The Black Diamond train crew would then place specially-made high ties in position, and then on these they would lay rails across and over the ICC tracks. The coal train moved slowly over the temporary crossing. They would unload their coal, and on the return journey, after crossing back over the ICC's track, the crew would dismantle the intersection. And you thought train crews had it easy!

The Black Diamond Company was sold to Acadia Coal Company in 1891. The Acadia Coal Company was taken over by the Nova Scotia Steel and Coal, which later became a subsidiary of Dominion Coal Company, Limited.

Speed

At different times we have published articles on train speeds and how they have changed over the years. While doing some digging about an early New Brunswick and Canada Railway locomotive, I came across a couple of articles about a locomotive that was rebuilt in 1892 at Canadian Pacific's McAdam, N.B., railway shops, and the first trips of the locomotive after its rebuilding.

The locomotive, known as "The Flyer" (the local name for it, and not the same Flyer mentioned for the Weymouth and New France Railway), was assigned to a Tom McKenna as driver. Under the watchful eye of Mr. G. A. Haggerty, the mechanical superintendent of the division, Mr. McKenna first ran his engine up and down the old main line between McAdam and St. Stephen; then two trips, north, on freights to Woodstock; and finally on the *Atlantic and Pacific Expresses*. The McAdam Division operated the

portion of this express train between Saint John, N.B., and Brownville Junction, Maine.

Then on Friday, July 29, 1892, the real test came, as this engine was to operate from Saint John to St. Andrews, via McAdam, a distance of 127 miles, pulling a train carrying Mr. Van Horne and his party. The trip took two hours and 33 minutes, at an average rate of 48 m.p.h. This time included stops, which occupied some considerable time, as one was of five minutes and another was of eight minutes.

From Saint John to Fredericton Junction, the train ran at the rate of 52 m.p.h., and the whole run from Saint John to McAdam was made in one hour and forty minutes. Between McAdam and Watt Junction, the crew achieved the rate of one mile a minute. The articles concluded by noting that this train had covered the 13 miles between Welsford and Hoyt, (on the Saint John-McAdam section) in nine minutes. And to think your ambition was once to become a fireman on a steam engine!

More trails from old rights-of-way

One item that I missed from last month's column related to the conversion to a trail of 14.2 kilometres of the long-abandoned Salisbury and Albert Railway's right-of-way. The trail extends from Riverside-Albert northward along the Shepody Bay, through the Hopewell Hill marshes. At the opening of this trail in May, it was noted that it had a couple of distinctions. It is apparently the first trail in Canada to be multi-use, permitting horses, as well as hikers and cyclists. In addition, it is the first trail to use the services of St. John Ambulance Cadets to patrol the trail on bicycles. These patrols are equipped with cellular telephones, first aid kits, and bicycle repair tools.

More steam for Canada

While this item will no doubt be covered under news, it is interesting to note that Canada is obtaining another steam locomotive to its collection of active ones. Tom Payne, founder of the Central Western Railway in Alberta, has purchased ex-Reading T1 4-8-4 No. 2100. This locomotive had, prior to its sale, been on the Ohio Central Railway at Coshocton, Ohio, where it had operated until recently. While being towed on its delivery trip, Mr. Payne, for publicity purposes, had Canadian National separate the locomotive and its tool car from west-bound Train 402, as it crossed between Niagara Falls, New York, and Canada on Wednesday, June 24, 1998. As these two pieces of historical equipment sat at the centre of CN's Suspension Bridge, a waiting helicopter proceeded to take pictures for about ten minutes. Afterwards, the train was reconnected, and the locomotive began its Canadian journey to the former Canada Southern Railway shops in St. Thomas, Ontario.

INFORMATION NETWORK

Item 84

VIA equipment cycle

From: **TrtoPsgr study group**

In the May 1997 issue of *Rail and Transit*, we presented an outline of the type of equipment assigned to each VIA train, and some description of how VIA cycles its equipment between runs on long-distance trains.

The table which begins below and extends onto Page 20 shows the details of how VIA schedules its equipment on intercity trains in southern Ontario and Québec.

