

# *Rail and Transit*

*Canada's Railway Magazine*

**May - June 1978**

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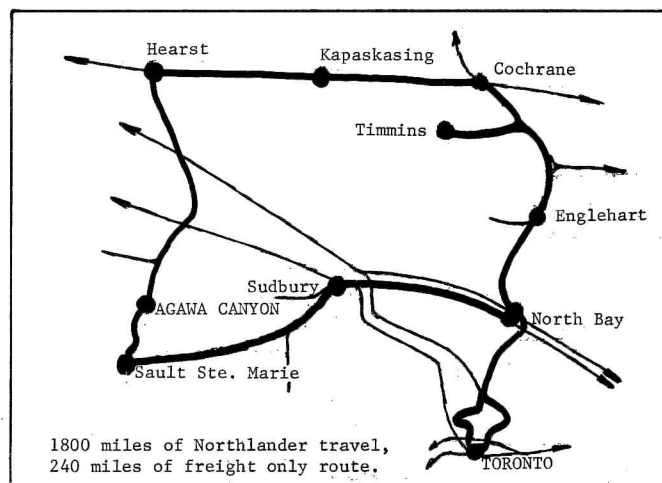
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**FRIDAY**  
Dep. Toronto 5.30pm  
Dep. Washago 7.35pm  
Dep. Gravenhurst 7.55pm  
Dep. Huntsville 8.40pm  
Arr. North Bay 10.30pm

**SATURDAY**  
Dep. North Bay 8.00am  
Arr. Sault-Ste-Marie 6.00pm

**SUNDAY**  
Dep. Sault-Ste-Marie 7.00am  
Arr. Timmins 11.30pm

**MONDAY**  
Dep. Timmins 7.00am  
Arr. Huntsville 2.20pm  
Arr. Gravenhurst 2.55pm  
Arr. Washago 3.15pm  
Arr. Toronto 5.10pm



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**CP Rail**



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### FRONT COVER

The Edmonton Light Rail Transit in action. Seen here on part of the surface section of the line on one of the many level crossings. Train here is heading downtown. (M.W. Roschlau)

### BACK COVER

British Columbia Railway Royal Hudson #2860 on one of the wooden trestles that lay between North Vancouver and Squamish. (Tourism B.C.)

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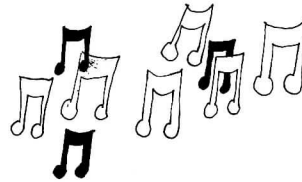
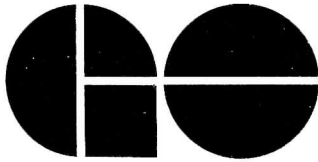
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# Richmond Hill

# GO TRAIN



BELOW: Canadian National 6060 and brand new GO Transit F40PH 510 at Richmond Hill GO Station on opening day. (Ian McCallum). TOP OPPOSITE: 6060 southbound in the Don Valley at the Bloor Street Viaduct with Richmond Hill- Toronto inaugural GO Train (Ted Wickson). BOTTOM OPPOSITE: Richmond Hill- Toronto inaugural GO Train composed of bilevel cars headed by GP40TC 501. (T. Wickson)

Government of Ontario Transit's newest rail commuter line was officially opened for the use of the public on Saturday 29 April 1978. Full public service then commenced Monday May 1, 1978. The service utilizes the tracks of the Canadian National Bala Subdivision between downtown Toronto and Richmond Hill Ontario, a distance of 34.1 km.

The opening ceremonies were hosted at Toronto Union Station by A.T.C. McNab, Chairman of the Toronto Area Transportation Operating Authority and W.T. Howard, Executive Director of the Toronto Transportation Terminal Project. The Official Party consisted of the Honourable William C. Davis, Premier of the Province of Ontario, Honourable James Snow, Minister of Transportation and Communications for the Province of Ontario, R.S. Allison, Vice President of CP Rail and A.R. William, Vice President of Canadian National Railways.

The Official Train comprised a set of the new Hawker Siddeley bilevel cars and GP40TC 501 and brand new General Motors built F40PH 510.

The train stopped at each of the new stations for opening ceremonies hosted by dignitaries from the area served by them.

Oriole GO Station, at Highway 401 and Leslie was declared open by M. Lastman, Mayor of the Borough of North York, John Williams MPP for Oriole, and Paul Godfrey, Chairman of the Municipality of Metropolitan Toronto.

Old Cummer Station was opened by the Honourable Bette Stephenson MPP for York Mills and Minister of Labour for the Province of Ontario. The Station is located at Leslie Street West, north of Finch Ave.

Langstaff GO Station, located at Old Highway Number 7 was declared open by Anthony Roman, Mayor of the Town of Markham and Garnet Williams, Mayor of the Town of Vaughan.

