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Rail and Transit

Canada's Railway Magazine

November - December 1979

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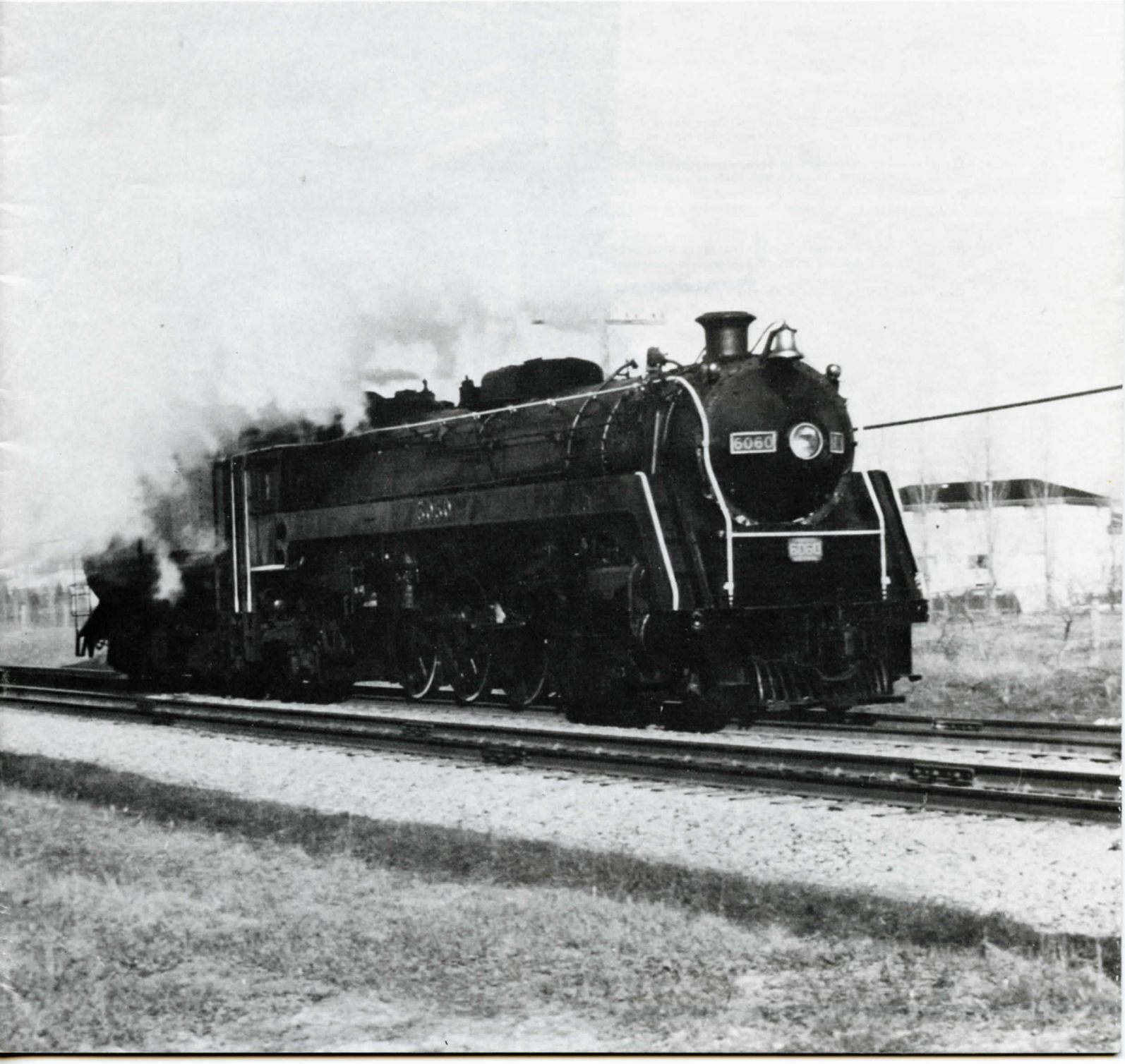


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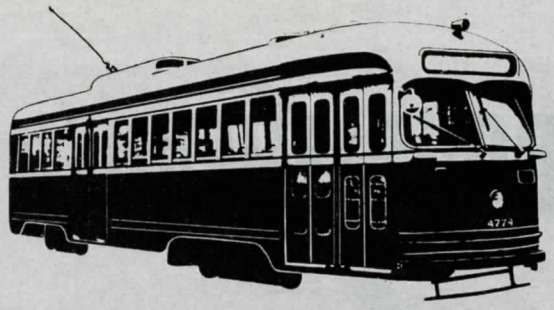

NOVEMBER - DECEMBER 1979

VOLUME 4 NUMBER 6

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RAIL AND TRANSIT is published bimonthly by the Upper Canada Railway Society and subscriptions may be obtained from the publisher at P.O. Box 122, Postal Station "A". Toronto, Ontario M5W 1A2. The Upper Canada Railway Society has been engaged in publishing railway material since its conception in 1941 and that of its predecessor in 1935.

FRONT COVER: CN's last operating steam locomotive #6060 heading eastbound on the Kingston Subdivision on a light engine move to Montreal. Photo taken by David Stremes close to the Manse Road crossing in West Hill.
OPPOSITE: Train #15 "The Ocean" westbound from Halifax to Montreal, seen here at Oxford Jct., Nova Scotia. On the point is #6758, one of the two FPA-2's left running. (K.A. Gansel)
BACK COVER: An aerial view of the Wilson subway station and yards at the north end of the new Spadina Subway line. (T.T.C. Photo)

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A DOUBLEHEADER REMEMBRANCE

by Charles Cooper

The Upper Canada Railway Society excursion to Collingwood on June 2nd. 1979 (for details see September - October 1979 RAIL AND TRANSIT) properly recognized the 125th. anniversary of the coming of the Northern Railway of Canada to Collingwood.

By coincidence this was within a few months of the 100th. anniversary of the arrival of the Hamilton and Northwestern Railway to the town on a chilly December 31st. 1878. In contrast to all of the fond remembrances that attach to the Northern, it is barely remembered today that the standard gauge line constructed out of Hamilton in 1875 across the beach to Burlington and thence northward through Milton, Georgetown and Beeton, then forking to Barrie and the northwest via Creemore "up the back 40" to Collingwood, was originally an independant railway company organized by Hamilton business interests in 1872 to tap the lumber resources of Simcoe County and whatever lake trade was to be had off Georgian Bay and Lake Simcoe.

Hamilton in the 1850's was competing with Toronto to be the Queen City. It had serious aspirations of rivalling Toronto as the financial centre of Upper Canada, but to compete, you had to have a railway.

Toronto had its Northern Railway, which started out as the Ontario, Simcoe and Huron Union Railroad, which had driven up through King, Aurora, newmarket, Bradford, to Barrie in the 1850's and had an economic hammerlock on the entire area.

The idea of another railway to compete with the Northern was greeted with celebration by the people now being served by the Northern. They figured, quite correctly, that competition would reduce freight rates.

The new line would also give an important shot in the arm to communities not then served by a rail line.

The Hamilton and Northwestern was Hamilton's "own" railway. The earlier Hamilton and Port Dover project (1853) had run into financial problems and was replaced by the Hamilton and Lake Erie Railway, which in turn became incorporated into the Hamilton and Northwestern in 1875 when railway financing was suffering considerable setbacks. Times were hard and the Port Dover project had been bogged down in successive financial and engineering quagmires. By 1873 the line had only got as far as Jarvis and it took the Hamilton and Northwestern to put rails into Port Dover by 1878, in fact the railway arrived there and at Collingwood at approximately the same time. The Hamilton and Northwestern then stretched from Port Dover to Collingwood and Barrie and their first train steamed into Collingwood on a wild and stormy New Years Eve.

Collingwood and Barrie saw the newcomer as competition to the entrenched Northern Railway with the hope that this would do something to lower the freight rates. This sanguine expectation was dashed in a very untimely fashion with the sudden announcement that the two roads would amalgamate, maintaining separate boards of management, but pooling their resources and profits. The dissapointment up in Georgian Bay and over by Lake Simcoe was nothing compared to the anger of Hamilton - the last straw being when "Hamilton" disappeared from the name of the Company for it to be known as the Northern and Northwestern until 1888 when the road was swallowed up in "the capacious maw" of the Grand Trunk System.

It is clear from a contemporary prospectus that the promoters of the road had plans to push the line north to Lake Nipissing to connect with the planned CPR - in fact, although this railway never got further north than Barrie, the planned route followed the subsequent CPR right-of-way remarkably closely.

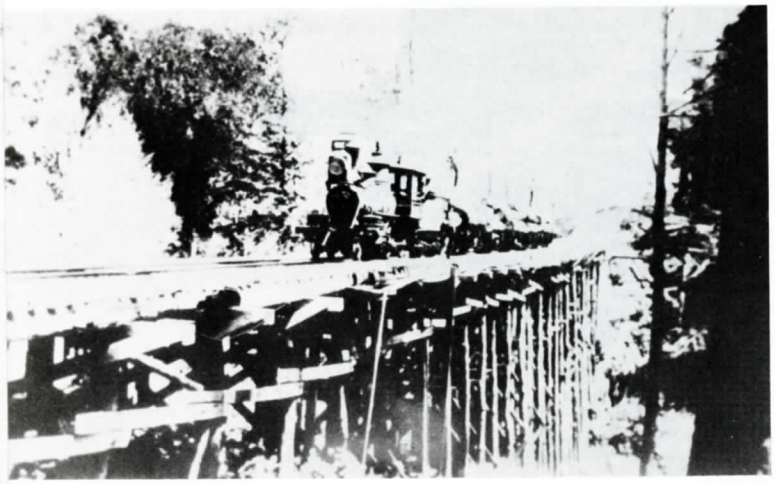
The common aim was the incentivefor the two roads to amalgamate, especially as they were both in a healthy financial condition. True, the Northern was suffering from equipment shortages but there was no evidence to show that mixed gauge was contemplated so there was no immediate prospect of pooling until the decision was made to convert the Northern to standard gauge, although it had undoubtedly been "in the works" for some time. The amalgamation brought about the desired objective of hooking up with the transcontinental railway but construction though the Muskokas had been fearfully expensive.

The increasing political influence in the direction of the affairs of the road together with the impact of the Northern and Pacific Junction scandal made takeover by the Grand Trunk inevitable.

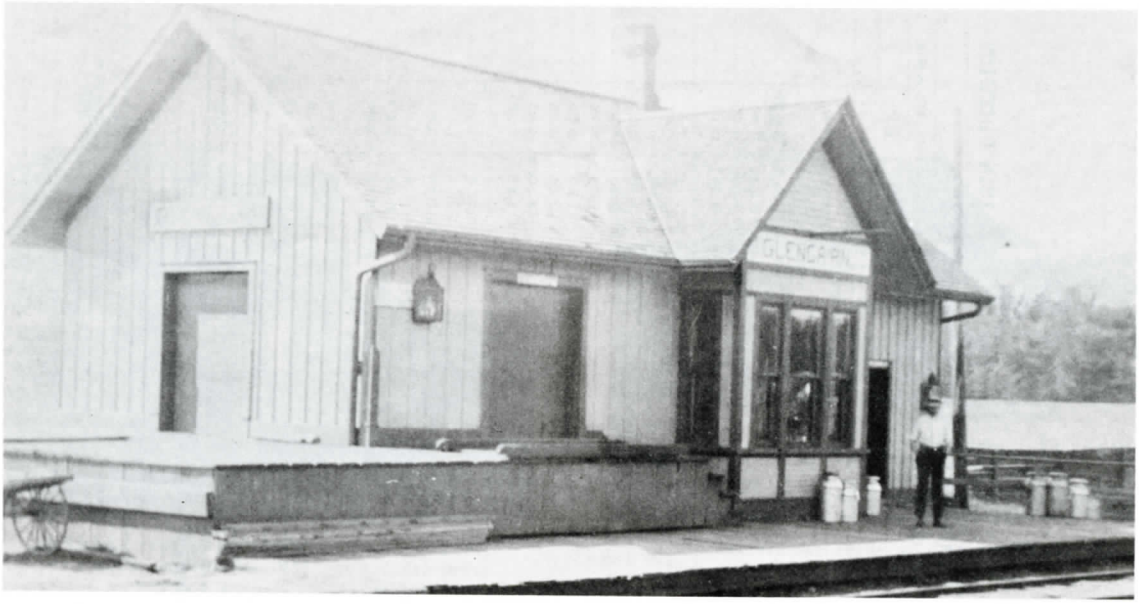
With the aquisition by the Grand Trunk, the line continued to enjoy excellent patronage until after World War II. In its time, the line carried a lot of heavy and local freight along its entire length - today the only portion of the line which carries on that tradition is the section between Burlington and Georgetown as part of the access route from the west to the Concord marshalling yards.

There is still a way-freight service between Hamilton and Jarvis and between Allandale (Barrie) via Allimil to Alliston and an occasional boxcar along the Burlington Beach, but other than the old Hamilton and Northwestern is a fond memory. Likewise until the turn of the century there were three passenger trains a day each way (some parts of the line did not have Sunday service). The first passenger services to go were those along Burlington Beach where competition from the radial electric cars killed the service as early as

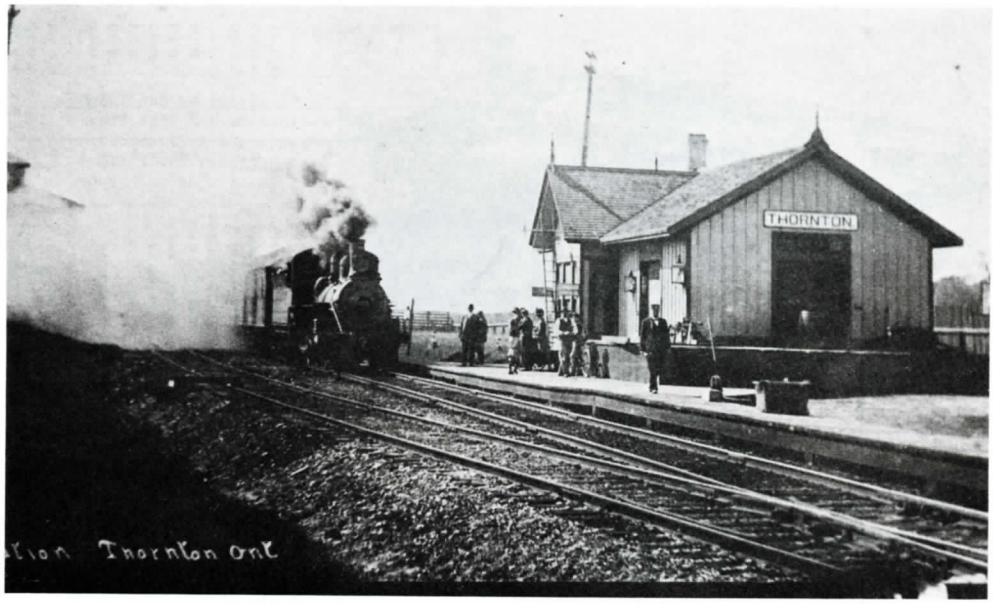
A very early picture of Hamilton & Northwestern #7 southbound across the original trestle across the Pine at Tioga. (T. Anders coll.)