The table shows that there are 20 sets of LRC cars and five sets of stainless steel HEP2 cars in regular use. Three of the LRC sets cycle exclusively between Québec-Montréal trains, and two sets make daily round trips between Montréal and Toronto on the morning trains and the high-speed afternoon expresses. The other 15 sets of LRC cars provide most of the rest of VIA's service to the "corridor," cycling between Montréal, Ottawa, Toronto, Windsor, and Sarnia. The HEP2 sets make the daily run from Montréal to Windsor, through, Toronto, on the "baggage car" trains, and also cycle onto trains from Toronto to Kingston, Niagara Falls, and London.

Each row in the table shows a week's

work for one train-set, listing the trains operated by the set each day, and the total mileage covered by that set each day, and at the left, each week. At the right is the set number that those cars will become in the following week.

VIA uses its planned equipment cycling to maximise the use of its equipment and to ensure that all cars return to the maintenance centre in Montréal at appropriate intervals. The planned cycles can be changed by any number of intervening events, however, such as heavy demand on certain trains (such as on long weekends), late-running trains that cannot achieve their run-through connections, or equipment problems with particular cars.

There are some specific planned equipment cycles which are unusual and interesting. While the westbound "baggage car" train runs directly each day from Montréal to Windsor as Trains 57 and 75, on most days of the week the set is broken in two when it returns to Toronto as Train 70. The baggage car and some of the coaches of Train 70 continue to become Train 60 for Montréal, but the other coaches cycle to Train 650 from Toronto to Kingston. The cars which came in that morning from Niagara Falls on Train 90 make up the rest of Train 60 to Montréal. This is how VIA uses its HEP2 cars on local runs out of Toronto

but ensures that they all get back to Montréal for maintenance every few days.

The table also shows HEP2 set No. 5 as being used on Toronto-Kitchener-London Train 87 on Friday afternoons, but then returning on Windsor-Toronto Train 78 on Saturday. Perhaps someone in the London area can tell us whether 87's equipment is taken to Windsor by another train or whether 78 lifts the cars in London to return them to Toronto.

Changes may have been made to this plan since the timetable change on June 14; at least one operating change has been made since then. For the first few days of the new timetable, the combined trains 48 and 650 ran east from Toronto as a "J-train," with the F40 and LRC cars making up 48's train leading the F40 and HEP2 cars running as 650; the tail-end section would then be cut off in Kingston and turned overnight after the front section had continued to Ottawa. Now, 650's section on the rear runs back-to-back with 48's equipment; at Kingston, the pin is pulled as 48 moves on for Ottawa, and 650's equipment is parked overnight but does not need to be turned to return to Toronto the next morning. This change simplifies the operation in Kingston, but requires that a west-facing locomotive be coupled to the cars every day in Toronto.