The Richmond Hill GO Station was officially opened by Dave Schiller, Mayor of the Town of Richmond Hill and Garfield Wright Chairman of the Regional Municipality of York.

As well as a train of new GO Transit equipment, Canadian National 4-8-2- #6060 and a train of CN coaches was present, to show the contrast between the old and the new.

After the ceremonies at Richmond Hill were complete, both 6060 and the Bilevels were run to Toronto and return to provide a complimentary ride. The rides were also available between the intermediate stations.







The four new stations have the usual GO Transit fare collection system now in use on the rest of the system. One half of the ticket allows the passenger into the station and the other half is deposited at the exit of the destination station. Platforms at each station are 900' long with the exception of Richmond Hill which has a platform of 540'. This will be extended once the grade separation at Markham Road is completed.

Construction of the line cost approximately \$7.8 million dollars for station construction, 5 miles of new line between Richmond Hill and Thornhill, upgrading of present track and new signals and communications equipment. The Federal Government also contributed \$10 million towards the cost of rolling stock.

Current service requirements are 3 southbound trains in the morning rush hour and 3 northbound trains in the evening rush hour. The 3 trains are met in the morning and evening with connecting bus service to and from the towns of Aurora and Newmarket. The line also interfaces with buses of Richmond Hill Transit, Markham Transit and the Toronto Transit Commission.

The trains are run in and out of GO Transit's maintenance facility at Willowbrook and are not stored at Richmond Hill overnight. This means that they have to be run up in the morning and back in the evening. The usual practice is to run all three in morning and evening as one equipment move and split them at Richmond Hill in the morning and amalgamate them in the evening for the move back to Toronto.

Running time from Richmond Hill is 40 minutes, 34 from Langstaff, 27 from Old Cummer, and 23 from Oriole.

Fares from and to Richmond Hill and Langstaff are \$1.15 Adult one way, \$10.00 for a book of 10 tickets, or a monthly pass can be purchased for \$35.00. To and from Oriole and Old Cummer the fares are \$.95 Adult one way, a book of 10 tickets for \$8.25 or a monthly pass \$29.00.



Government of Ontario Transit

Honourable William G. Davis, O.C.,  
Premier

Honourable James W. Snow,  
Minister, Transportation & Communications

## SOUVENIR

Richmond Hill Rail Service



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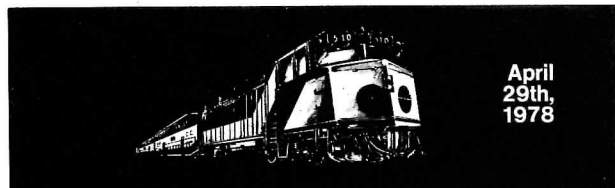
BELOW: Taken on a crew training run, GO Transit GP40-2W 701 leads a train through the scenic Don Valley on the line from Richmond Hill. The line is the most scenic of the GO Transit lines. (GO Transit) OPPOSITE: Equipment move from Richmond Hill after the evening rush hour heading back to Willowbrook Maintenance Facility, taken at the site of old Sunnyside Station 28 July 1978. (R. Sandusky)







# GOVERNMENT OF ONTARIO TRANSIT SOUVENIR



April  
29th,  
1978

## Richmond Hill Rail Inauguration

Government of Ontario Transit locomotives 510 - 515 are Canada's first domestic F40PH types. The locomotive design was originated in the United States to meet the requirements of the National Railroad Passenger Corporation (Amtrak). The design was chosen as an alternative to the SDP40F's that were the source of many complaints by crews due to alleged poor tracking qualities. Several U.S. roads went so far as to ban the SDP40F from their lines.

The F40PH resulted from consultations among the builder, Amtrak officials and some of the operating roads that Amtrak uses, and was an immediate success as the first locomotive designed for passenger service in many years.

In the United States, F40's are now in service with Amtrak, the Chicago Regional Transit Authority, and soon the Massachusetts Bay Area Transportation Authority.