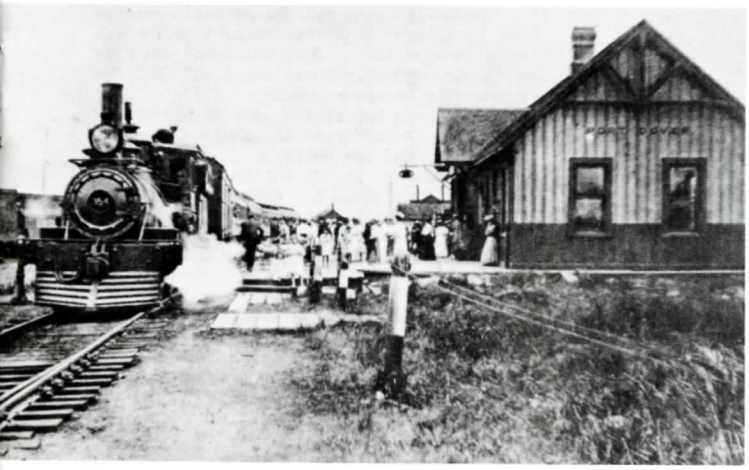


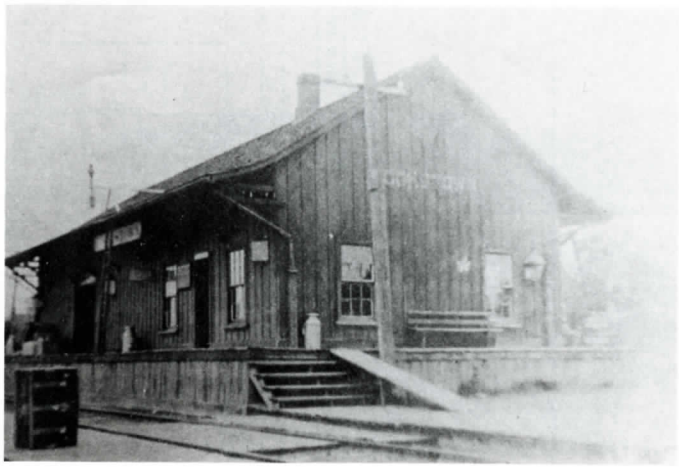
The big wash-out in the Allendale yards in 1896 - nothing like the occasional disaster to keep the roadmaster on his toes. (Barrie Public Library)



ABOVE
Mr. John Orr, Agent at Glencairn checking out the milkchurns. This photo taken in the mid 1920's. Part of the baggageroom has survived. (Mrs. M. Orr - Stayner)
RIGHT
Mr. Tom Barlow, Agent at Thornton steps out to meet the morning train from Hamilton, ca 1910. Thornton Station was demolished in 1962. (Miss I. Barlow - Thornton)
BELOW LEFT
Port Dover Granny ready to leave the "Union" Station on her morning trip to Canfield Junction, ca 1900. Part of the station survives as a shed. (D. Buscombe-Port Dover)
BELOW RIGHT
A turn of the Century view of Cookstown Station, an original H&NW station and still in use today as a private dwelling. (Mrs. J. McLean - Tweedsmuir)







BURLINGTON JCT. AND ALLANDALE

13th DISTRICT

13th DISTRICT

NORTHBOUND TRAINS

THIRD CLASS		FIRST CLASS								
83	81							55	53
Freight	Way Freight							Express	Mail
Daily	Except Sunday							Except Sunday	Except Sunday
							VIA	MIDDLE DIVISION	
								4.20PM	7.25AM
11.05PM	8.45AM							F 4.30	F 7.35
11.20	9.05							F 4.34	F 7.39
11.27	9.15							S 4.45	S 7.51
11.45	S10.25								
								F 4.53	F 7.53
								F 5.03	F 8.08
	F10.55							5.07	8.13
12.25AM	11.05							S 5.15	S 8.16
S12.30	S11.10							5.20	8.20
1.00	11.55							5.37	8.27
1.15	12.05PM							S 5.33	S 8.31
1.25	12.15							S 5.38	S 8.36
1.35	S12.30							S 5.45	S 8.41
1.50	S 1.00								
								S 5.57	S 8.53
2.15	S 1.30							F 6.03	
								S 6.00	S 9.05
2.35	S 2.00							S 6.20	S 9.20
2.55	S 2.30							S 6.20	S 9.20
S 3.15	S 2.50							6.35	9.33
3.30	3.30							F 6.45	F 9.40
								S 6.55	S 9.43
4.00	S 4.00							S 7.07	S10.00
4.25	S 4.20							F 7.20	F10.08
4.40	4.40							7.35PM	10.20AM
5.00AM	5.00PM							Except Sunday	Except Sunday
Daily	Except Sunday								
83	81							55	53

Miles from Hamilton	Time Table No. 46 Effective June 30th, 1929 STATIONS		Telegraphic Office 2. Day N. Night		Water Coal
	Dep. HAMILTON	Arr.	D	N	W C
	6.99				
6.99 Dep	BURLINGTON JCT	Arr.	D	N	W
	5.52				
12.51	TANSLEY				
	1.60				
14.11	ASH				
	6.58				
20.69	MILTON		D		W
	0.5				
21.07	C. P. R. CROSSING				
	2.73				
23.80	$MANSEWOOD				
	5.65				
29.45	STEWARTTOWN				
	4.25				
31.80	GEORGETOWN, N. & N. W. Y. and				
	3.32				
35.37	Arr. Dep. GEORGETOWN	Dep Arr	D	N	W
	2.69				
35.06	GLEN WILLIAMS				
	2.61				
37.69	TERRA COTTA				
	2.93				
40.38	CHELTENHAM		D		
	2.64				
43.02	INGLEWOOD JCT		D	N	
	0.61				
43.19	C. P. R. CROSSING				
	6.26				
49.45	CALEDON EAST		D		W
	3.01				
52.46	$CENTREVILLE				
	3.23				
55.69	PALGRAVE		D		
	5.91				
61.60	TOTTENHAM		D		
	1.59				
63.19	Arr. Dep. BEETON	Dep Arr	D	N	W C
	1.57				
64.76	$BRADALL				
	1.61				
66.37	COOKSTOWN		D		
	3.57				
69.94	THORNTON		D		
	1.61				
71.55	VINE				
	1.64				
73.19	Arr. ALLANDALE	Dep.	D	N	W C

SOUTHBOUND TRAINS

FIRST CLASS							THIRD CLASS	
54	56						80	82
Express	Mail						Way Freight	Freight
Except Sunday	Except Sunday						Except Sunday	Daily
VIA	MIDDLE DIVISION							
10.55AM	9.00PM						4.15PM	7.00PM
F10.42	F 8.48						3.50	6.40
F10.37	F 8.44						3.40	6.30
S10.25	S 8.32						S 3.20	6.10
F10.16	F 8.22						F 3.50	
F10.06	F 8.11						2.40	5.35
10.02	8.07						2.30	5.30
10.00	8.05						S 1.30	S 5.15
9.59	S 8.00						1.15	5.05
9.47	7.45						12.45	4.55
S 9.41	S 7.39						S12.30PM	4.45
S 9.36	S 7.32						S11.55	4.35
S 9.29	S 7.25							
							S11.15	4.15
S 9.18	S 7.10							
F 9.12							S10.40	3.50
S 9.05	S 6.57						S10.05	3.25
S 8.54	S 6.45						9.35	3.00
8.43	6.30						S 8.18	S 2.50
S 8.40	S 6.25							
	F 6.16							
S 8.24	S 6.09						S 7.53	2.20
S 8.12	S 5.58						S 7.33	2.00
F 8.02	F 5.48						7.13	1.35
7.54AM	5.40PM						7.00AM	1.15PM
Except Sunday	Except Sunday						Except Sunday	Daily
54	56						80	82

All trains running towards Burlington Junction will have the absolute right of track over trains of same class, running in the opposite direction.

No. 56 will take siding for No. 55 at schedule meeting point.

Mogul engines must not be run coupled over Dundas bridge No. 251 and Stewarttown bridge No. 262 between Georgetown and Burlington Jct., 15th District. Leading engine must be cut off, and coupled when passing over the above bridges.

Engineer of all southbound trains must test brakes passing Glenwilliams.

GEORGETOWN

Southbound Trains approaching Georgetown must be under control between yard limit sign and cross over switch and must not obstruct main line of the 15th District until it is known that track is clear and train protected.

Do not couple or uncouple before reaching north switch of 15th District passing track.

All engines to be turned up before reaching north switch of 15th District passing track.

15th District trains must not occupy main line of 15th District west of cross over switch.

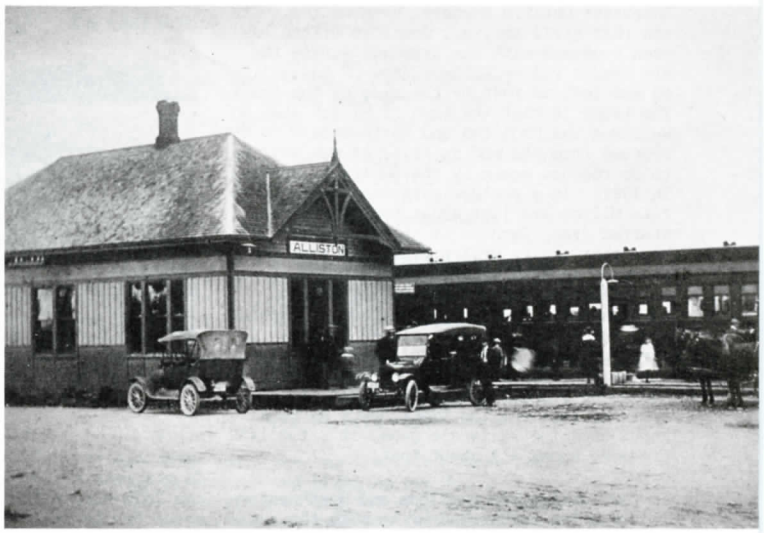
Northbound Trains approaching Georgetown must be under control prepared to stop between yard limit sign and cross over switch and must stop clear of cross over switch before proceeding to station and be protected as required by rules and special instructions and must not obstruct 15th District main line until it is known that track is clear and train protected.

15th District trains must not occupy main line of 15th District west of cross over switch.

The fixed position of cross over switches is for 15th District main line.

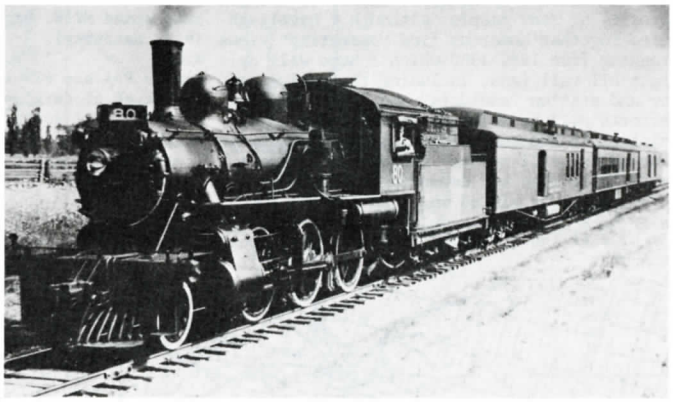
W. J. PIGGOTT, *Trainmaster,*
ALLANDALE.

The crew of a southbound freight at Cookstown in Grand Trunk days, pose for the camera. Locomotive 1012 was a light Mogul renumbered by the CNR as 914 and again as #90. She survived until the general withdrawal of steam. (Mrs. J. McLean)



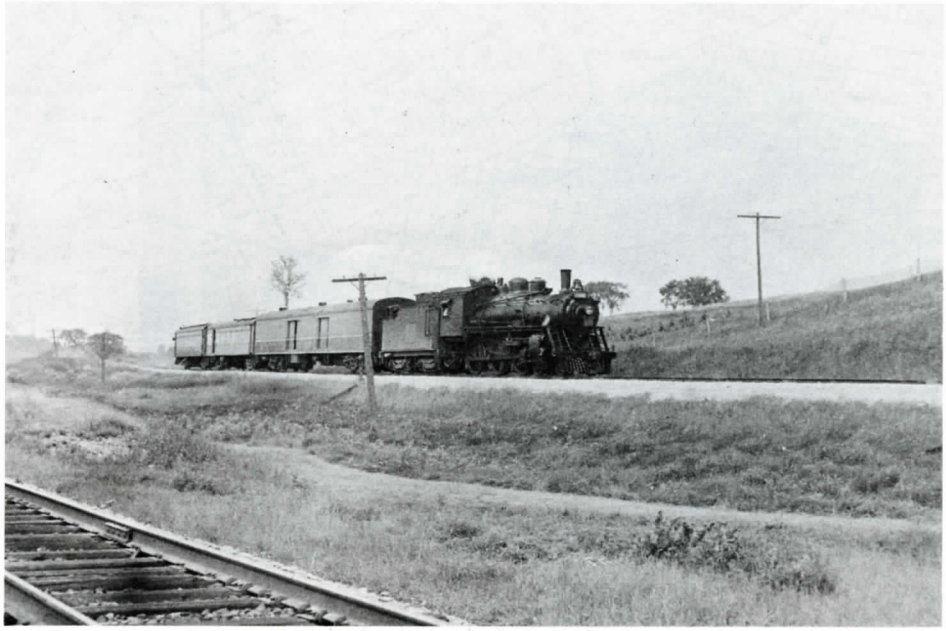
A typical station scene at Alliston in the gracious Grand Trunk days. (Bob Dickey - Alliston)

1896. From the turn of the century until the depression years there were two passenger trains a day, then one a day until 1955 when the "Hog Special" (also called the "Blue Mountain Flyer" or the"Virginia Creeper") finally called it quits. The "Hog Special" got its name because of the number of pigs it would carry to the slaughter houses. The "mainline" passenger service from Meaford to Hamilton via Stayner and Barrie lasted until 1960. Originally dubbed "The Peanut" on the more southerly part of the line, this train had a loyal but dwindling patronage until the horn blew for the last time when post-war enthusiasm for the convenience of the automobile was at its zenith and not even a noble rail-car experiment, nicknamed "The Doodlebug" could stave the odds. South of Hamilton, the daily mixed met the same fate. After the closure of the Jarvis - Port Dover section of the line in the early thirties, passenger service was via Simcoe to Port Dover and then latterly to Port Rowan. From its early years this train was nicknamed "The Port Dover Granny" or just "Granny" and the name stuck until the very last in 1957.



Mogul #80 in charge of Train #233 out of Hamilton, coasting along near Rymal after cresting the mountain. Aug. 11th. 1955 (J. Walder coll.)

The familier pattern of truncation and abandonment had set in, first of all on the Beach Sub., then the section between Jarvis and Port Dover in the early thirties. The original system suffered its most severe amputation when the heart was cur out of the Creemore Sub. with the lifting of the track between Alliston and Creemore following discontinuation of passenger service in 1955 with the remaining stub to Collingwood gone by 1960. The track between Beeton and Georgetown is still in place, abanoned with weeds waisethigh in some places and paved over at many concessions. As most readers know, the Ontario Rail Association has been planning a living museum on the section between Georgetown and Cheltemham. In hindsight, the whole line from Georgetown to Collingwood would have made a marvellous tourist attraction as it takes the traveller through some of the



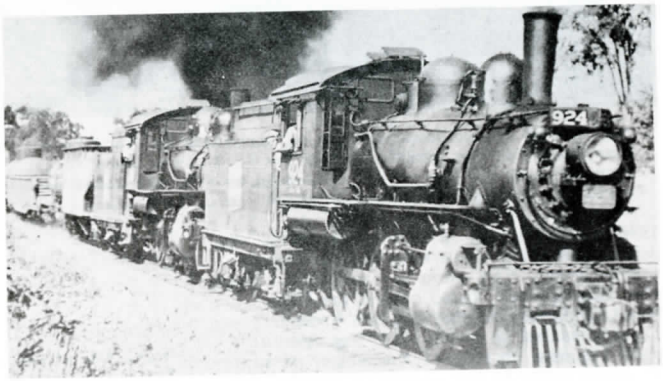
Substituting for the Doodlebug on Train #661 is ten-wheeler #1541 near Palgrave northbound beside the CPR track. Photo taken on July 27th. 1957 by R.J. Sandusky.

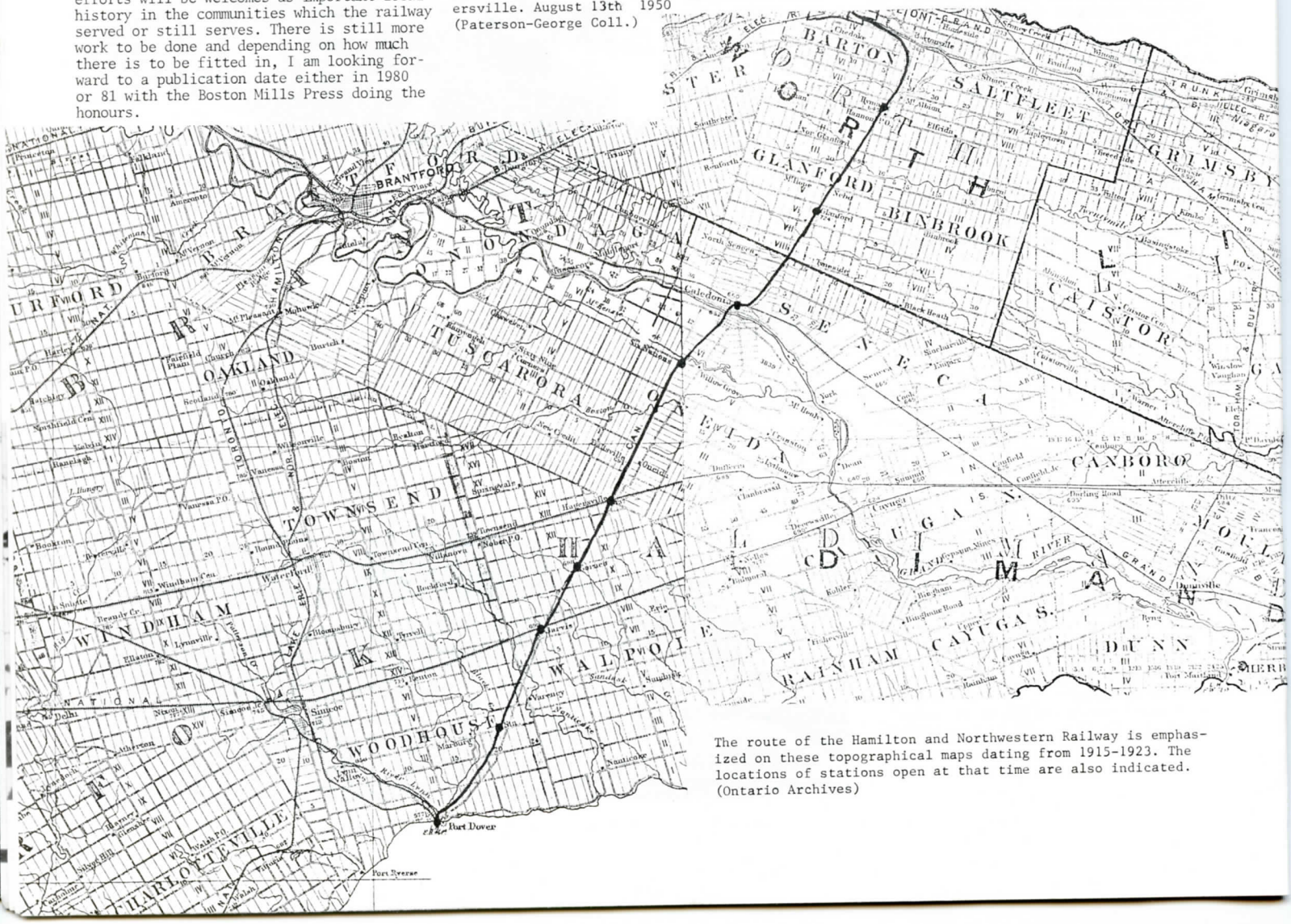
loveliest Ontario scenery. Even on the section that still thrives, downtown Milton has been bypassed with the diamonds across the old Credit Valley Railway (now CP Rail)lifted and left to rust by the side of the tracks. The irony is that the town of Milton that so welcomed the Hamilton and Northwestern to be rescued from the mud in 1875, is now waiting to be rescued again by the GO train, perhaps in 1981 - in over 100 years many communities like Milton are just about back where they started from. Perhaps it is not too much to hope that sanity will prevail and that the abanoned section will be left in pace for a possible revival of commuter service to Caledon East, Palgrave, Tottenham and Beeton at least - with gasoline slated to be at $2 a gallon by 1985 at present day prices the choice for the burgeoning commuter population has to be bus or rail and it would be sheer folly to tear out the track now - as we all know, once the rails are gone, it's too late - Creemore knows all about that!