VIA equipment cycle for Ontario and Québec intercity trains, June 1998

TRAIN SET	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY	TO
LRC Set 1 3042 miles	21: Qbec-Mtrl 22: Mtrl-Qbec 27: Qbec-Mtrl 507 miles	20: Mtrl-Qbec 25: Qbec-Mtrl 26: Mtrl-Qbec 507 miles	23: Qbec-Mtrl 24: Mtrl-Qbec 338 miles	21: Qbec-Mtrl 22: Mtrl-Qbec 27: Qbec-Mtrl 507 miles	20: Mtrl-Qbec 25: Qbec-Mtrl 26: Mtrl-Qbec 507 miles	621: Qbec-Mtrl 22: Mtrl-Qbec 338 miles	621: Qbec-Mtrl 22: Mtrl-Qbec 338 miles	Set 1
LRC Set 2 2535 miles	23: Qbec-Mtrl 26: Mtrl-Qbec 338 miles	23: Qbec-Mtrl 24: Mtrl-Qbec 338 miles	21: Qbec-Mtrl 22: Mtrl-Qbec 27: Qbec-Mtrl 507 miles	20: Mtrl-Qbec 25: Qbec-Mtrl 26: Mtrl-Qbec 507 miles	23: Qbec-Mtrl 24: Mtrl-Qbec 338 miles	27: Qbec-Mtrl 169 miles	620: Mtrl-Qbec 27: Qbec-Mtrl 338 miles	Set 3
LRC Set 3 2873 miles	20: Mtrl-Qbec 169 miles	21: Qbec-Mtrl 22: Mtrl-Qbec 27: Qbec-Mtrl 507 miles	20: Mtrl-Qbec 25: Qbec-Mtrl 26: Mtrl-Qbec 507 miles	23: Qbec-Mtrl 24: Mtrl-Qbec 338 miles	21: Qbec-Mtrl 22: Mtrl-Qbec 27: Qbec-Mtrl 507 miles	620: Mtrl-Qbec 25: Qbec-Mtrl 26: Mtrl-Qbec 507 miles	25: Qbec-Mtrl 26: Mtrl-Qbec 338 miles	Set 3
LRC Set 4 4020 miles	52: Trto-Mtrl 67: Mtrl-Trto 670 miles	52: Trto-Mtrl 67: Mtrl-Trto 670 miles	52: Trto-Mtrl 67: Mtrl-Trto 670 miles	52: Trto-Mtrl 67: Mtrl-Trto 670 miles	52: Trto-Mtrl 67: Mtrl-Trto 670 miles	52: Trto-Mtrl 335 miles	67: Mtrl-Trto 335 miles	Set 4
LRC Set 5 4020 miles	53: Mtrl-Trto 66: Trto-Mtrl 670 miles	53: Mtrl-Trto 66: Trto-Mtrl 670 miles	53: Mtrl-Trto 66: Trto-Mtrl 670 miles	53: Mtrl-Trto 66: Trto-Mtrl 670 miles	53: Mtrl-Trto 66: Trto-Mtrl 670 miles	53: Mtrl-Trto 335 miles	66: Trto-Mtrl 335 miles	Set 5
LRC Set 6 3015 miles	33: Mtrl-Ottw 45: Ottw-Trto 393 miles	64: Trto-Mtrl 335 miles	33: Mtrl-Ottw 47: Ottw-Trto 393 miles	40: Trto-Ottw 47: Ottw-Trto 554 miles	40: Trto-Ottw 47: Ottw-Trto 554 miles	642: Trto-Ottw 36: Ottw-Mtrl 393 miles	33: Mtrl-Ottw 645: Ottw-Trto 393 miles	Set 7
LRC Set 7 2907 miles	56: Trto-Mtrl 37: Mtrl-Ottw 451 miles	41: Ottw-Trto 68: Trto-Mtrl 612 miles	61: Mtrl-Trto 79: Trto-Wdon 558 miles	72: Wdon-Trto 48: Trto-Ottw 500 miles	32: Ottw-Mtrl 35: Mtrl-Ottw 49: Ottw-Trto 509 miles	At TMC 0 miles	46: Trto-Ottw 277 miles	Set 15
LRC Set 8 3746 miles	61: Mtrl-Trto 79: Trto-Wdon 558 miles	72: Wdon-Trto 48: Trto-Ottw 500 miles	32: Ottw-Mtrl 35: Mtrl-Ottw 49: Ottw-Trto 509 miles	56: Trto-Mtrl 37: Mtrl-Ottw 451 miles	41: Ottw-Trto 64: Trto-Mtrl 612 miles	33: Mtrl-Ottw 645: Ottw-Trto 79: Trto-Wdon 616 miles	74: Wdon-Trto 48: Trto-Ottw 500 miles	Set 16
LRC Set 9 3635 miles	41: Ottw-Trto 48: Trto-Ottw 554 miles	32: Ottw-Mtrl 35: Mtrl-Ottw 49: Ottw-Trto 509 miles	56: Trto-Mtrl 37: Mtrl-Ottw 451 miles	41: Ottw-Trto 68: Trto-Mtrl 612 miles	61: Mtrl-Trto 79: Trto-Wdon 558 miles	72: Wdon-Trto 68: Trto-Mtrl 558 miles	635: Mtrl-Ottw 49: Ottw-Trto 393 miles	Set 11

VIA equipment cycle for Ontario and Québec intercity trains, June 1998 (continued)