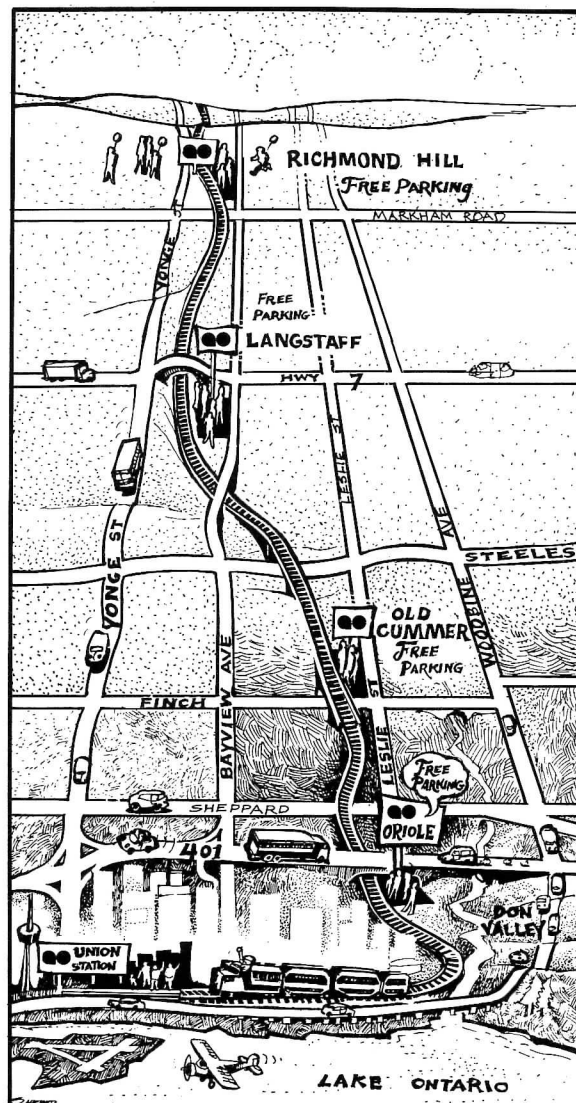
When GO Transit needed new power, one of the locomotives that they looked at very closely was naturally the F40, and ordered six to be built by General Motors Canada Ltd., at their plant in London Ontario.

The engine is the 16-645E3 rated at 3,000 hp. The 16 cylinders have a bore of 9 1/16" (230.2 mm) and a 10" (254mm) stroke. The car body is equipped an auxiliary generator with an output of 600 kw.

The locomotives themselves have a length of 56'2" over couplers a height of 15' 4 3/4" over rail height and a width of 10'8 5/8". The weight in working order is 127 Tons.

RICHMOND HILL

GO TRAIN SERVICE



NORTHBOUND READ DOWN				SOUTHBOUND READ UP				
987	985	983	Zone	Train Numbers		992	994	996
PM	PM	PM			4-30-78	AM	AM	AM
5:30	5:03	4:39	985-996	Lr	Toronto-Union Station	7:48	8:23	8:48
5:35	5:08	4:43		Lr	Oriele Station	7:53	8:28	8:53
5:40	5:13	4:47		Lr	Old Cummer Station	7:58	8:33	8:58
5:45	5:18	4:51		Lr	Langstaff Station	8:03	8:38	9:03
5:50	5:23	4:55		Lr	Richmond Hill Station	8:08	8:43	9:08
				Transfer				
5:55	5:28	4:59	Lr	Richmond Hill Station (Newkirk Rd.)	7:03	7:33	8:03	
6:00	5:33	5:03	Lr	Richmond Hill Centre	7:08	7:38	8:08	
6:05	5:38	5:08	Lr	Oak Ridges (Yonge at King Road)	6:52	7:22	7:52	
6:10	5:43	5:13	Lr	Aurora (Yonge at Wellington)	6:57	7:27	7:57	
6:15	5:48	5:18	Lr	Newmarket Station (Hwy's 1 & 9)	6:52	7:14	7:44	
6:20	5:53	5:23	Lr	Water St.	6:46	7:08	7:38	
				Bus Trip Numbers				
871	863	855				818	826	832



# EDMONTON LIGHT RAIL TRANSIT 1978

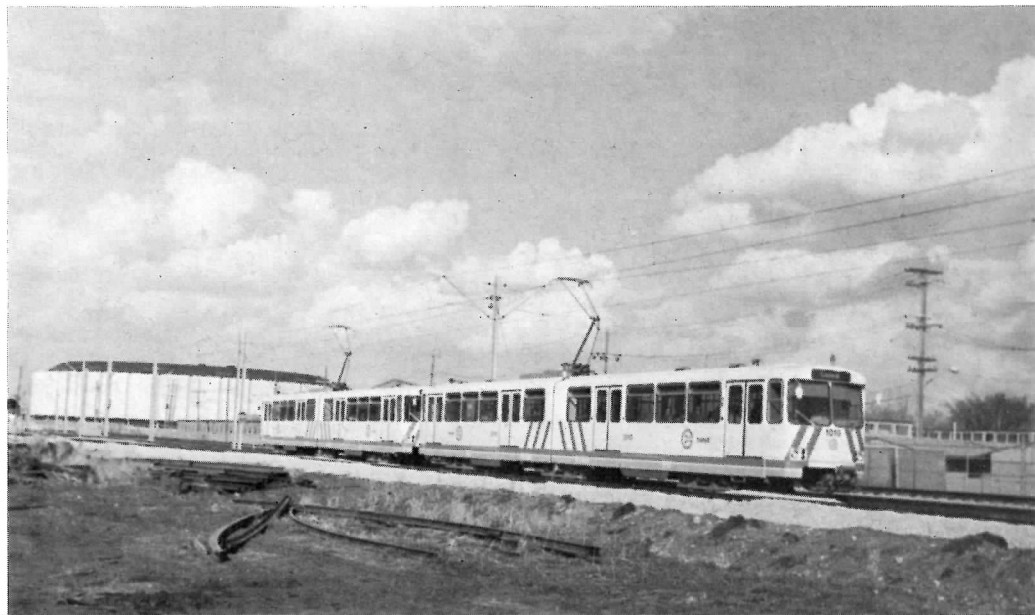
## An In-depth Look at the First of a new Breed