In conclusion, the Hamilton and Northwestern is now being researched by me with the assistance, nor only of members of the Upper Canada Railway Society, but with the help of many other railway enthusiasts, local citizens, archives, museums and historical societies up and down the line from Lake Erie to Georgian Bay. The work has been in hand since 1978 and it has come along well, thanks to the generosity of many people. Although I have gathered together numerous fine "operating" views ranging from 1880-1960 which I hope will delight all rail fans, including the motive power and station "addidcts" and I hope that my efforts will be welcomes as important local history in the communities which the railway served or still serves. There is still more work to be done and depending on how much there is to be fitted in, I am looking forward to a publication date either in 1980 or 81 with the Boston Mills Press doing the honours.

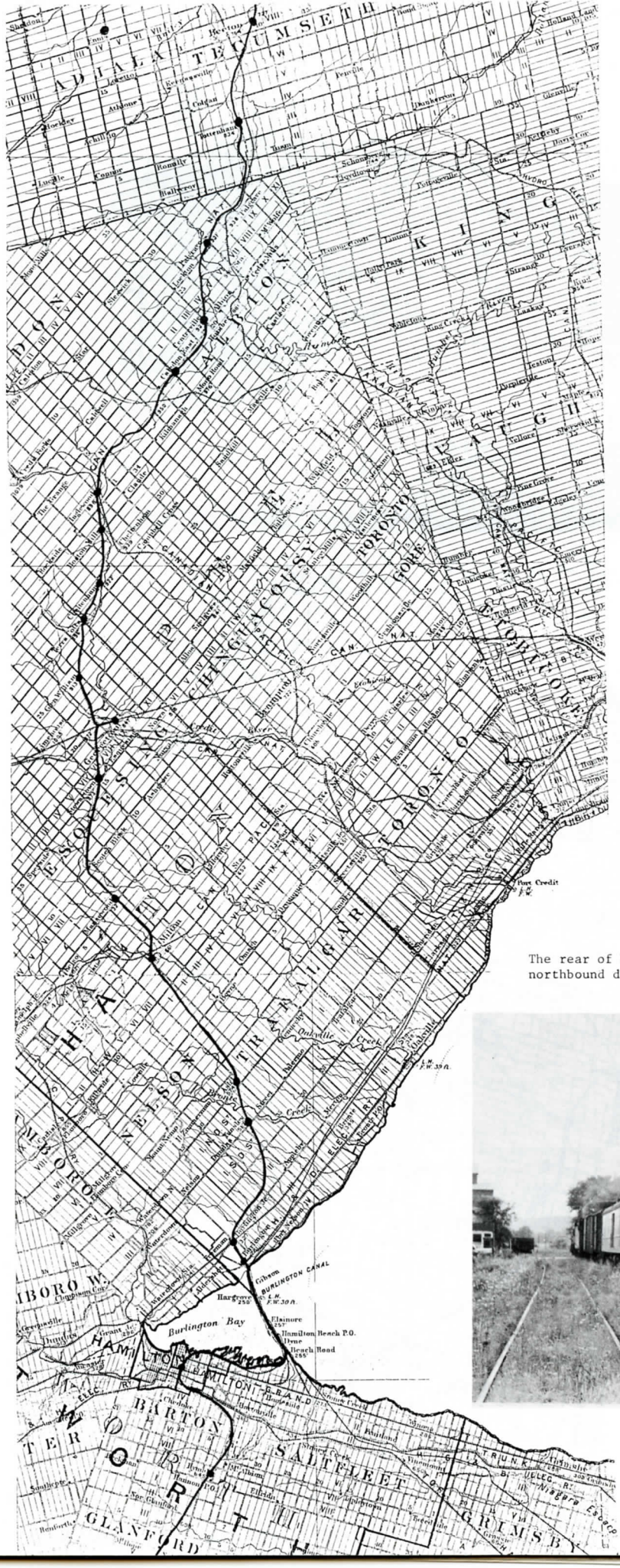
ABOVE
Three trains at Caledonia. On the left is Consolidation 2655 with a freight bound for Brantford. In the centre is Train M233 with a light train en-route to Simcoe where the Pacific type will change off for a lighter locomotive. On the right is the rear of the Stratford - Fort Erie mixed M218. Apr 1957 (R.J. Sandusky)

RIGHT
Moguls 924 and 910 in charge of 60 cars pounding down the line south of Hagersville. August 13th 1950 (Paterson-George Coll.)





The route of the Hamilton and Northwestern Railway is emphasized on these topographical maps dating from 1915-1923. The locations of stations open at that time are also indicated. (Ontario Archives)



THE LAST RUN OF THE HOG SPECIAL

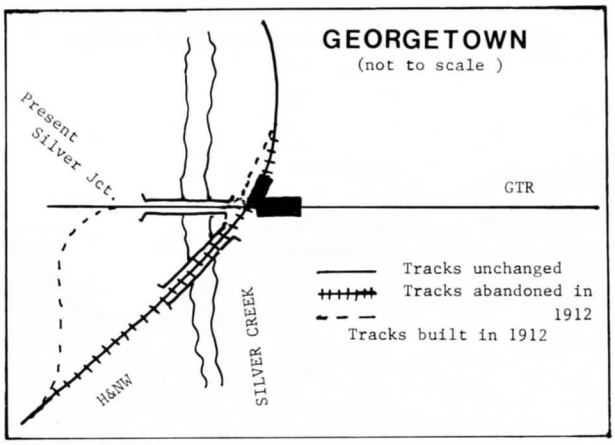
The people in Everett are sad today
For the Old Hog Special has gone on her way.
She came up at eleven and back down at four,
But after today she will travel no more.

Every day at the station the folks gathered round
To see the old train when she rolled into town.
Now the station is deserted and so is the track,
For the Old Hog Special will never be back.

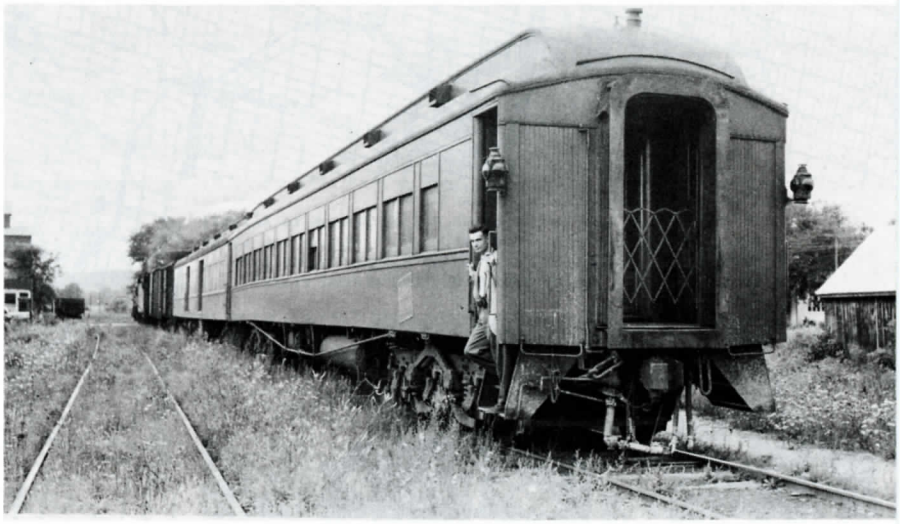
It was the only train to travel this line
From Beeton to Collingwood, never on time,
We could go to Alliston, Tioga or Lisle
And up to Creemore, about fifteen mile.

THere'll be times we will think we can see her smoke stack,
And hear her old whistle away down the track
But its only a memory, for the old days we yearn
"Cause the Old Hog Special will never return.

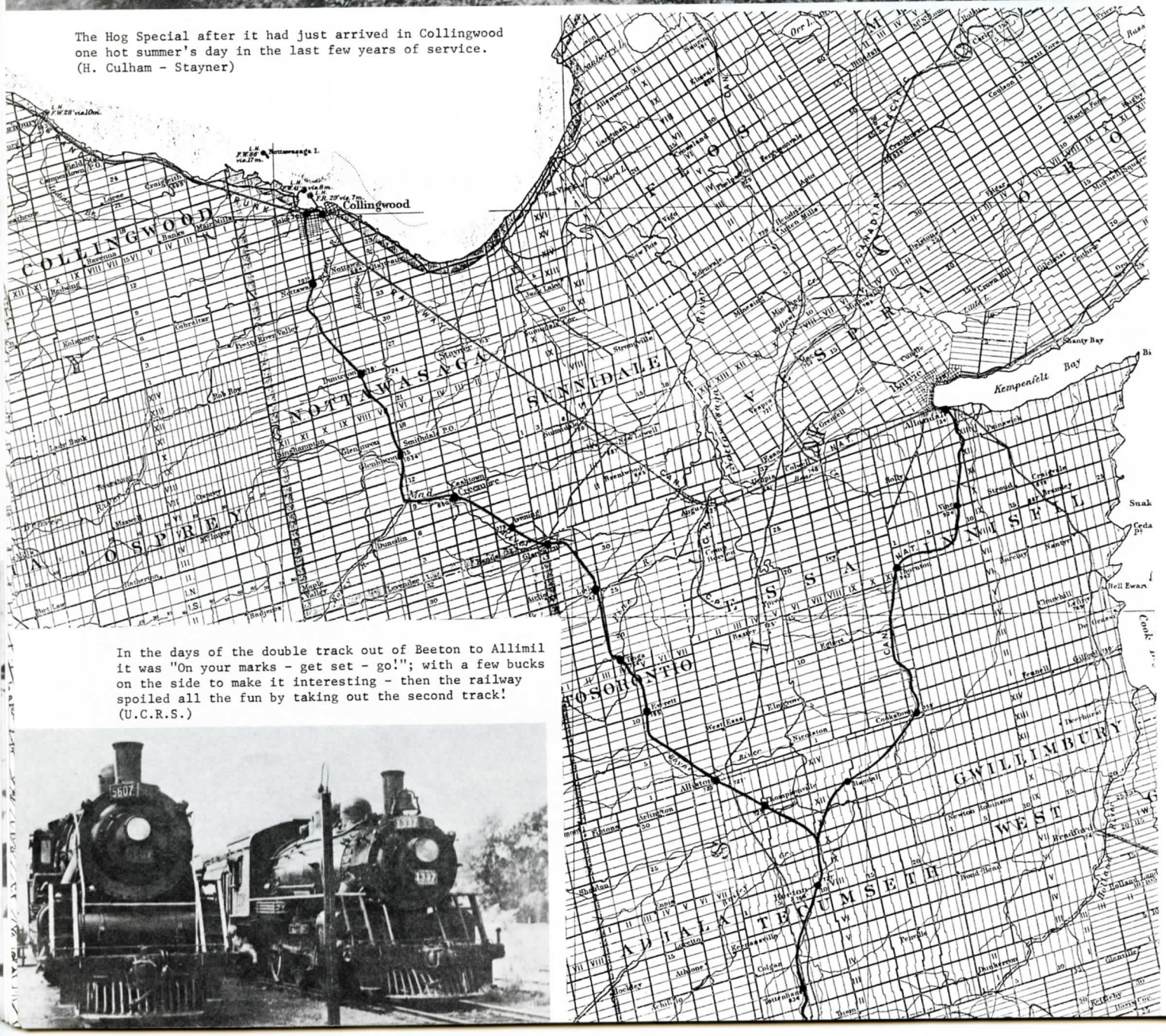
For many long years she has travelled these rails
Carrying passengers and bringing our mail,
Now these days are over and the work is all done,
The Old Hog Special has made her last run.



The rear of Mixed Train #391 with locomotive 1364 on the point, seen here northbound during a stop at Creemore. (R.J. Sandusky)



The Hog Special after it had just arrived in Collingwood one hot summer's day in the last few years of service. (H. Culham - Stayner)



In the days of the double track out of Beeton to Allimil it was "On your marks - get set - go!"; with a few bucks on the side to make it interesting - then the railway spoiled all the fun by taking out the second track! (U.C.R.S.)

TEN YEARS AGO

November – December 1969

INDIGNATION, OUTRAGE FOLLOW TRAIN-OFF BIDS

As might have been expected, a wave of protest swept the country in the aftermath of the passenger train withdrawal proposals of the two major railways last month (Aug/Sept NL, page 85). The "responsibility" of the railways -- particularly CP Rail -- to provide a continuing, if uneconomic passenger service was reiterated time and again from the editorial pages of many of the major newspapers.

'It was all a misunderstanding', said N. R. Crump, chairman of Canadian Pacific. 'CP Rail doesn't really want to scrap all its passenger runs.' 'Somehow,' Crump said, 'This got off the track entirely.' What the railway really wants is to qualify some money-losing runs for federal subsidies. In a press conference in Toronto, Crump told reporters that CP Rail simply wants to take advantage of the opportunity the government provided in 1967 to eliminate a large part of the losses. Under the National Transportation Act, the railway may be able either to drop a losing route completely or have the taxpayers pick up 80 per cent of the loss if Ottawa's Canadian Transportation Commission feels the line must be retained for the public's benefit. To qualify, Crump explained, 'we must first apply for abandonment.' He said the applications were misinterpreted.

Misunderstanding or not, the protest continued. Parliamentarians, notably John Diefenbaker, berated the train-off proposals; Manitoba promised a "tooth and nail fight" against any move to eliminate CN's Churchill service; the Ontario Northland announced that it would oppose CN's bid to discontinue the Toronto-North Bay section of the "Northland". (In the same vein, however, ON's chairman, W. A. Johnston, noted that his road's service to Moosonee lost $480,000 in 1968, and that though the ONR has never come under federal transport regulation, 'it might be wise' to seek inclusion because of subsidies available to passenger carriers under new federal railway legislation.)

Canadian Transport Comaission president J. W. Pickersgill said decisions on the applications would not be made lightly. 'No discontinuance will be approved without a prior public hearing at some convenient location in the area involved. Ample notice of the hearing will be given and any person or interested party will be afforded an opportunity to present views on the matter,' he said.

And what of CP Rail's responsibility? The Canadian Pacific Act of 1881, incorporating the fledgling company, required it "to construct and forever efficiently maintain and operate the Canadian Pacific Railway," making no mention of passenger services per se. In return for the federal grants in land and money which started the railway on its way, it is reasonable to expect the company to live up to its charter. But if "efficiently" can be termed to mean "paying for itself", i.e., not being a charge against either the federal purse or the company itself, is the railway not justified in seeking to eliminate money-losing (by government formula) operations? If, in the final analysis, government decides the services should remain, as perhaps they should, is it not reasonable to conclude that government should pay for them? After all, this constitutes "inefficient" operation, certainly not required by the CP Act.

Perhaps the final answer to the whole rail passenger dilemma would be a federal form of GO Transit, wherein ownership of equipment and responsibility for standards and levels of service, fares, etc., would lie with the federal government; under such a scheme, the railways would simply be operators. A train travelling between two points would not necessarily be confined to one railway, and in fact could transfer from one to another to suit best the requirements of the service. The transcontinental and maritime runs (not to mention Montreal-Ottawa and Montreal-Quebec) might benefit under such a scheme. If, as it appears, much of the existing passenger network will soon be operating under federal subsidy anyway, is the step to a "federal GO Transit" really so extraordinary?