TRAIN SET	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY	TO
LRC Set 10	31: Mtrl-Ottw 43: Ottw-Trto 83: Trto-Sarn 3442 miles 567 miles	82: Sarn-Trto 44: Trto-Ottw 36: Ottw-Mtrl 567 miles	31: Mtrl-Ottw 43: Ottw-Trto 83: Trto-Sarn 567 miles	82: Sarn-Trto 64: Trto-Mtrl 509 miles	33: Mtrl-Ottw 45: Ottw-Trto 393 miles	73: Trto-Wdon 78: Wdon-Trto 446 miles	642: Trto-Ottw 34: Ottw-Mtrl 393 miles	Set 10
LRC Set 11	42: Trto-Ottw 34: Ottw-Mtrl 69: Mtrl-Trto 3580 miles 728 miles	71: Trto-Wdon 76: Wdon-Trto 446 miles	40: Trto-Ottw 36: Ottw-Mtrl 393 miles	31: Mtrl-Ottw 43: Ottw-Trto 77: Trto-Wdon 616 miles	74: Wdon-Trto 48: Trto-Ottw 500 miles	32: Ottw-Mtrl 69: Mtrl-Trto 451 miles	71: Trto-Wdon 76: Wdon-Trto 446 miles	Set 12
LRC Set 12	40: Trto-Ottw 47: Ottw-Trto 3348 miles 554 miles	40: Trto-Ottw 277 miles	30: Ottw-Mtrl 65: Mtrl-Trto 451 miles	73: Trto-Wdon 78: Wdon-Trto 446 miles	42: Trto-Ottw 34: Ottw-Mtrl 69: Mtrl-Trto 728 miles	71: Trto-Wdon 76: Wdon-Trto 446 miles	73: Trto-Wdon 78: Wdon-Trto 446 miles	Set 13
LRC Set 13	46: Trto-Ottw 277 miles	30: Ottw-Mtrl 65: Mtrl-Trto 451 miles	73: Trto-Wdon 78: Wdon-Trto 446 miles	42: Trto-Ottw 34: Ottw-Mtrl 69: Mtrl-Trto 728 miles	71: Trto-Wdon 76: Wdon-Trto 446 miles	64: Trto-Mtrl 335 miles	61: Mtrl-Trto 79: Trto-Wdon 558 miles	Set 14
LRC Set 14	72: Wdon-Trto 64: Trto-Mtrl 2679 miles 558 miles	33: Mtrl-Ottw 45: Ottw-Trto 393 miles	46: Trto-Ottw 277 miles	30: Ottw-Mtrl 65: Mtrl-Trto 451 miles	73: Trto-Wdon 78: Wdon-Trto 446 miles	At TMC 0 miles	44: Trto-Ottw 36: Ottw-Trto 554 miles	Set 6
LRC Set 15	30: Ottw-Mtrl 65: Mtrl-Trto 3308 miles 451 miles	73: Trto-Wdon 78: Wdon-Trto 446 miles	42: Trto-Ottw 34: Ottw-Mtrl 69: Mtrl-Trto 728 miles	71: Trto-Wdon 76: Wdon-Trto 446 miles	44: Trto-Ottw 36: Ottw-Mtrl 393 miles	635: Mtrl-Ottw 49: Ottw-Trto 393 miles	56: Trto-Mtrl 37: Mtrl-Ottw 451 miles	Set 9
LRC Set 16	32: Ottw-Mtrl 35: Mtrl-Ottw 49: Ottw-Trto 3264 miles 509 miles	56: Trto-Mtrl 37: Mtrl-Ottw 451 miles	41: Ottw-Trto 68: Trto-Mtrl 612 miles	61: Mtrl-Trto 83: Trto-Sarn 509 miles	82: Sarn-Trto 46: Trto-Ottw 451 miles	630: Ottw-Mtrl 37: Mtrl-Ottw 232 miles	43: Ottw-Trto 77: Trto-Wdon 500 miles	Set 20
LRC Set 17	82: Sarn-Trto 44: Trto-Ottw 36: Ottw-Mtrl 2590 miles 567 miles	31: Mtrl-Ottw 43: Ottw-Trto 83: Trto-Sarn 567 miles	82: Sarn-Trto 174 miles	46: Trto-Ottw 277 miles	30: Ottw-Mtrl 65: Mtrl-Trto 451 miles	640: Trto-Ottw 277 miles	47: Ottw-Trto 277 miles	Set 18