BY MIKE ROSCHLAU

The name Edmonton has always elicited a notion of a frontier gateway in the minds of prospective visitors to the city. Starting with the discovery in 1896 of a rich gold deposit in the Klondike River, a tributary of the Yukon, which led to the famous Klondike gold rush, Edmonton became known as "the gateway to the north". The construction of the Alaska Highway in the 1940s, connecting the U.S. state of Alaska directly to Edmonton by way of an all-weather road, only accentuated this distinction. It is the discovery of oil, however, along with continuous new finds, that has made Edmonton the boom city that it is today. In addition to this, the recent development of the Athabasca Tar Sands near Fort McMurray, some 375 kilometres north of Edmonton, and the construction of the Alaska natural gas pipeline are bound to assure that Edmonton will retain its present distinction of being the fastest growing city in North America, a title not long ago usurped from Mississauga Ont. It is expected that Edmonton, capital city of Alberta, will double in population within the next twenty years.

Although the gold rush sentiment is still celebrated in the annual Klondike Days Festival, Edmonton has come a long way in the last 80 years. Massive skyscrapers are budding like crocuses, and the city's skyline is changing on an almost daily basis. Along with this phenomenal boom have come the inevitable problems and teething pains of rapid urban growth, not the least of which concerns intra-urban traffic circulation. Congestion on the city's arterial roads has caused enormous delays and the city was recently forced to find a way to solve this mounting problem.

Since Edmonton is to be the host on behalf of Canada for the 1978 Commonwealth Games, second only in grandeur and importance to the quadrennial Olympic Games, it was decided that significant improvements would have to be made before August of that year. Three alternatives were considered: an expensive system of freeways and ring roads, a massive upgrading of the bus system, or the construction of the first phase of a light rail transit system. With economy and efficiency in mind, as well as a



ABOVE: Edmonton Transit System Light Rail Vehicle #1010 leads an inbound train away from Coliseum Station in the late afternoon of 24 April 1978.

BELOW: Heading inbound, an ETS LRT train prepares to enter the tunnel underpassing the C.N.R. main line just south of the terminus on 23 May 1978. Belvedere Station is located at the horizon.

(Ted Wickson)



Photographs by the author, unless otherwise credited.

concern for forward planning, it was decided that Edmonton should have yet another distinction of which to be proud. Edmonton is now the first city in North America to commence operation of a light rail transit line, and the first city on the continent with a population under one million with any kind of rapid transit. This is certainly a wise investment for the future, especially at the incredibly low cost of \$65-million; \$9-million per kilometre (compared to \$22-million/km for Toronto's recently completed Spadina Subway), and a predicted annual operating cost of only \$1.4-million.

## LIGHT RAIL TRANSIT

Light Rail Transit, or LRT for short, is essentially a new variation of rapid transit which has evolved as a cross between the traditional streetcar and the conventional subway train system. LRT has been developed, tried and proven in post-war Germany, Belgium, Holland and Sweden and is now operating in more than 25 cities around the globe. Originally designed as a concept for changing a large streetcar system into a modern rapid transit service over a period of two to four decades, LRT has proven so successful that it is now a form of transit in its own right, becoming increasingly popular around the world. It is ideally suited for improving transit service in relatively small cities, but can also serve very well as a less expensive supplement to an existing subway/heavy rapid transit system. LRT is designed to be incrementally upgraded into heavy rapid transit if so desired to match city growth through the years, and has now won acceptance in Canada with the construction of new lines in both Calgary and Toronto underway, in addition to the ground-breaking Edmonton line.

LRT complements the primary automobile system of transportation in the area where it does not work well: the central city. LRT allows continued reliance on the primary automobile arterial roadway system without the construction of costly, destructive downtown freeways, for the entire city and particularly the central area can not continue to grow into the future without a costly network of downtown freeways unless the transit system is substantially improved. No city in North America depending on freeways to serve the city centre has a strong downtown. On the other hand, there are cities with good transit networks and no freeways serving strong and healthy downtowns.