A MOST UNUSUAL BIRTHDAY PARTY

Residents of Toronto's Forest Hill whose properties abut on CN's Toronto Belt Line trackage were surprised to see a special push-pull passenger train parked on the trackage on the evening of Saturday, November 22nd. The equipment was chartered from CN to be the setting for a most novel birthday celebration, given by Mrs. J. Flintoft for her husband Mr. James Flintoft, corporate secretary for Abitibi, and a train buff. About 60 guests, invited to the party, were ushered aboard the train, consisting of roadswitcher 1916, parlour-lounge "Cape Porcupine", dining car 1376, and diesel 1910. The train left the Flintoft's Ormsby Crescent home, and journeyed to Union Station, while the guests aboard the train enjoyed a dinner of smoked salmon and roast beef. The train returned from Union Station along the same route later in the evening. A friend phoned the Flintoft house, as the train passed his place, for the band to start to play for dancing.

"Serving you in so many ways"

/MONTREAL STAR.

300-MILE EXTENSION OF PGE ANNOUNCED

Premier Bennett of British Columbia announced Oct. 31st that the Pacific Great Eastern Railway will be extended northwest for a distance of 300 miles to a point on the Stewart-Cassiar Highway near the B.C.-Yukon border. Government sources indicated the cost of the extension will be over $50-million and it will take five years to complete.

The provincially-owned railway already has two rail extensions under construction. The bigger, covering 250 miles from Fort St. John to Fort Nelson, will cost an estimated $42-million. The second is about 90 miles from Fort St. James to Takla Landing. Both are expected to be completed by 1971. When complete, the extensions announced so far will take two arms of steel within a short distance of the Yukon boundary, in the vicinity of Watson Lake and Fort Nelson.

OPTIMISTIC FUTUPE SEEN FOR ARR

The $96-million Alberta Resources Railway line, opened this year from Brule on the Canadian National main line to Grande Prairie 230 miles north, may begin to pay its own way within five years.

The most optimistic estimate four years ago, when critics called the joint venture by the Alberta government and CN a "white elephant", was that it would take 15-20 years for the project to prove itself financially.

Main reason for the new surge of optimism is the rapidly growing demand, particularly in the export field, for natural resource materials abundantly available in the vast region of western Alberta.

GO TRANSIT NOTES

* GO Transit has ordered 15 suburban buses from G.M.D.L. for delivery this fall. (see Oct-Nov/69 NL for possible routes).

CANADIAN EXPORT LOCOMOTIVE ORDERS

* General Motors Diesel Limited of London has an order to build 35 general purpose C.C. diesel units for Yugoslavia. The 2000 h.p. locomotives are to be delivered this July.

* Sierra Leone Development Corp. has ordered three general purpose 2000 h.p. C.C. units from MLW-Worthington for delivery in April.

CN MOTIVE POWER NOTES

* June and July 1969 accounted for nine CN withdrawals, as follows:

5 -- June 30/69 - sold to Steel Co. of Canada
3005 -- June 30/69 - retirement program
3010 -- July 10/69 - retirement program
3804 -- June 16/69 - retirement program
3814 -- June 30/69 - retirement program
3817 -- June 16/69 - retirement program
5011 -- June 13/69 - wreck Yale Sub., Feb. 28/69
9428 -- June 16/69 - retirement program
9438 -- July 10/69 - retirement program

* SD-40 No. 5911 was delivered to the GTW at Battle Creek, Michigan on Oct. 3/69, completing the GF-30f class.

* A total of 16 Duluth, Missabe & Iron Range SD units has been leased by CN. Their numbers, subject to change, are:

Assigned Symington: 176, 177, 178, 179
Assigned Montreal Yard: 111, 112, 117, 119,
(for trains to Lake St. John) 120, 121, 123, 180, 181, 182, 188, 193.

* A further nine retired units have been delivered to EMD, McCook, Ill., presumably as trades for the second order of SD-40's for GTW. The units involved were 3004, 3005, 3009, 3010, 3022, 3024, 3059, 3814 and 9158. Curiously all are Alco designs.

* Seven additional GF-30e SD-40's have been received from the Diesel Division of General Motors of Canada:

5116 -- Nov 1/69
5117 -- Nov 1/69
5118 -- Nov 14/69
5119 -- Nov 14/69
5120 -- Nov 25/69
5121 -- Nov 28/69
5122 -- Nov 28/69

* The renumbering of GO Transit equipment reported in the May/June issue, page 58, has commenced with locomotive 606 being renumbered to 9806 effective Dec. 4th.

* Delivery of SD40's continues from the Diesel Division of General Motors of Canada:

GF-30e: 5123 -- Dec 12/69
5124 -- Dec 12/69
5125 -- Dec 23/69

GF-30h 5126 -- Dec 23/69
5127 -- Jan 15/70
5128 -- Jan 14/70
5129 -- Jan 20/70
5130 -- Jan 20/70

* GR-30 class units 5000-5075 were re-classified GF-30, effective Jan 1/70. Rear footboards will be removed from these units at next shopping.

CN EQUIPMENT NOTES

* Hawker Siddley's Trenton, N.S. plant will build five 100 ton aluminum hopper cars for experimental purposes. They are designed to test the possibility of carrying heavier loads and improved trucks and vibration-control systems. Delivery is scheduled for August with the test lasting from six to twelve months.

* Grand Trunk Western has acquired 40 surplus cabooses from Sante Fe, and will rebuild them at Port Huron shops for GTW service.

CN TEMPO WRECK IN WESTON KILLS ONE PERSON

CN's Tempo trains are certainly a set of hard-luck trains. They have been involved in three wrecks since their introduction, each one claiming a life. The most recent wreck occurred on the evening of January 7th, in Weston, when the Sarnia-bound Tempo was derailed at a facing switch into a siding at the Face-elle plant. The locomotives and the first truck of the first coach passed safely over the switch, the rear truck derailing, and the remaining three coaches ending up in the premises of the plant and along the right-of-way, one of the coaches coming to rest near an 80,000 gallon fuel tank and a propane storage tank. Fourteen people were injured, four seriously; one girl dying of her injuries in hospital twenty days later.

Subsequent investigation into the cause of the wreck traced the cause to the failure of an eight inch steel bolt, one of three controlling the movement of the switch.

While the wreck was being cleaned up, trains were diverted over the Newmarket and Halton Subdivisions, Wednesday night, and part of Thursday.

CP RAIL EQUIPMENT NOTES

* Penn Central Shops are to build 34 60'-9" box cars for delivery in January and February this year for CP.

* CP Rail has placed an order worth $8 million with Marine Industries Ltd. The 400 steel covered hopper cars will be built by the Sorel, Que. plant with deliveries to start in 1970.

WORTH NOTING...

* The Canadian Transport Commission has approved Northern Alberta Railways' application to withdraw 34 agents and 12 caretakers from stations in northern Alberta and British Columbia.

* The City of Toronto will consider requiring all developers of land abutting railway property to provide chain link fencing at least six feet high along the railway boundary, to protect children.

* CP Rail's tiny Crombies, Ont. station has been moved to Shelbourne for display in the town's Pioneer Village at Hyland Park. The Dufferin County Historical Society hopes to acquire a passenger car to display in front of the station building.

* CN has introduced piggyback service to Prince Edward Island. The trailers-on-flatcars move to and from the island via CN's Northumberland Strait ferry service.

* Denying rumours of a phaseout of CN's Transcona Shop, Prairie Region Vice-President L. P. Stephenson announced recently that it is planned to provide enlarged facilities by 1973-74 at the Winnipeg shop, making it "the most sophisticated in the country."

* CN's ferry "Prince Edward Island", retired last year from the P.E.I. run, is up for sale.

* CN is calling tenders for the construction of windbreaks for the main and local humps at Toronto Yard.

CP RAIL MOTIVE POWER NOTES

• CP Rail has placed an order with the diesel division of General Motors of Canada Ltd. for construction of six 2000 horsepower, four-axle GP-38 locomotives. The order is worth approximately $1.8 million and delivery is scheduled for May 1970. The new units, to be classified DRS-20a, Nos. 3000-3005, are intended for local main line and heavy branch line service anywhere in Canada. Equipped with a GM model 645 engine but no turbocharger, the new locomotives will be CP's first 2000 h.p. units.

• Six Century 636's -- at 3600 h.p. currently Canada's most powerful locomotives -- have been delivered by MLW-Worthington Ltd. All are of class DRF-36A:

4700 -- Nov 21/69
4701 -- Nov 18/69
4702 -- Nov 21/69
4703 -- Nov 24/69
4704 -- Nov 26/69
4705 -- Dec 1/69

• The annual migration of U.S. motive power north to CP lines is in full swing. At the end of January, the following power had been leased:

- Lake Superior & Ishpeming:
  U23C: 2300-2302: Maintained Winnipeg
- Bessemer & Lake Erie:
  F7A: 719A Maintained St. Luc
  F7B: 712B " " "
  RSD-15: 881-886 " Winnipeg
- Boston & Maine:
  RS2: 1508, 1512, 1517, 1518 Maintained St. Luc
  F7A: 4266A " " "
  F7B: 4266B " " "
- Illinois Central:
  C636: 1100-1105 Maintained St. Luc
- Alco Products (demonstrator):
  C636: 636-3 (one unit) Maintained St. Luc
- Precision Engineering:
  RS-27's: 900-901 Maintained St. Luc
- Chicago Great Western (now owned by C&NW):
  F7A: 110C, 115A, 115C, 116C Maintained St. Luc
  F7B: 101D, 103B, 105B, 109B, 112D, 114B " " "

• Twelve further units have been outshopped by MLW-Worthington:

M636: 4706 -- Dec 8/69
4707 -- Dec 10/69
4708 -- Dec 12/69
4709 -- Dec 17/69
4710 -- Dec 18/69

M630: 4509 -- Dec 23/69
4510 -- Dec 30/69
4511 -- Jan 12/70
4512 -- Jan 19/70
4513 -- Jan 20/70
4514 -- Jan 22/70
4515 -- Jan 27/70

CP RAIL BRIDGE FALLS LIKE 'CARD DECK' WITH ASSISTANCE FROM PGE

Can there be any personal satisfaction in blowing up one of your competitor's bridges?

For the PGE's Doug Whiffin, Engineer Special Duties, it was all in the line of duty.

Engineer Whiffin leads a double life. When not working for the PGE he is Major Doug Whiffin of the 6th Field Squadron, North Vancouver.

Recently Major Whiffin was commander of an exercise involving the demolition of a huge railway bridge at Mile 22.7 on the abandoned CPR Kettle Valley Line in the Coquihalla Valley.

The 375-foot long timber trestle bridge, built by the CPR in 1948 and abandoned in 1959, required two detonations to bring it down. The bridge belonged to North Pacific Mines and company officials plan to salvage the timbers for shoring material in the mines.

With a look of total satisfaction, Major Whiffin observed: "After the second detonation the structure came down like a deck of cards."

It required 300 pounds of plastic explosives to bring it crashing into the Valley.

Major Whiffin's Squadron was assisted in its venture of destruction by a 17-man contingent from 409 Engineer Company, U.S. Army Reserve from Everett, Washington, under the supervision of their executive officer, Lieut. Dave Robertson.

FIRE DESTROYS WP&Y ROUNDHOUSE

The White Pass & Yukon Railway's roundhouse at Skagway, Alaska, and several adjoining buildings were gutted by fire on October 15th, 1969. Burned were Mikado 72 (used for steam heat), two of the new MLW-Worthington diesel electrics (see UCRS NL #280, page 58), Plymouth switcher no. 3 and a caboose.

This iron-clad building had been enlarged to 20 stalls during World War II, when 35 locomotives were working on the 110-mile line, forwarding supplies being used to rush the strategic Alaska Highway to completion. In recent years much of the roundhouse was used as a car shop.

Brooks 1881 mogul no. 52 barely escaped damage, standing just beyond the fire area. This engine was retrieved in 1964 for display purposes from the site of the portage tramway at Taku, British Columbia.

NIXON ADMINISTRATION PROPOSES AGENCY TO OPERATE PASSENGER SERVICE

The Nixon Administration has proposed legislation for the creation of a semi-public corporation with powers to take over and modernize the ailing American intercity passenger train system. The corporation would be patterned after the Communications Satellite Corporation which operates telecommunications satellites. To be called Railpax, the company would have up to $300 million in initial resources to revitalize passenger service on a network of routes around the country to be selected by the Secretary of Transportation.

Railpax would have the power to discontinue service on routes selected if, after a suitable trial period, it was determined that there was not enough public demand for the service rendered, or there was no local agency willing to absorb the loss. Congress would be able to veto the discontinuation of service once it had been included in the system.

Under the proposal made, the new corporation would receive $100 million in Federal aid over a three year period to buy new trains and other equipment. The Federal money would include $40 million in grants and $60 million in long term Federally insured loans. Stock in the corporation would initially be owned by the railroads. As a condition for turning over to Railpax passenger trains that the railroads no longer wanted to operate, the lines would be required to buy stock in the corporation, to donate equipment to the corporation or both.

The corporation would eventually be capitalized at around $200 million from the aforementioned sales of stock, plus the aid from the Federal government. Railpax would eventually sell stock to the public.

Most of the Federal money would be spent to upgrade service in medium-haul "population corridors" rather than on long distance trains. It is expected that certain long haul trains would be kept also.

It will be interesting to follow the course of this proposal through Congress, and what kind of reception it meets from the American railroad industry.

SPECIAL CARS ORDERED FOR HYDRO PROJECT

• Two special railway cars, costing a total of $380 thousand, have been ordered from Hawker-Siddley Canada Ltd., Montreal, to move some of the massive power equipment for the Churchill Falls hydro-electric development, Churchill Falls (Labrador) Corp. Ltd. announced recently.

The cars, with capacities of 250 tons and 75 tons, will be used to transport huge power transformers and heavy steel penstock sections 286 miles on the Quebec North Shore & Labrador Railway from Sept-Isles north to Esker, the western terminus of a 115-mile truck route to Churchill Falls.

The two special cars will be depressed, to lower their centre of gravity and to provide as much headroom as possible through tunnels.

As well, a third special car is being supplied by The Churchill Falls (Machinery) Consortium as part of a contract for the supply of Churchill Falls, turbines and generators. This unit will be a well-type flat car with a carrying capacity of 150 tons and will be used to transport turbine runners and other turbine components.

BRIEFLY.....

• CP Rail's Vickers-built double deck commuter cars for the Montreal Lakeshore service are now expected to go into service early in 1970. At least one of the cars has been tested at Angus Shops.

• CN has ordered 500 cushion underframe newsprint cars from National Steel Car for delivery beginning in January. The 50'-6" cars will be equipped with nine-foot plug doors.

• Midland Ry. of Manitoba diesel #1 has been sold to B.C. Hydro and renumbered 931.

• PGE should begin to test Locotrol or Robot operation in late December or early January. Conversion of the ex-SP&S FB-2 diesel unit to a control car is progressing slowly. The master control locomotive will be one of the new C-630's.

• Great Northern is converting several freight F-7 units (reportedly 10 units) into passenger locomotives and renumbering them into the 380 series. The newer units (1953 vintage) are being converted while the older passenger units are being downgraded to freight service.

FORMER CANADIAN PACIFIC STEAMSHIP "ASSINIBOIA" DAMAGED IN FIRE

The former Canadian Pacific Great Lakes cruise steamship "ASSINIBOIA" was swept by fire at her moorings in the Delaware River near Philadelphia, Pa., last November 9th. No one was injured in the blaze. Damage to the ship was estimated at $300,000. The ship was left listing heavily 40° to port from the fire. A spokesman for the owners, the Assiniboia Corp. of Philadelphia, said the loss was total. The firm had planned to convert the ship into a high class restaurant and banquet facility.

UNIT TRAINS TO MOVE SULPHUR ON CP RAIL

Alberta-produced sulphur destined for world markets has begun moving to the Pacific Coast by unit trains. The CP Rail sulphur unit trains--the first for western Canada--are operating initially on a twice weekly basis from Shell Canada's Waterton Gas Processing plant at Pincher Creek, Alta., to bulk terminals at Port Moody, and North Vancouver, B.C.

TRACTION TOPICS

• Seventy TTC air-electric PCC cars have been sold for scrap to Inter-City Steel & Metal Co. Ltd. of Oshawa, Ontario. The sale consisted of 65 cars stored at the TTC's Hillcrest Shops on the soccer field, and five cars stored at St. Clair Division. The scrapper used a low trailer and small tractor in order to haul the carbodies away without cutting them apart. The 70 cars in the current contract were hauled away as follows:

September: 4074, 4139, 4171, 4191, 4194, 4208, 4214, 4215, 4234, 4241, 4243, 4601.

October: 4013, 4016, 4017, 4024, 4033, 4038, 4042, 4064, 4065, 4080, 4081, 4084, 4102, 4106, 4112, 4129, 4165, 4166, 4175, 4182, 4187, 4207, 4230, 4237, 4246, 4252, 4269, 4284, 4285, 4289, 4291, 4294, 4594.

November: 4003, 4012, 4019, 4030, 4039, 4044, 4047, 4048, 4050, 4054, 4055, 4058, 4066, 4079, 4132, 4168, 4176, 4189, 4271, 4296.

November (from St. Clair Division): 4028, 4031, 4078, 4091, 4137.

The five cars from St. Clair were towed to Hillcrest and dismantled in the southwest portion of the yard.

There are now only eight "Canadian" air-electric PCC cars and seven ex-Cincinnati air-electric PCC cars active. The listing of the cars is to be found in the May 1968 NL #268, page 60. This listing does not include 4220 and 4275, both out of service and in storage.