LRC Set 18	73: Trto-Wdon 78: Wdon-Trto 3488 miles 446 miles	42: Trto-Ottw 34: Ottw-Mtrl 69: Mtrl-Trto 728 miles	71: Trto-Wdon 76: Wdon-Trto 446 miles	44: Trto-Ottw 36: Ottw-Mtrl 393 miles	31: Mtrl-Ottw 43: Ottw-Trto 83: Trto-Sarn 567 miles	682: Sarn-Trto 648: Trto-Ottw 457 miles	32: Ottw-Mtrl 69: Mtrl-Trto 451 miles	Set 19
LRC Set 19	71: Trto-Wdon 76: Wdon-Trto 2470 miles 446 miles	At TMC 0 miles	64: Trto-Mtrl 335 miles	33: Mtrl-Ottw 45: Ottw-Trto 79: Trto-Wdon 616 miles	72: Wdon-Trto 68: Trto-Mtrl 558 miles	65: Mtrl-Trto 335 miles	683: Trto-Sarn 180 miles	Set 17
LRC Set 20	74: Wdon-Trto 68: Trto-Mtrl 3548 miles 558 miles	61: Mtrl-Trto 79: Trto-Wdon 558 miles	72: Wdon-Trto 48: Trto-Ottw 500 miles	32: Ottw-Mtrl 35: Mtrl-Ottw 49: Ottw-Trto 509 miles	56: Trto-Mtrl 37: Mtrl-Ottw 451 miles	641: Ottw-Trto 683: Trto-Sarn 457 miles	682: Sarn-Trto 68: Trto-Mtrl 515 miles	Set 8
HEP2 Set 1	57: Mtrl-Trto 75: Trto-Wdon 3131 miles 558 miles	70: Wdon-Trto* 60: Trto-Mtrl+ 650: Trto-Kgon 558/381 miles	651: Kgon-Trto 87: Trto-Lndn 279 miles	86: Lndn-Trto 95: Trto-Niag 203 miles	90: Niag-Trto 60: Trto-Mtrl+ 417 miles	57: Mtrl-Trto 75: Trto-Wdon 558 miles	670: Wdon-Trto 60: Trto-Mtrl 558 miles	Set 1
HEP2 Set 2	70: Wdon-Trto* 60: Trto-Mtrl+ 650: Trto-Kgon 2813 miles 558/381 miles	651: Kgon-Trto 87: Trto-Lndn 279 miles	86: Lndn-Trto 95: Trto-Niag 203 miles	90: Niag-Trto 60: Trto-Mtrl+ 417 miles	57: Mtrl-Trto 75: Trto-Wdon 558 miles	70: Wdon-Trto* 60: Trto-Mtrl+ 95: Trto-Niag 558/305 miles	92: Niag-Trto 650: Trto-Kgon 240 miles	Set 4
HEP2 Set 3	90: Niag-Trto 60: Trto-Mtrl+ 2990 miles 417 miles	57: Mtrl-Trto 75: Trto-Wdon 558 miles	70: Wdon-Trto* 60: Trto-Mtrl+ 650: Trto-Kgon 558/381 miles	651: Kgon-Trto 87: Trto-Lndn 279 miles	86: Lndn-Trto 95: Trto-Niag 203 miles	92: Niag-Trto 60: Trto-Mtrl+ 417 miles	57: Mtrl-Trto 75: Trto-Wdon 558 miles	Set 2
HEP2 Set 4	657: Mtrl-Trto 87: Trto-Lndn 2681 miles 456 miles	86: Lndn-Trto 95: Trto-Niag 203 miles	90: Niag-Trto 60: Trto-Mtrl+ 417 miles	57: Mtrl-Trto 75: Trto-Wdon 558 miles	70: Wdon-Trto* 60: Trto-Mtrl+ 650: Trto-Kgon 558/381 miles	655: Kgon-Trto 158 miles	73: Trto-Wdon 78: Wdon-Lndn 331 miles	Set 5
HEP2 Set 5	86: Lndn-Trto 95: Trto-Niag 203 miles	90: Niag-Trto 60: Trto-Mtrl+ 417 miles	57: Mtrl-Trto 75: Trto-Wdon 558 miles	70: Wdon-Trto* 60: Trto-Mtrl+ 650: Trto-Kgon 558/381 miles	651: Kgon-Trto 87: Trto-Lndn ** 223 miles	78: Wdon-Trto 223 miles	95: Trto-Niag 82 miles	Set 3

Station codes,
symbols, and notes

Qbec – Québec
Mtrl – Montréal
Ottw – Ottawa

Kgon – Kingston
Trto, TMC – Toronto
Niag – Niagara Falls

Lndn – London
Wdon – Windsor
Sarn – Sarnia

* – Set split
+ – Set combined
** – Cycle unknown

Mileages are calculated
between stations, and do
not include switching.