The successful implementation of an LRT system in Edmonton is that much more of a significant achievement when considering the fact that the city boasts the least expensive gasoline in North America (15.4¢ per litre, or 69.9¢ per Imperial gallon -- this equals 49.9 US cents per US gallon) and one of the highest ratios of cars to people (1.3 automobiles for every man, woman



and child) on the continent. Since LRT is not environmentally destructive, it can enhance the North Saskatchewan River Valley and its system of ravines rather than disrupting the contiguity of neighbourhoods.

**BELOW:** In the new white ETS colour scheme, Flyer trolley coach 232 is seen eastbound on 118 Avenue at 80 Street. The date is 24.4.78.

**ABOVE:**

With part of Edmonton's impressive new downtown office towers as a backdrop, Flyer trolley coach 216 is seen at Jasper Ave. and 99 St. Note that, in contrast to 232 below, this coach has had the hump at the rear of the roof removed. At ETS request, Flyer Industries has come up with a conversion kit for this purpose.

(Ted Wickson)



LRT provides most of the advantages of conventional heavy rapid transit at a significantly lower cost (usually less than half) using lightweight electrically powered light rail vehicles (LRVs) which have been developed from traditional urban streetcars. The capacity of LRT service on a double track line is considerably lower than full rapid transit service and, unlike conventional rapid transit, power collection is from overhead wire rather than dangerous ground level third rail. This advantage permits simple level crossings reducing initial capital costs and increasing public safety.

An important consideration, especially in Edmonton, is the negligible effect of weather on LRT. All transfer points and stations are protected from the elements. Stations with boutiques, shops and lounges become centres of pleasant activity and convenience. At ground level or below ground, the reduced engineering demands of LRT permit the saving of millions of dollars, with stations costing half that of heavy rapid transit. People can therefore choose to have twice as many or have them twice as luxurious. Either way, the travelling citizen benefits directly in a way that can be appreciated on a daily basis.

## HISTORY

It was in Edmonton, in the mid-fall of 1908, that North America's northernmost electric railway was born. During the first half of the twentieth century, it would come to occupy a place in the city's development that few modern residents would associate with a transit system. In its seven decades of existence, Edmonton Transit has served the city in a variety of innovative ways: freight delivery, mobile libraries, school buses and an expanding network of routes designed so that today the Edmontonian is usually no more than 1000 metres from a transit stop. Even back in 1908, at a capital cost of \$323,500, the Edmonton Radial Railway was a bargain. Revenues averaged \$2.00 per hour for each of its original seven streetcars. At 25 tickets for a dollar, that meant 42 rides per hour per car. Total yearly revenues were in excess of \$120,000.

Edmonton's original streetcar line was 21 kilometres in length. It started at 95 Street and 118 Avenue, ran south to 106 Ave. where it jogged over and down 97 St. to Jasper Avenue, then west on Jasper to 121 Street. The first

of seven cars was delivered by CPR flatcar to Strathcona on Sunday 25 October and the first regular run took place on Friday 30 October 1908.

Until most streets were paved and motor trucks became common, the street railway gained considerable revenue from hauling freight. Electrified spur tracks into some local industrial yards allowed the cars access for pickup and delivery of materials. Railway box cars were also switched over the streetcar tracks to some industries. The convenience and economy of this new transportation mode became an instant hit with Edmontonians. In fact, the ease with which the city's population doubled to 60,000 between 1908 and 1913 was greatly aided by the radial rail system.

The new system had grown substantially during its first half decade. More miles of track were laid, and by 1913 the Cromdale Maintenance Shop was completed. Now, Edmonton's all-wood streetcars could be serviced locally by a full range of equipment that maintained electric motors, bogies and wheels, air brakes and coachwork.

Edmonton's growth slowed suddenly in 1914, which was the year that saw the start of the Great War. Not until the late 1940s would such a period of expansion again overcome the city. However, while the pace of growth was slow, the city progressed. One year earlier, the Provincial Government had established a Planning Act. One result of this legislation was the development of a grid plan for the city's streets. Street and lot sizes were also stipulated by city ordinance and, in other words, the city, which had suffered the pains of its first rapid expansion, regained control of its growth and established policies of orderly development. The city was planned on paper for miles in each direction from the civic centre. The Edmonton Radial Railway settled into a period of moderate growth marked by substantial improvements to existing services.

In 1917, the system introduced its first one-man streetcars. The existing two-man cars were converted at the Cromdale Shop to one-man cars with front entry. The rear platform was closed in and the space utilised for extra seating. In 1925, a large-scale renovation of equipment was started. Newly refurbished cars appeared wearing a coat of red and cream - a colour scheme Edmonton Transit is now in the process of replacing by a more modernistic off white with broad blue and gold stripes below the doors. This era of quiet evolution of the Edmonton Radial Railway would take perhaps until the early 1950s to end. But residents of 102 Ave. could sense the winds of change by mid-1932, for it was during that year that Edmonton's first bus route came into service.