• Attrition is thinning the ranks of the TTC all-electric PCC fleet. Early in December seven all-electric PCCs were sold for scrap to Inter-City. The cars sold were: 4309, 4321, 4353, 4712, 4759, 4755 and 4760.

These cars have stored out of service for a number of months as the result of collision damage or electrical breakdowns of a major nature. All cars were completely stripped of reuseable parts before leaving TTC property.

• TTC surface track repairs were confined to minor jobs during November and December 1969. On Bathurst Street certain worn crossing diamonds were replaced in the intersections with King St., Queen St., Wolseley Loop, College St., and Hillcrest Shops access track. The northbound car stop rails were replaced at Bathurst and Ulster. Unused track diamonds were removed at Bay and College. The centre of the track intersection and some of the curved tangent rails were replaced at Gerrard and Broadview. The facing switch that formerly led out of the Earlscourt Loop south onto Lansdowne from St. Clair Ave. was removed when the worn curve rails were replaced at that location. More of the worn track in this loop will be replaced soon. The facing and trailing switches into and out of Dundas West Station Loop to and from the destination "Runnymede" have been removed.

• KING & CARLTON night cars now lay over at a new night stop on Edna Ave. at the corner of Dundas St. W. to make transfers from the JUNCTION trolley coach easier. The night cars on those two streetcar routes still stop at Bloor St. W. to transfer passengers from the BLOOR night buses.

On November 30th the JUNCTION trolley buses changed their path through Runnymede Loop. Instead of following the former streetcar track and stopping along the west fence, route 40 trolley buses now use the inner loop and stop in front of the passenger shelter inside. Poles and overhead were moved to facilitate the change.

• At approximately 3:30 a.m. on October 17, 1969, a serious collision between two work cars on the Massachusetts Bay Transit Authority's express trolley line from Boston to Riverside, Mass. claimed the life of one employee and injured seventeen others.

Overhead wire car 3283, loaded with heavy reels of copper wire, collided head-on with crane car 2086, which carried a load of replacement rail. The disaster occurred as both cars were headed in opposite directions on the inbound track west of the Brookline Village stop. Apparently neither crew had knowledge of the other. Boston's trolley signal system does not provide for reverse traffic on either track.

Both wrecked cars will be repaired. An interesting sidelight of this tragedy is the loan of former Claremont Railway Co. overhead repair car No. 4 to the MBTA from the Seashore Trolley Museum.

Think of the precedent that action might set for ex-TTC crane C-1 now at the Halton County Radial Railway near Rockwood, Ontario.

-- B.S.R.A. "Roll Sign".

SHORT TURN

• A collision between subway cars 5067 and 5093 occurred at Davisville Yard on November 22nd. Damage was slight.

• On December 2nd, TTC Commissioners decided to order a total of 76 cars for the North Yonge Subway extension, now under construction. It is expected that the contract for the new equipment will be awarded early in the New Year.

• In mid-November CP Rail applied to the Parliament of Canada to purchase the rail operations of the Cornwall Street Railway, Light & Power Co.

ONR SD-40-2's #1732 and #1735 in old and new colours respectively bring a southbound freight into the north end of North Bay. (R.G. Eastman)

RAILFOTOS

One of the first of ONR's new cabooses sports its blue and yellow paint job outside of the paint shop in North Bay. (ONR photo)

The new "Northlander" look. Unit #1984 was the first to emerge from the shops with a rebuilt F-unit in place of the Dutch built power car. Already dubbed "Tadpoles" on account of their large head end and small tail, we haven't heard what the unit designation is. Possibly they could be F-7H's or maybe F-10's (similar to MBTA's units).The old power cars are apparantly to be returned to Europe. (ONR photo)

ABOVE
ONR RS-103 #1306 seen idling betwwen switching chores in North Bay yard. Photo taken by Wolf Kirchmeir during Thankgiving 1974.

BELOW
The first of ONR's GP-38's #1800 leans into the curves south of Temagami with a loaded southbound ore train. (G. Zuters)

ABOVE
Switcher #1201 hostles a train of three vans through the yard at Englehart. (D.W. Smith)

BELOW
FP-7's #1519 and #1509 on the piont of the "Polar Bear Express" at Moosonee. (R.G. Eastman)

CENTRE PAGES
Passenger geeps 1601, 1602 & 1603 along with an unidentified FP-7 bring a northbound road freight into the Englehart Yard. (D.W. Smith)


1601


1603
ONTARIO NORTHLAND

BRITISH RAIL'S

HIGH SPEED TRAIN

Information compiled by Mike Lindsay
Drawings from British Rail

The completion of the electrification of the West Coast main line from London to Manchester and Liverpool in 1967 established a fast, comfortable, and reliable service on that route. British Rail anticipated that this would result in an increase in passengers carried, but the response far exceeded expectations. This factor and a number of detailed Market research studies have established very clearly the fact that the travelling public will respond drama tically to shorter journey times.

The long term market strategy developed by British Rail has resulted in the nearly completed work on the Advanced Passenger Train, which is designed to travel at speeds of up to 250 km/h (155 mph), traversing curves 25 to 40% faster than conventional trains. A project such as this involved new technology and required a very considerable development period. It became obvious to British Rail that there was need to provide a high speed service in advance of the completion of the A.P.T.

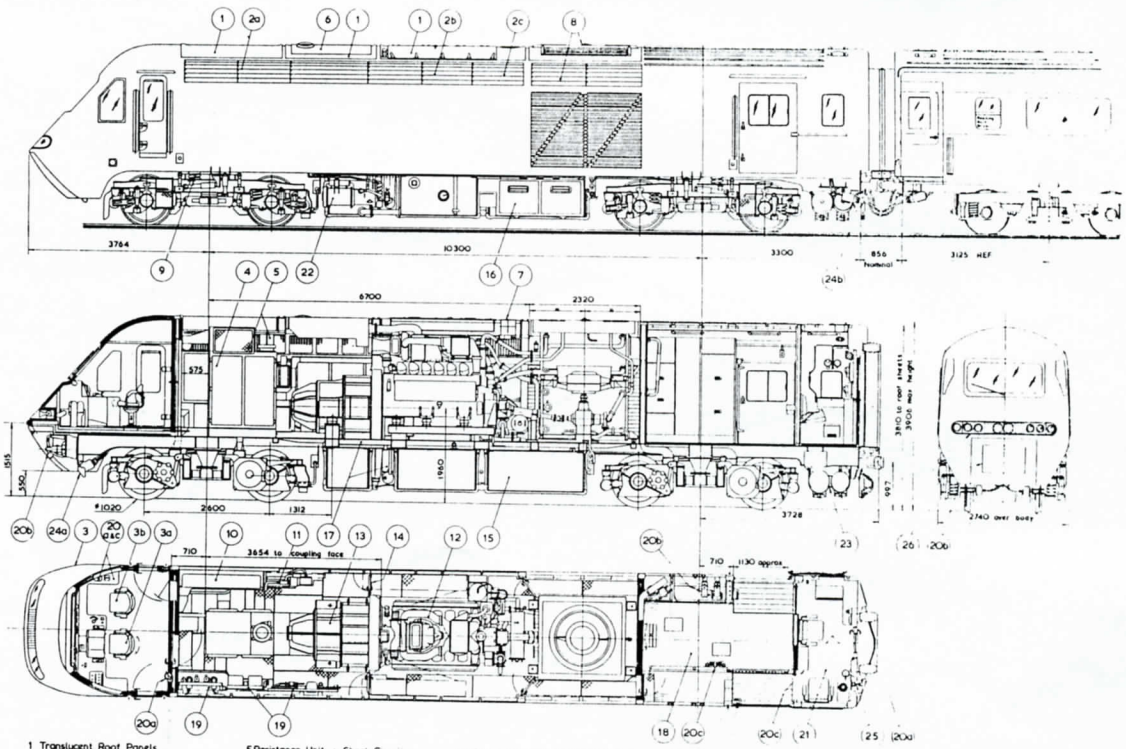
Authority for the construction of a prototype High Speed Train (H.S.T.) was given in mid 1970. The first prototype train was designed and manufactuered in record time, being completed by 1972.

The prototype train underwent a comprehensive testing programme during which a world speed record for diesel trains of 230 km/h (145 mph) was attained. The information obtained from the trails and subsequent service experience was taken into account in the design of the production H.S.T.

The power required to reach high speed increases exponentially and thus the power demands of the H.S.T., operating at its maximum design speed of 200 km/h (125 mph) are considerable. Aircraft and industrial type gas turbines were examined as possible prime movers, but discarded due to high first cost, high maintenance costs and high fuel consuption. A medium speed diesel engine was selected but in order to achieve the necessary power, two engines were required.

A second problem encountered with high speed operation is damage to track caused by wheels passing over track irregularities. This damage is a function of speed and axle load. It therefore essential that the equipment gross weight and the weight of unsprung parts such as wheelsets be held to a minimum. The resulting axle load limitations precluded a single power unit with two diesel engines. Two power cars per train were thus necessary and for operating convenience these were placed at each end of the train with jumper cables permitting the control of both power cars from either cab.

The passenger cars are basically the same as the standard locomotive hauled British Rail Mark III cars which were already in service. The principle differences being the coupling arrangements and the electrical supply. These cars have many features to provide a restful and attractive travel environment including Air-conditioning, double glazed tinted windows and insulation from external noise.



1 Translucent Roof Panels
2 Filtered Air Intakes for :-
a Electric m/cs & clean air compartment
b Engine combustion
c Engine Room ventilation
3 Driving Cab with :
a Driving position
b Assistant's Seat
4 Electric Control Cubicle
5 Resistance Unit & Short Circuiter
6 Silencer
7 Engine Room Fan
8 Cooling Unit
9 Flexicoil Suspension
10 Rectifier Unit
11 Battery Charging Unit
12 Paxman 'Valenta' Engine, 12 RP200L
13 Alternators
14 Clean Air Compartment Partition
15 Fuel Tank, 5 680 litre max^{m}
16 Battery Box
17 Spillage Tray & Collecting Tank
18 Luggage Van 1 tonne Nominal
19 Brake & other Pneumatic Equipment
20 Emergency & Safety Equipment :-
a Fire Extinguishers
b Towing & Propelling
20c First Aid & Safety
21 Guard's Compartment
22 Air Compressor
23 Main Reservoirs
24 Train Electric Supplies 415 V, 3 phase :-
a Shore supply
b Between cars
25 Parking Brake
26 Horns & Lights

B.R. class 253
POWER CAR FOR
HIGH SPEED TRAIN

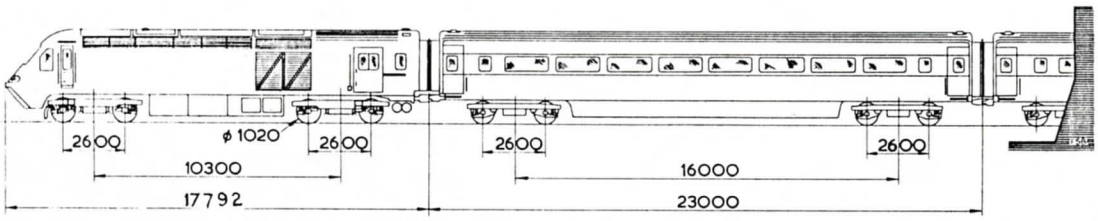


DIAGRAM & DATA FOR HIGH SPEED TRAIN

POWER CAR

Engine, Paxman "Valenta" 12RP 200L

Initial Service Rating 1680 kW

Engine Driven Alternator & Rectifier Supplying DC. to Traction Motors.

Engine Driven Auxiliary Alternator Supplying 450 kW at 415 v 3 Phase, to the train.

Net Power at Rail (2 Power Cars)	2420 to 2700 kW
Luggage Van (Caged Area)	4·5 m²
Maximum Service Speed	200 km/h ≏ 125 mile/h
Weight with Supplies	70 Tonne
Performance: 2 Power Cars, 7 Carriages & varying electric load of Air-conditioning, etc.:-	
Balancing Speed on level	200 km/h
on 5‰R	about 180 km/h
Nominal Operating Range	(1400 miles) 2300 km
Nominal Fuel Capacity	4500 litres

MARK III CARRIAGE

FEATURES

Lightweight Welded Steel Shell

Grouped Equipment Modules on Underframe

Air Sprung Disc Braked Bogies

Air Conditioned

Automatic Interior Doors

Public Address

Ergonomic Seats

Double Glazing

Provision for Chemical Toilets

Modular Constructed Interior Trim

TYPES

First Class Saloon	48 Seats
Second Class Saloon	72 Seats
Kitchen/Saloon	23 Seats
Buffet/Saloon	34 Seats
Weight	33 – 39 Tonne

Food services are provided within the train consist, all cooking equipment being electrically powered.

The H.S.T. was designed by the Bitish Railways Board Chief Mechanical and Electrical Engineers Department at the Railway Technical Centre, Derby with collaboration from the Research & Development Division and equipment manufacturers. British Rail Engineering Ltd. are responsible for manufacturing the H.S.T.'s - the power cars at Crewe Works and the passenger cars at Litchurch Lane Works Derby.

The Passenger Planning Department established that the optimum train size for the services that the H.S.T. will provide was of 7-8 passenger cars. At the present time sufficient power and passenger cars have been constructed to form 27 train sets for the Western Region daytime services from London to Bristol and South Wales and 32 trainsets for Eastern Region daytime services from London to Leeds, Newcastle, Edinburgh and Aberdeen.

THE POWER CAR

The design weight was restricted to 70 tonnes, which was achieved by using equipment as light as possible consistant with reliability, strength, reasonable cost and the high planned utilization of the trains.

The underframe and stressed skin bodyside is of integral all welded, mild steel construction. Computer aided design and finite element techniques were used to analyse and optimise the structure. The underframe is generally of 10 mm (0.39") thick material, the bodyside frame pressings 2.5 mm (0.098") and bodyside skin 2 mm (0.08") thick. Two transverse bulkheads divide the body, one at the rear of the cab and the other at the forward end of the baggage area. The floor area between these bulkheads has a self draining sealing plate, the spillage collecting in a tank below the underframe. All air intakes are as high as possible with dry diposable filters installed where necessary.

The cab is a monocoque, demountable unit with streamlines nose, resiliently mounted on the underframe. The individual inner and outer skins are of glass reinforced polyester which together with a polyurethane foam core form a sandwich which gives the structure a high strength to weight ratio. The crew benefit from a much improved environment by reduced noise levels and protection from minor impacts at high speeds.

The operating position and controls were ergonomically designed using anthropometric data to facilitate precise control and reduce driver fatique. The cab is air-conditioned to maintain a temperature of 20-22°C(68-72°F)

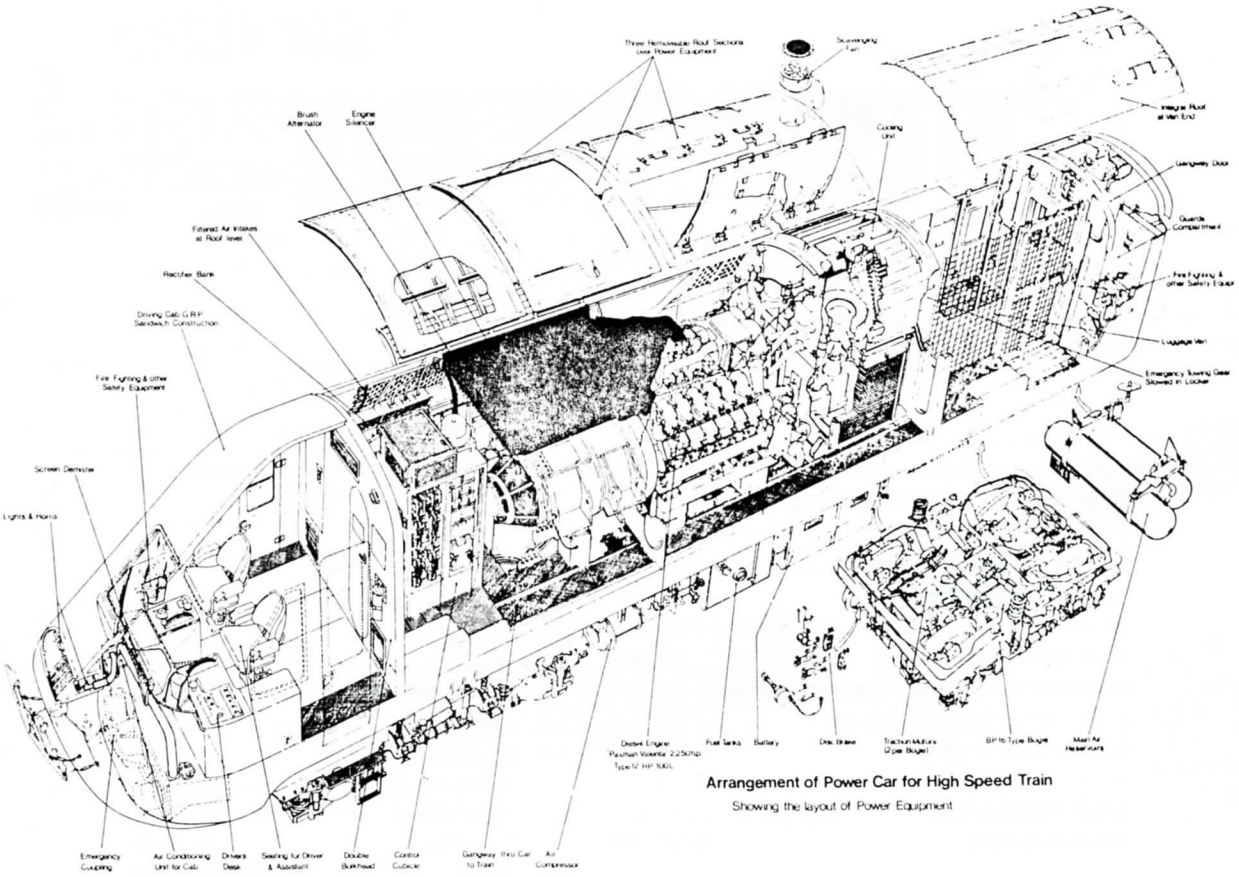
A door in the cab bulkhead gives access through the electrical compartment, engine room and cooling group to the baggage area and conductor's compartment. Additional access for mainentance is through the roof which has removable sections of aluminum and GRP. There is a vestibule connection from the power car to the rest of the train and the baggage area can be locked to form a security compartment.