*LEFT: Canadian Car Brill trolley coach 132 descends the Bellamy Hill heading from downtown towards the South Side on 23 May 1978. The Brills are being returned to service for the Commonwealth Games, but are all scheduled for retirement in late August. (E.A. Wickson)*





By 1939, the conversion of the streetcar system to trolley bus was well underway. The first nine trolley coaches were British built and replaced streetcars on 95 St. from 111 Ave. to Jasper Ave. Progression to a complete trolley bus system would take a further twelve years, for soon after Edmonton's first two trolley routes had been established, war was declared in Europe. The war years saw the highest per-capita usage of Edmonton's transit system in history. In fact, demand was so great that two people were once again required to operate the streetcars; one to

drive and the other to usher riders on and off as quickly as possible.

The years following World War II brought rapid changes to Alberta, Edmonton and, of course, the Edmonton Radial Railway. Not the least of the changes experienced was two name changes in as many years. In 1946 it became the Edmonton Transportation System and in 1947 the Edmonton Transit System (ETS). In 1951 it ceased to be the home of North America's northernmost electric streetcar line, for the conversion to trolley coaches was completed on 1 September of

that year. Rapid expansion of the system to cope with Edmonton's new reputation as the oil capital of Canada resulted in such additions as the completion of the 100-unit Strathcona Service Garage.

The second half of the twentieth century has meant nothing but constant expansion for the ETS. Total ridership doubled between 1968 and 1978, and Edmonton has not only regained its reputation as the northernmost electric railway in North America, but is the first city on this continent to introduce a new breed of urban transit - LRT; Edmonton, a true pioneer.



## BACKGROUND

The year 1961 had become important to Edmonton since it was during this year that the first suggestion of a rapid transit system was presented to the City Council. This recommendation was to be followed by the Bechtel Report in 1963, which recommended a high-capacity transit line as a component of the city's transport system. Investigations into solving the problem of rapid growth in the sixties and seventies uncovered three alternatives: a greatly expanded all-bus system, a massive highway system, or a light rail system. Fortunately, Edmonton decided on the most efficient and economical combination: light rail transit integrated with a high capacity bus service. This new system would benefit the entire city for it would efficiently move northeastern residents plus it would speed Edmontonians to such facilities as the Commonwealth Games, the Clarke Stadium, the Coliseum and the Exhibition Grounds.

In 1974, both Calgary and Edmonton were awarded \$45-million grants by the provincial government for public transit improvements. While Calgary decided to spend a good part of the money on the construction of a new bus garage and maintenance facility, Edmonton used the funds to pay for 70 per cent of the dynamic LRT line. It was an

investment that would offer the city opportunities like never before.

Although the attraction of new riders to the system due to the new LRT line is not an essential factor in making a success of the line, it is bound to be an ancillary result. With a 40 cent exact cash fare and extremely liberal transfer privileges (a transfer is valid for one hour from time of issue as a fare on any ETS vehicle going in any direction from any point within the city), and \$15 monthly passes, the ETS is putting the emphasis on improving service for existing riders rather than on enticing automobile commuters to leave their cars at home. There-

*ABOVE: An outbound LRT train passes a set of CNR switchers (nos. 1346 & 1361) just south of Belvedere Stn. The portal in the background is the tunnel under the CNR mainline. The date is 23 May 1978. (Ted Wickson)*

fore, no significant increase in ridership is expected due to the Northeast LRT line. It is nevertheless predicted that the line will carry 50,000 passengers per day in both directions on regular weekdays.