The engines are Ruston Paxman "Valenta" model 12 RP 200L, 12 cylinder, 4 stroke, 79 litre, pressure charged and charge air cooled. Maximum continuous rated output is 1680 kW (2250 HP) at 1500 rpm. This engine was developed from the "Ventura" which has been used in rail traction since 1958. The direct driven alternator set is flange mounted to the engine and complete power unit is resiliently mounted on the underframe. The combustion air is filtered and ducted to the engine turbocharger. The fuel is filtered, de-aerated and water separated being supplied from fuel tanks slung below the underframe. There is fuel capacity for approximately 2300 km (1400 miles) operation. The engine has a conventional exhaust pipe and silencer. A roof mounted scavenging fan ventilates the engine room.

A 2-circuit cooling unit designed by Voith and built by Marston-Excelsior in aluminum alloy, together with Marston heat exchangers, cools the engine jacket water, lubricating oil and combustion air. The single fan is driven by a shaft from the engine via a bevel gearbox and thermostatically controlled fluid coupling. Coolant circulation is by mechanically driven pumps. Particular attention has been given to achieving a leak-proof system; all hoses are of the flanged type and pipe runs are as simple as possible. The cooling water has antifreeze and corrosion inhibiting additives.

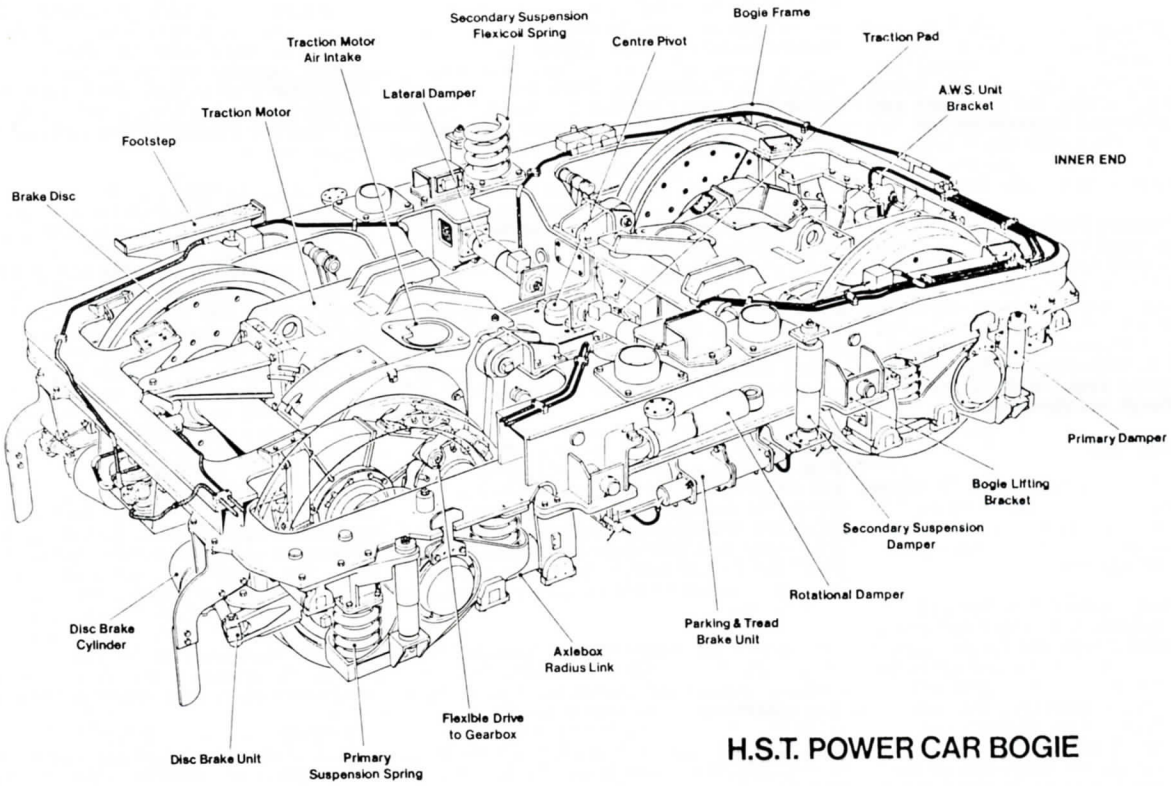
In addition to two 5.4 kg (12 lbs) portable BCF extinguishers a fixed fire fighting installation affords protection against fire hazards to equipment mounted within the body. The system comprises a 18.2 kg (40 lbs) bottle of BCF discharged through a disribution pipe network. This is actuated by pull handles situated in the cab and on the bodyside. An atomatic fire detection and alarm system consisting of heat detectors, test button and alarm bell complete the system.

A secondary bulkhaed separates the engine from a clean air compartment containing the main electrical machines, control equipment and brake equipment. The alternator set supp-



Arrangement of Power Car for High Speed Train

Showing the layout of Power Equipment



H.S.T. POWER CAR BOGIE

lied by Brush Electrical Machines consists of the main traction alternator, plus an auxiliary alternator and their brushless exciters in one unit. The machines are rated to give an output commensurate with an engine output of 1868 kw but will initially entre service at an equivilent rating of 1680 kw. The traction alternator is a 3-phase machine with a rectified output of 1468 kw at 1500 rpm. The auxiliary alternator is also a 3-phase machine with an output of 400kw, 415V at 1500 rpm. and is used for supplying the power car auxiliaries and train supplies such as air conditioning and kitchen equipment. The rotor carries rotating diodes to rectify excitation current and a fan to draw filtered air through the machine for ventilation. The main traction diodes and surge protection equipment are mounted in an air coled cubicle attched to the bodyside.

There are four traction motors per power car Brush type TMH68-46 which are four pole, series wound, force ventilated machines. The traction motors are frame mounted, each motor having a three point suspension on the truck frame. Consequently a flexible drive from traction motor to axle mounted gearbox is required to cater for the axle movement. The patented transmission design uses a hollow pinion mounted in the gearbox through which passes a floating shaft having flanges at each end. The pinion on the side remote from the motor has a flange external to the gearbox and connected to one flange on the floating shaft by means of six resilient links. The other end of the floating shaft is similarily connected to the motor drive flange. The forged aluminum alloy gearbox is carried on the axle and its reactions are transmitted to the truck frame through a resilient link.

The truck has a welded mild steel frame similar to the prototype which was statically tested in the Research Department Laboratory, and dynamically tested and proved under service conditions. Monobloc wheels with cast iron cheek plates for the disc brakes are shrunk onto each axle, the axle boxes are guided by radius links, with primary suspension by coil springs. The secondary suspension is by Flexcoil springs. Hydraulic dampers control the primary and secondary suspension, lateral movements and high-frequency truck rotation. Traction and braking forces are transmitted between truck and body by pre-compressed rubber elements and a pivot casting

The braking system throughout the train is basically the British Railways standard two pipe automatic air brake, controlled from each power car by Davies and Metcalfe E70 electrically controlled automatic air brake equipment. Its special feature is that it provides the H.S.T. with a stopping distance from 200 km/h (125 mph) somewhat less than that of existing locomotive hauled trains from 160 km/h (100mph). Girling disc brake units with wheel lock prevention equipment are fitted to all axles. Additionally a cast iron tread conditioning brake acts on each wheel during a service brake application to maintain wheel/rail adhesion. The tread brake units incorporate a spring/air parking brake developed by Davies and Metcalfe.

PASSENGER CARS - THE MARK III COACH

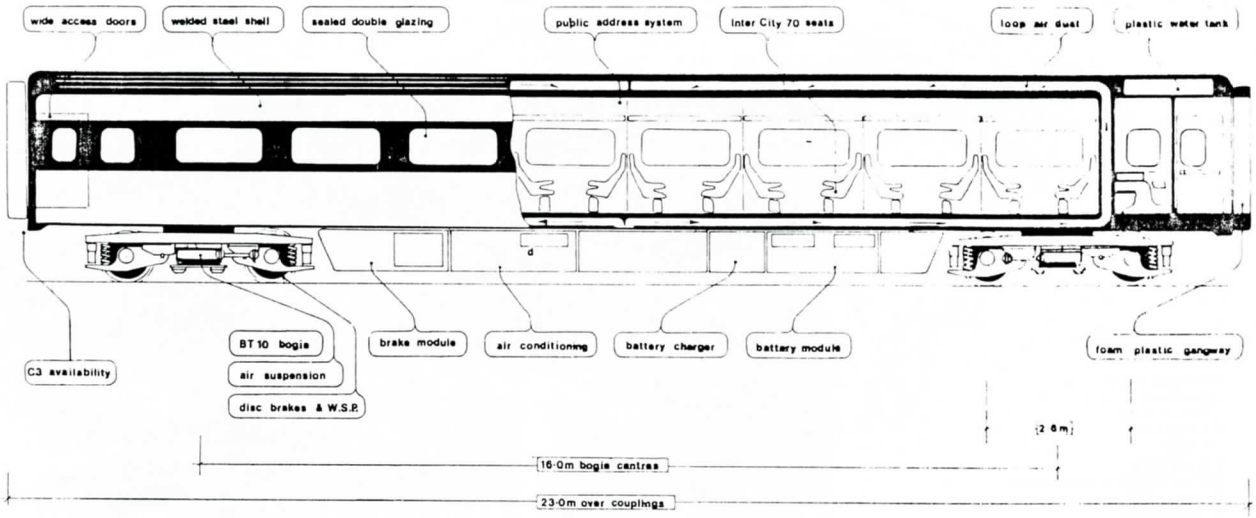
When British Railways was formed in 1948, it inherited a varied collection of passenger cars from the four railway companies. In 1951 the first examples of the BR Mark I car entered service; they were of conventional design with a load-carrying underframe supporting an all steel welded body. The Mark I was equipped with vacuum brake, steam heating, and the conventional steel section frame trucks were designed for speeds up to 145 km/h (90 mph). The Mark II car was introduced in 1963. It was 20 metres (65 feet) long, integrally constructed of steel, with a pressurised ventilating and heating system, and trucks designed to operate at 160 km/h (100 mph). High platforms in passenger stations (many of them on sharp curves) together with the limiting dimensions of fixed structures on the track, restricted the length and width of British Railway passenger cars compared with their Continental and North American equivilents. However, improved design techniques and some civil engineering work has now made it possible to obtain acceptable route availability for a car 23 metres (75 feet) long.

The Mark III coach has benefitted from improved technology and materials which have become available since the Mark II coach was introduced. The modular body shell construction can be used for either first or second class seat layout and can be converted internally if required to meet changinf business requirements. The same basic structure principles are maintained in food service cars. The cars are designed to operate at 200 km/h (125 mph) with high annual mileage and minimum maintenance.

The stressed skin structure is of integral all welded, mild steel construction and was designed with the aid of computer based finite element analysis techniques to give strength and stiffness with light weight and minimum first cost. As the H.S.T. runs as a fixed consist, side buffers were not required and all vehicles are equipped with solid shank buckeye couplers with lateral side control. The vestibules between the cars are attached to the couplers in such a way that a pair of mating diaphragms is always in line even when the train is negotiating a tight curve.

The cars have wide entrance doors at each end leading into a vestibule from which is access to the toilet compartment. The sliding doors separating the vestibule and the toilet compartment from the seating area are automatically operated by treadmats positioned in the approach floor areas. Seat and table fixing rails are fitted the full length of the floor and the bodyside so that 1st. and 2nd. class ergonomically designed seats can be fitted as required at approriate spacing. 1st. class seating is positioned in the basic layout to give 48 seats and 2nd. class to give 72 seats. Seat covers are removable for cleaning. In 1st. class cars the seats are individually adjustable. One end seat and table have been designed to be readily removable in order to provide room for a disabled passenger in a wheelchair of 600 mm (23½") maximum width. The removed seat is stored in the baggage area and the table in the end luggage bay.

The vestibule is furnished with coloured glass reinforced polyester panels and mouldings for brightness, cleanliness and ease of maintenance. The toilet compartment is pre-constructed in three sections which are assembled in position as a module. The plastic water tank can be removed through a hatch on the

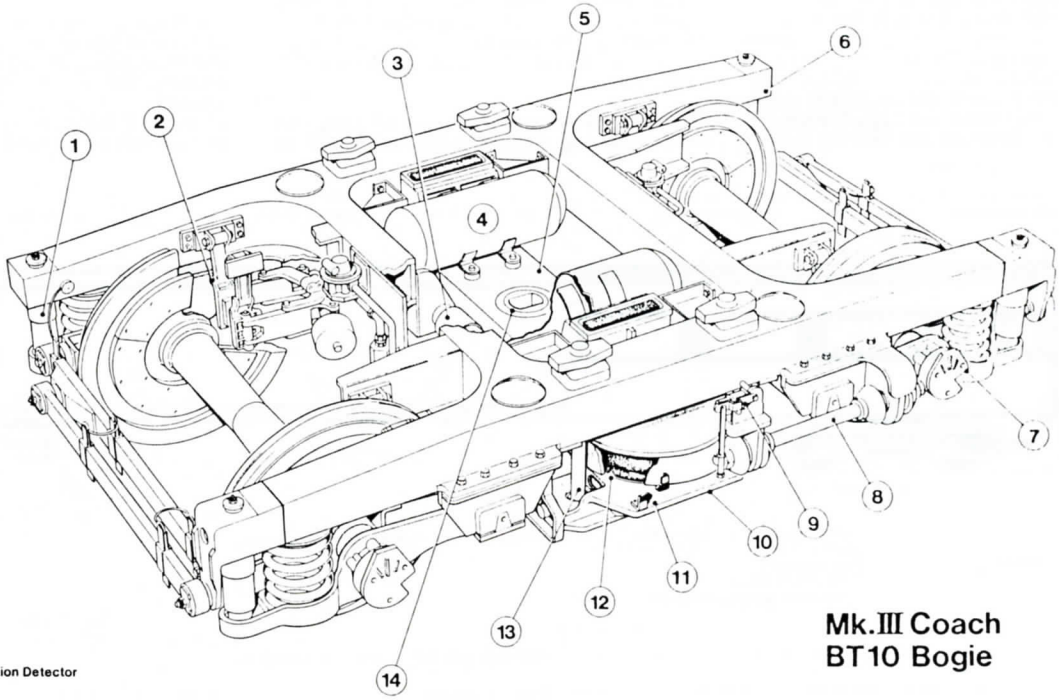


Mk3 day coach

Air Extractors
Removable Water Tank Cover
Roof
Vertical Connecting Ducting
Toilet
Luggage Shelves
Fluorescent Lighting
Ceiling Ventilation Ducts
100 Gallon Water Tanks
Tank Support & Packing Boards
Saloon Partition
Contoured Wide Access Corner Doors
Luggage Racks
Roof Carline Diaphragms
Stepboard
Lifting Point
Adjustable Seating
End Canopy
Module Shrouding
Collision Beam (Horizontal)
Double Glazed, Tinted Windows
Saloon Heating Duct
Underfloor Ventilation Ducting
Continuous Bodyside Longerons
Skinned Foam Gangway
Drawbar & Coupling
All Steel Body Shell Construction
BT 10 Bogies
Air Sprung & Disc Braked

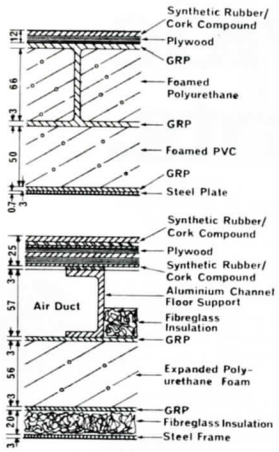
Arrangement of Mk.III, 1st. Class Open Carriage

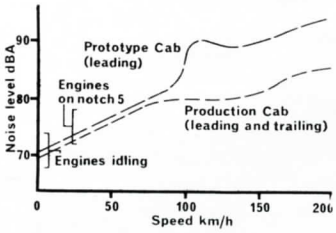
Showing progressively the constructional details.