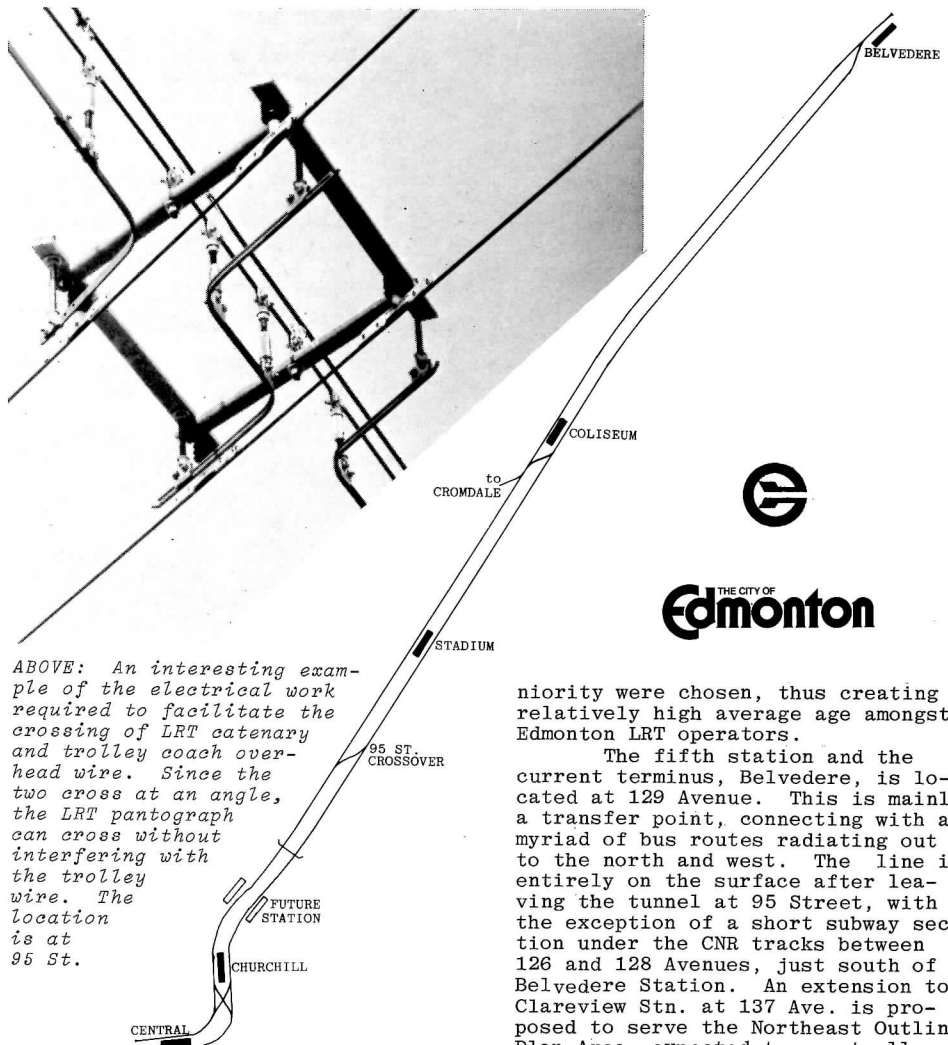
*BELOW: This view, taken on 19 April 1978, attests to the phenomenal response received by the new Edmonton LRT line on the inaugural days of operation. This load factor was the rule rather than the exception.*



## THE LINE

The present line, 7.2 kilometres in length, consists of a 1.6 kilometre underground section and a 5.6 kilometre surface portion, located in the centre of the CN railway right-of-way. In order to comprehend the location of the line, it must be conceived as the first phase of a much larger system intended to serve all areas of the City of Edmonton.

The line commences at Central Station (under Jasper Avenue between 100A and 100 St. - McCauley Plaza), swinging northeast to Churchill Station (at 102 Ave. and 99 St.). The line continues in tunnel, crossing under 97 Street before breaking to the surface in the CNR right-of-way just west of 95 Street. The route then continues in a straight line to the northeast, with the first surface station at 112 Avenue (Stadium). This station serves both the Clarke Stadium (home of the Eskimos football club) and the new Commonwealth Stadium, seating 42,000 people and built for the XIth Commonwealth Games, to be held in Edmonton this August. The second station is at 118 Ave. (Coliseum), connecting with a variety of bus and trolley coach lines as well as serving the Coliseum (home of the Oilers hockey team), seating 17,000, and the Exhibition Grounds at Northlands Park, where the Klondike Days Festival is celebrated every year. Directly southwest of Coliseum Station is the LRT maintenance facility, Cromdale Shops, a converted streetcar barn that has recently been used as a bus maintenance shop. It is accessible by one spur track crossing the CNR track from the southbound LRT line. Due to the awkward connection that requires trains to be reversed at Coliseum Station when entering service inbound from Cromdale, it is not possible to bring rush hour extras into service in this manner. Two trains are therefore stored overnight in the tailtracks at Central Station, emerging for the morning rush hour on the next day. They are again stored at Central during mid-day hours, re-appearing for the afternoon rush hour before entering Cromdale Shops around 6:00 p.m. On the next day, these trains will operate all day, terminating their run at Central Stn. to spend the night there. This accounts for four trains, the fifth and sixth operating in and out of Cromdale