1 Primary Damper
2 Disc Brake
3 Lateral Damper
4 Air Reservoir
5 Bolster
6 Bogie Frame
7 Wheel Slide Protection Detector
8 Traction Rod
9 Levelling Valve
10 Spring Plank
11 Air Suspension Indicator
12 Air Spring
13 Swing Link
14 Centre Pivot

Mk.III Coach BT10 Bogie

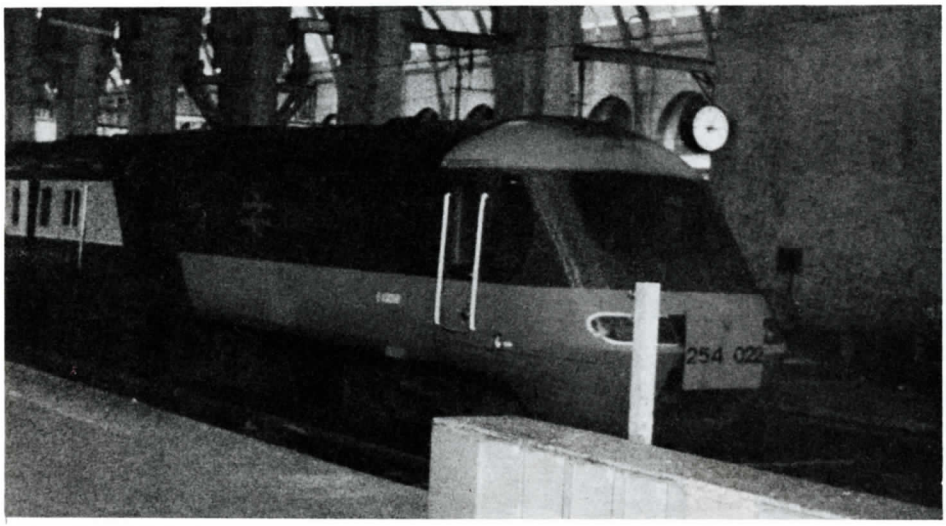


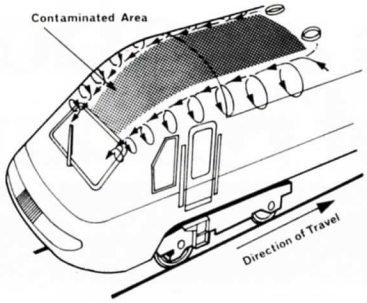


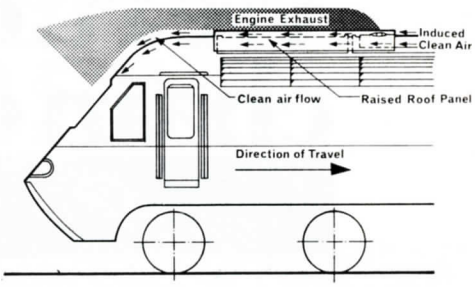
DIAGRAMS ABOVE
Top and Middle - The cab floor insulation system was changed from the prototype (top) to the production models (middle). The cab noise was noticable reduced (bottom)

British Rail

The "Flying Scotsman" of the 80's. An H.S.T. unit is now the successor of the famous name train. Seen here at London's Kings Cross Station prior to departure. Note the end panel raised for a "shore based" power hook up. An emergancy coupling is also mounted behind this panel. (M.F. Layton)







outside of the roof. Double glazed sealed windows with tinted float glass are fitted and moulded glass reinforced polyester interior surrounds five easy access to the wundows for replacement purposes. Hand luggage storage is provided on a continuous overhead rack and additional storage for large cases etc. is between seats or in the luggage bay at the end of the car. Lighting is fluorescent from cieling mounted diffusers. Each 1st. class seat position has a reading light. The car is fully air-conditioned, the system being able to maintain an interior temperature of 21°C (70°F) in ambient conditions in the range -6°C (21°F) to 28°C (82½°F).

Each coach is supplied with 415V 3-phase AC from the power car permitting advantage to be taken of commercially available electric equipment and technical advances. The air-conditioning system works at 415V. The power supply is also converted to 110V DC for lighting, control and battery charging. Each car has multi-core cables for the train control. The H.S.T. vehicles are not electrically compatible with the locomotive hauled Mark III cars which operate at 850V DC or AC. In any case this particular feature will not present operating problems as each H.S.T. is regarded as a semi-permanent unit.

Power and control equipment is located underneath the body structure and contained within the skirting between the trucks, which gives protection from damage and maintains cleanliness. Access to the equipment is by hinged doors along the sides and removable panels from the underside. In addition to complete modules of equipment, assemblies can be removed for maintenance elsewhere and replaced by modules drawn from depot stores. Air and electric connections to the modules are of quick make-and-break types. The four principle modules are:-

Problems from exhaust fumes fouling the windshield of the trailing cab led to a redesign of the power car roof line.

1) Brake and air suspension
2) Air conditioning
3) Battery
4) Battery charger

The brake and air-conditioning modules are designed such that they can be obtained as fully interchangable package units from alternative suppliers.

The trucks are designed to give safe, comfortable riding up to 200 km/h (125 mph) and have been extensively tested in service. The frame is of all welded, mild steel construction, designed to run at low maintenance cost. The primary suspension is by trailing arm with a rubber bushed pivot and one coil spring per wheel. Lateral control of the wheelsets is by rubber bushed links between the trainling arms and the truck frame. The monbloc wheels carry cast iron cheek plates for the Girling disc brakes. The secondary vertical suspension is by air springs with levelling valves to maintain constant body height. In the lateral plane long pendulum links are used with a torsion bar to control body roll. Hydraulic dampers are fitted to the primary vertical and secondary lateral suspension, whilst air damping is employed on the secondary vertical suspension. The weight of thebody is carried on the truck bolster by two side bearers of low friction material which control truck rotation. The truck pivots on a pin which has rubber bushed guides which transmit traction and braking forces to the bolster. Rubber bushed traction links transmit forces between the bolster and the truck frame.

IN SERVICE

Introduction of the summer timetable on May 8th. 1978 saw 20 out of the 21 High Speed Train diagrams planned by the Western Region of British Rail in operation, while the first H.S.T. schedules on the East Coast mainline cut the "Flying Scotsman's" London to Edinburgh time from 5h 27min to 4h 52min, an overall average speed of 130 km/h (81 mph) including an intermediate stop at Newcastle.

Apart from Japan's electrified "Shinkansen", British Rail's diesel powered H.S.T. service has no equal for speed and frequency. About three years of experience has now been accumulated since 200 km/h (125 mph) schedules were introduced between London, Bristol and South Wales on October 4th. 1976. There have

Part of British Rail's promotion for their catering services includes this Ad. showing the restaurant car of the H.S.T.

been some tetthing problems, but on the whole the trains have proved well able to cope with the demanding achedules which include a start-to-stop run of 24 min over the 66.5 km (41 miles) between Swindon and Reading, an average speed of 166.2 km/h (104 mph) which is exceeded only in Japan.

Passengers are full of praise for the high standards of comfort provided by the Mark III cars from which the H.S.T. sets are formed. A frequent comment is that the riding qualities and sound insulation are so good as to destroy the illusion of high speed. The fall of 1977 saw a 27% increase in travel between London and Inter City stations served by the H.S.T. compared with the same period in 1975, despite the parallel M4 expressway.

The Western Region's full inter-city service from London to Bristol and Weston-Super-Mare and to Cardiff and Swansea is designed around 21 H.S.T. diagrams on a normal weekday, the average distance run daily being around 1200 km (750 miles) for each set in service. A typical H.S.T. diagram covering two days between maintenance examinations at a depot would be:-

	Arrive	Depart
Bristol		04.55
Taunton	06.00	06.50
London	09.20	10.00
Swansea	13.03	14.00
London	16.55	17.33
Swansea	20.30	
overnight and refuel		
Swansea		06.35
London	09.30	11.00
Swansea	13.55	15.00
London	18.03	19.05
Bristol	20.41	

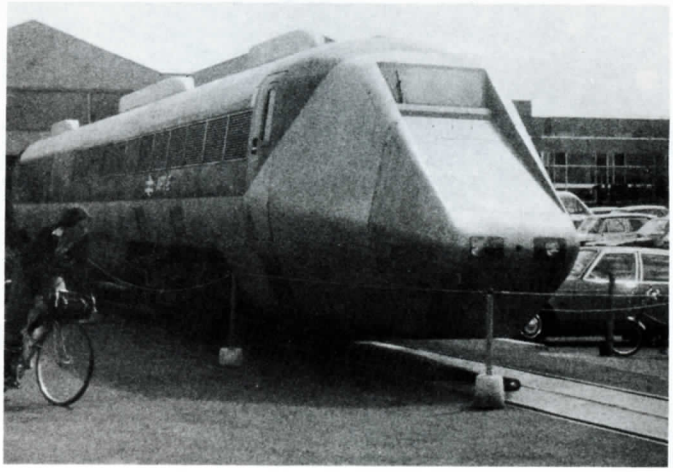
The total distance is 2395 km (1500 miles) of which some 50% would normally be at speeds exceeding 160km/h (103 mph).

When 200km/h (125 mph) services began in October 1976 they involved eight daily diagrams plus two sets on standby. As the number of H.S.T. sets available increased diagrams were added so as to bring more into daily use.

Up to the end of 1977 the total distance run by the Western Region H.S.T. fleet was 6,800,000 km (4¼ million miles), the average distance run per week for each of the 19 diagrammed H.S.T. sets was 7600 km (4750 miles).

A mid-morning southbound H.S.T. train noses through the switchwork north of York station. This is the half way point of the Edinburgh - London working. (M.F. Layton)

Waiting in the wings is the Advanced Passenger Train, due to start regular service this coming May. Production APT's are 25Kv electric. Shown here is the gas turbine powered prototype. (MFL)



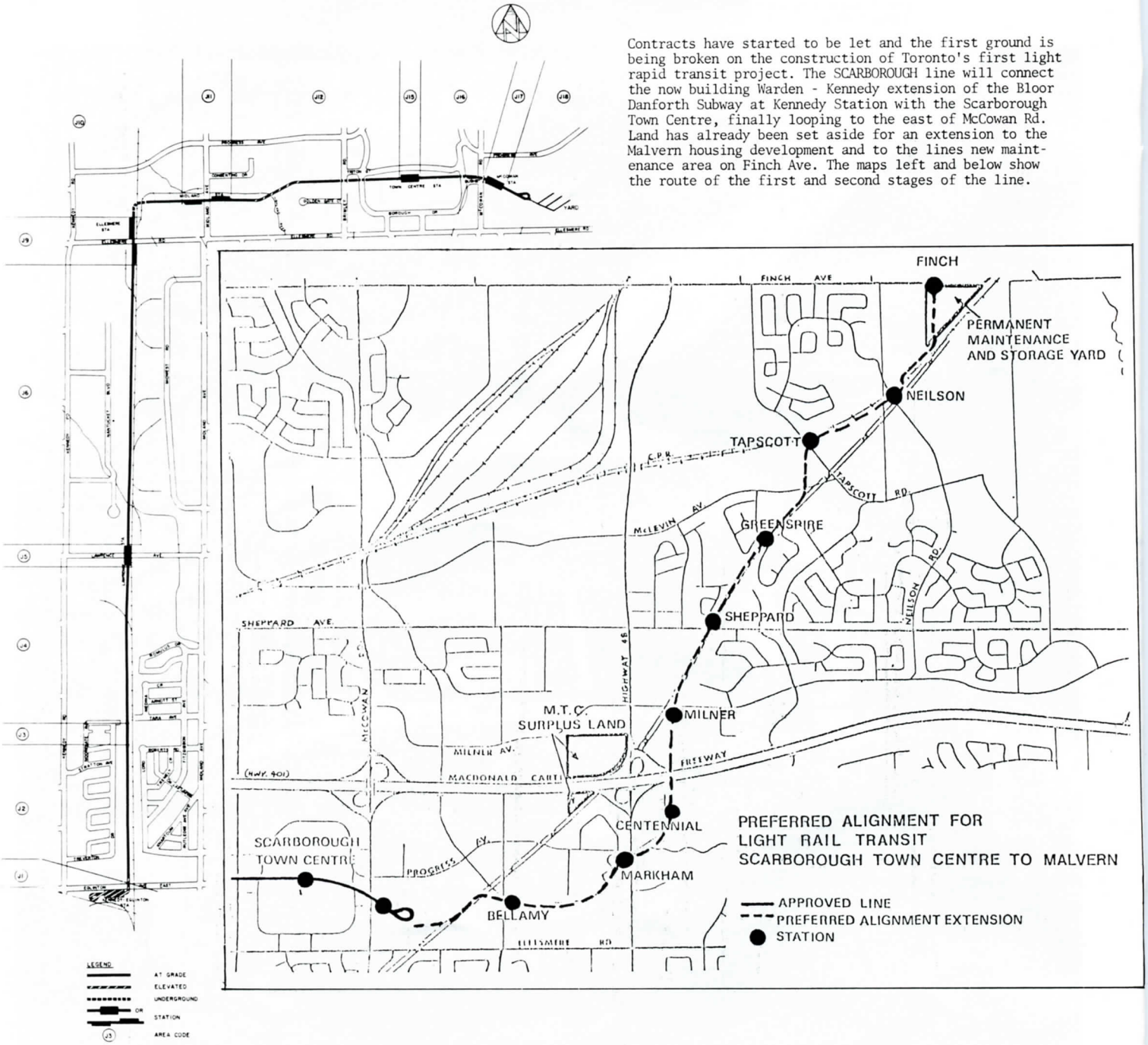
In Transit

Toronto's carlines now have a new image. Gone are the Century-old route names and in come the new route numbers. Seen here at Dundas West subway station loop, PCC car #4465 on route 505. In case you are confused, and most Torontonians are, route 505 used to be the DUNDAS carline. (Ted Wickson photo)

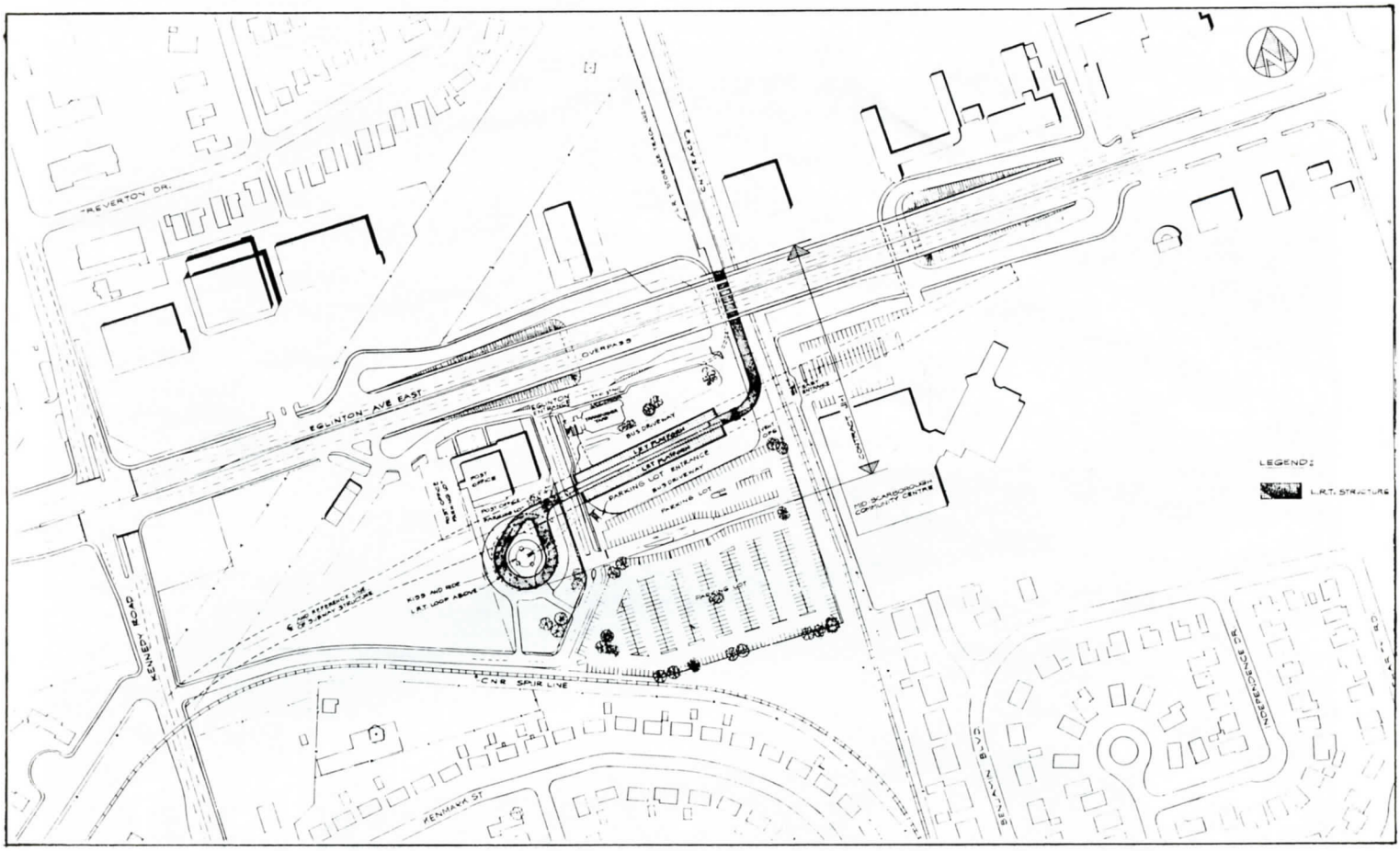
SCARBOROUGH LRT LINE -

PLANS RELEASED

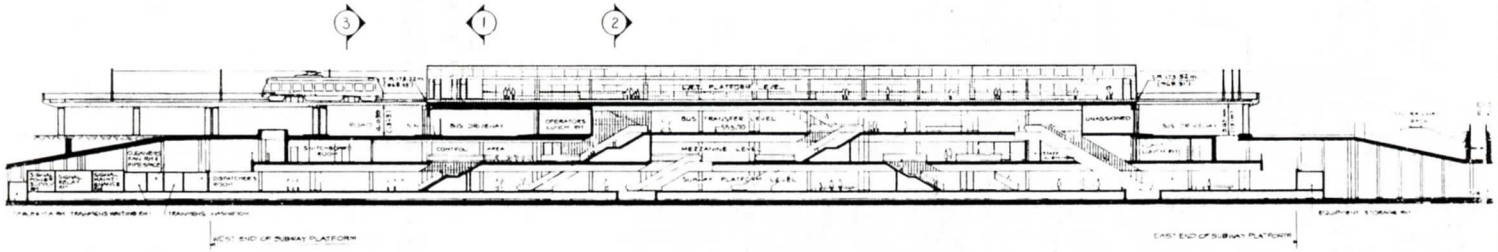
Contracts have started to be let and the first ground is being broken on the construction of Toronto's first light rapid transit project. The SCARBOROUGH line will connect the now building Warden - Kennedy extension of the Bloor Danforth Subway at Kennedy Station with the Scarborough Town Centre, finally looping to the east of McCowan Rd. Land has already been set aside for an extension to the Malvern housing development and to the lines new maintenance area on Finch Ave. The maps left and below show the route of the first and second stages of the line.



The interchange station with the Bloor - Danforth Subway at Kennedy Station, when complete,will be the largest station on the TTC system, having four operating levels. The lowest level will be the subway platforms, above them a passenger mezzanine is under construction. The bus platforms will be at ground level with the elevated LRT platforms making up the top floor. The drawings on the opposite page show the plan and elevations of the station.



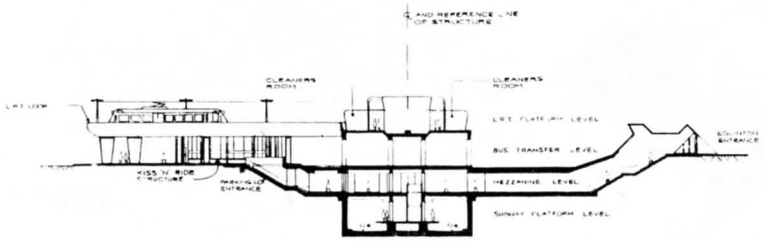
SOUTH ELEVATION



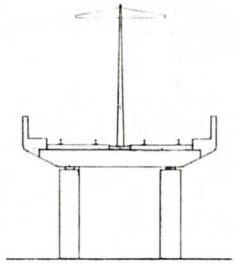
LONGITUDINAL SECTION

LEGEND:

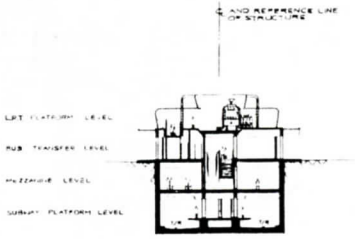
L.R.T. STRUCTURE



SECTION 1-1

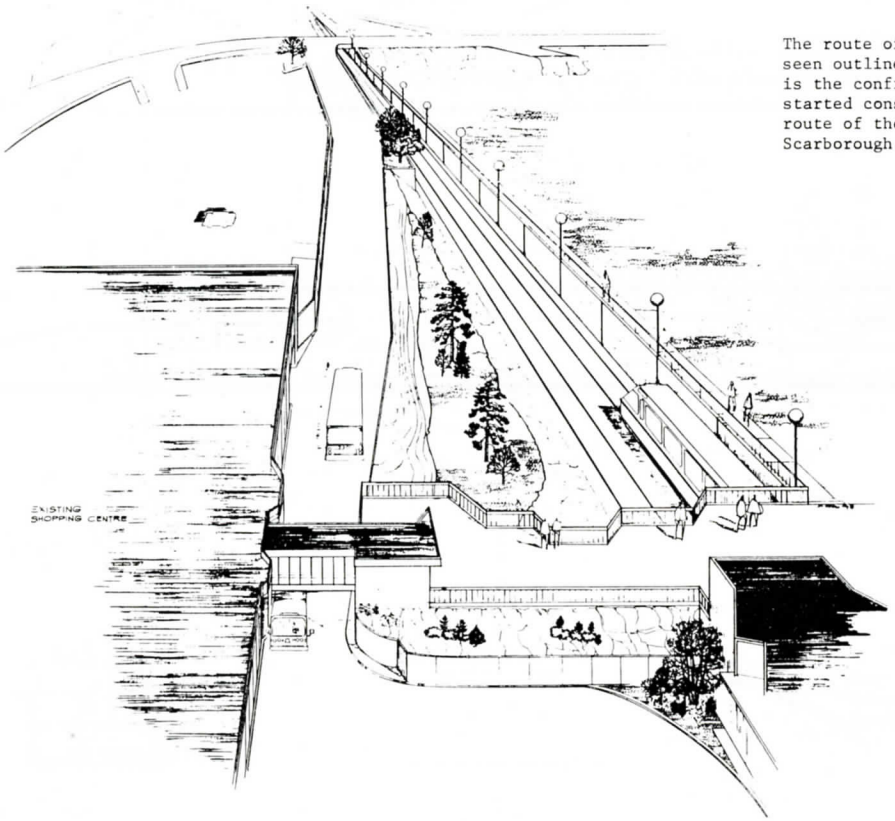


SECTION 3-3

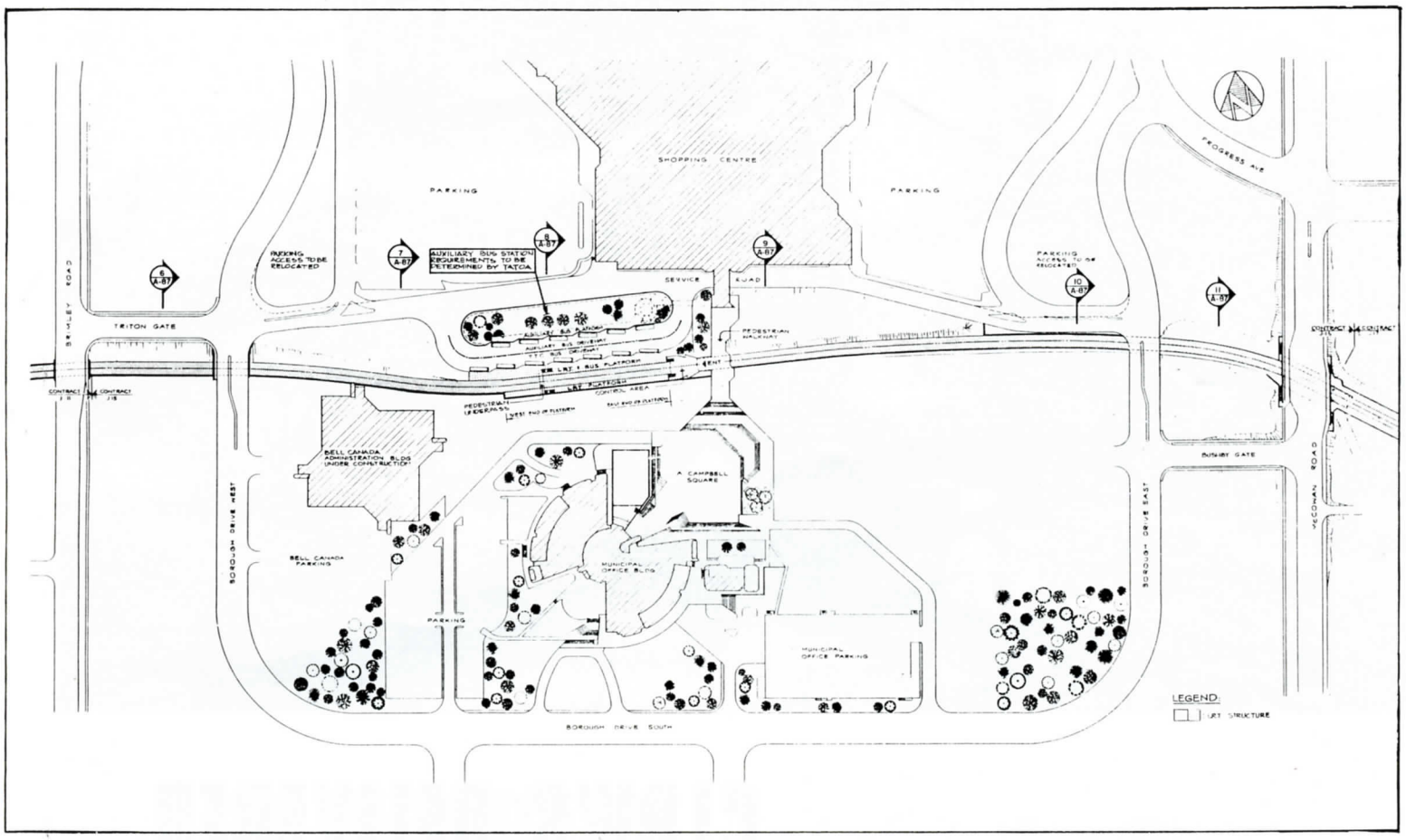


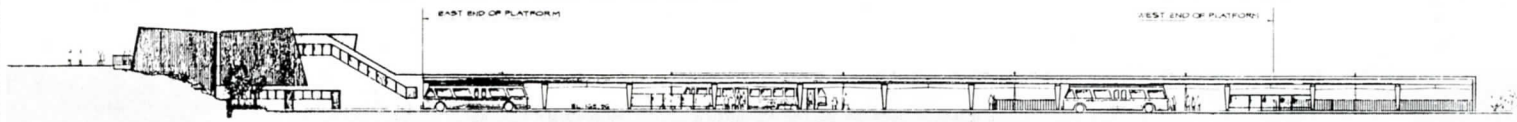
SECTION 2-2

The route of the new LRT line in eastern Scarborough is seen outlined on this aerial photograph. The solid line is the confirmed route of the first stage which has just started construction, the dotted line shows the prefered route of the eastern extension to Malvern. (Borough of Scarborough photo)

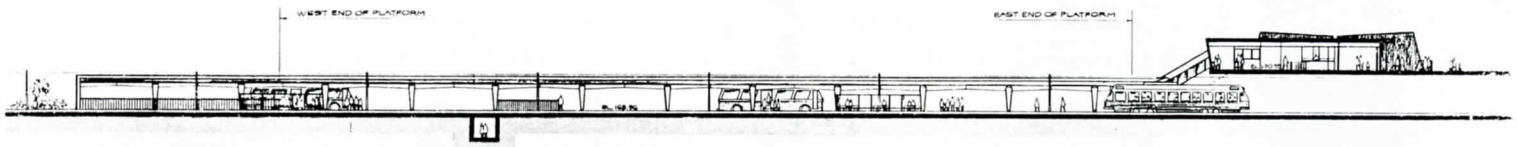


The second largest station on the line will be at Scarborough Town Centre where interchange facilities will be built for the LRT cars and TTC buses as well as GO Transit and inter-city buses. It is possible that Markham Transit will also make connections to this station. On the left is an artists drawing of the station and the immediate area, drawings on the opposite page show the plan and elevations of the new station.

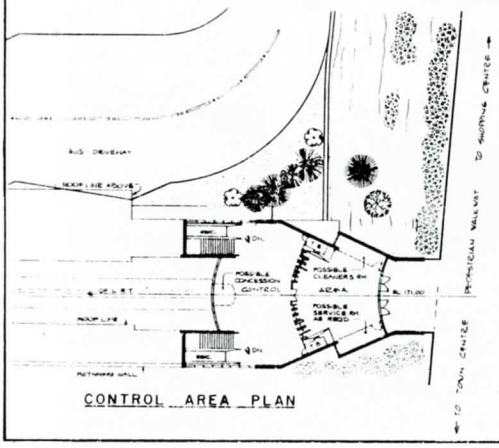




ELEVATION 1



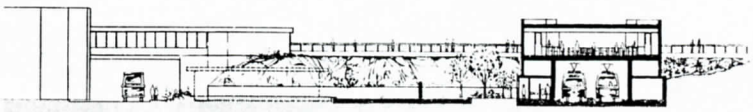
SECTION 2



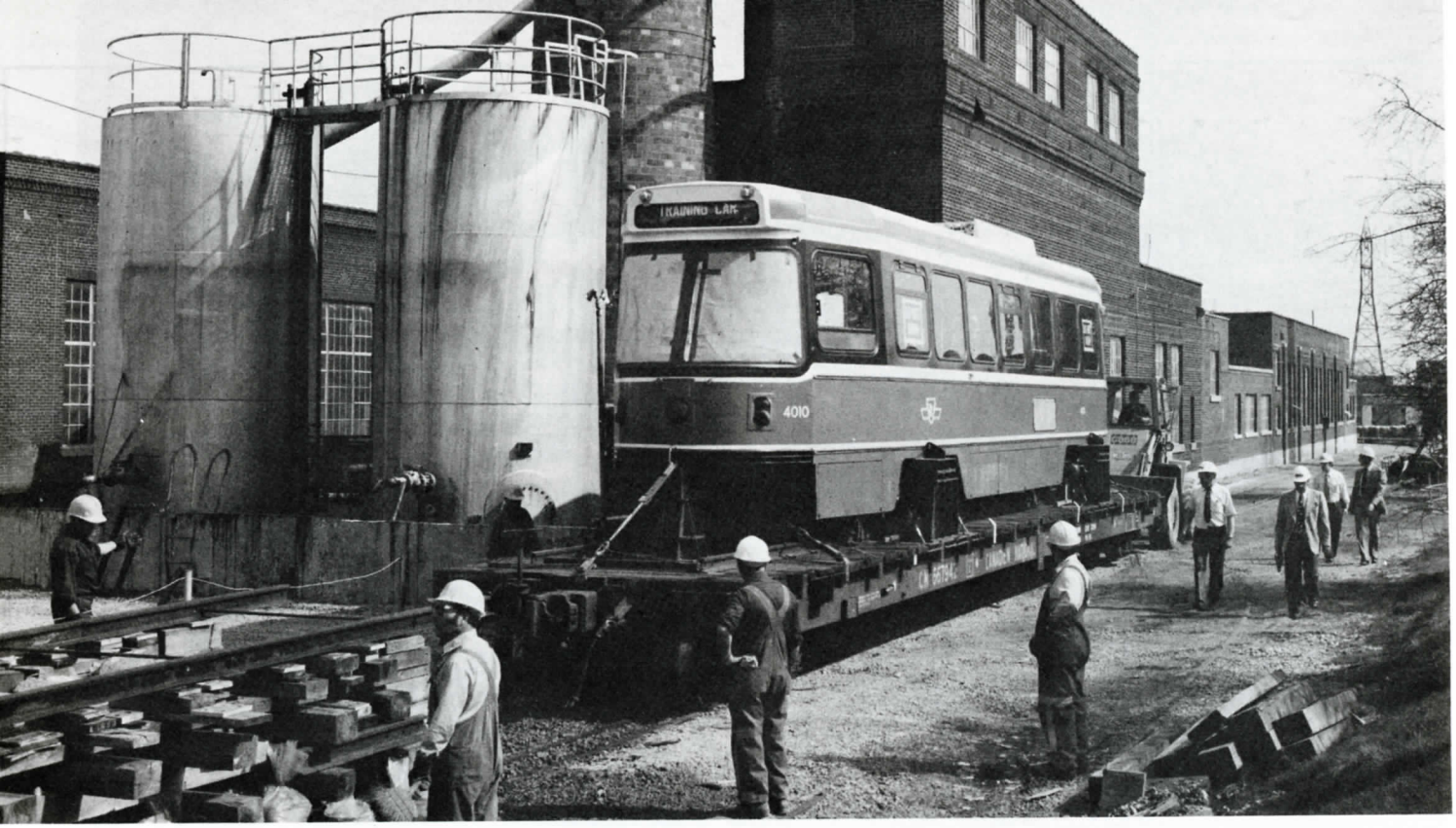
CONTROL AREA PLAN

SECTION 3

SECTION 4



SECTION 5



CLRV'S DELIVERED...

Looking back to April 24th. last when the first Canadian built light rail vehicle in thirty years is unloaded onto Canadian rails. The first of class L-2 #4010 is delivered to Hillcrest shops where the delicate job of rolling her off the flatcar is undertaken. (TTC photos)

...AND IN SERVICE

Two shots of CLRV car #4019, one of the Canadian built class L-2's. The car is in service on the 507 (nee-LONGBRANCH) route, seen above at Humber Loop and below on Lakeshore Blvd. traversing a section of newly replaced and repaved track.(Both - Ted Wickson)


Rail and Transit