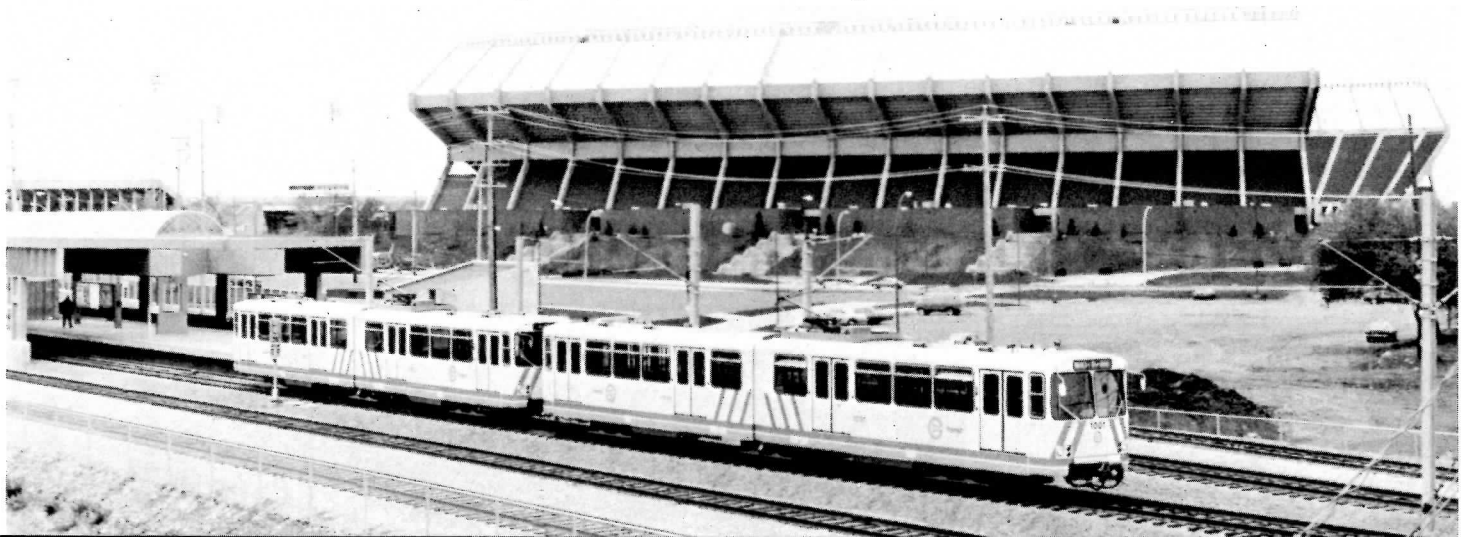
ABOVE: An interesting example of the electrical work required to facilitate the crossing of LRT catenary and trolley coach overhead wire. Since the two cross at an angle, the LRT pantograph can cross without interfering with the trolley wire. The location is at 95 St.

only. With the normal complement of two units per train, twelve cars are in service during peak periods, allowing for two spares. As six trains are required for the five-minute peak headway, a 10-minute, 3-train service is provided as a base outside of rush hours and on Saturdays. On Sundays and evenings, however, the frequency drops to once every 15 minutes, requiring only two trains. In order to operate this service, 21 bus drivers were trained to operate the LRVs. Out of 91 applicants, those with the highest se-

niority were chosen, thus creating a relatively high average age amongst Edmonton LRT operators.

The fifth station and the current terminus, Belvedere, is located at 129 Avenue. This is mainly a transfer point, connecting with a myriad of bus routes radiating out to the north and west. The line is entirely on the surface after leaving the tunnel at 95 Street, with the exception of a short subway section under the CNR tracks between 126 and 128 Avenues, just south of Belvedere Station. An extension to Clareview Stn. at 137 Ave. is proposed to serve the Northeast Outline Plan Area, expected to eventually accommodate in excess of 100,000 people in the extreme northeast corner of the city. This would involve the construction of an additional 2 kilometres of line and one more station for a total line length of 9.2 kilometres.

BELOW: An outbound LRT train, led by U-2 car 1001, passes the brand new Commonwealth Stadium just after leaving Stadium Station. Behind the station at left is Clarke Stadium, home of the Eskimos football club until after the Games in August; at which it is scheduled to move into Commonwealth Stadium.



There are nine grade crossings on the line between Belvedere and the 95 St. portal, each of which is heavily protected with gates, bells and warning flashers. They are controlled so as to provide the LRT service with an uninterrupted operation and, although there have been some minor problems with the restoration of gates to the upright position, LRT service has not been delayed due to the level crossings. The only problems that have affected the LRT service as such are turnaround delays at the termini and difficulties in handling the crush loads that have endorsed the system's success since its first run on Tuesday 18 April (turnaround problems should be eliminated with the installation of a spring switch, completing the crossover south of Churchill Station, and with the construction of a second track and crossover at Belvedere along with platform enlargement there). Although regular service with normal headways and an operational LRT-bus interface did not begin until 5:00 a.m. on Sunday 23 April, simulated service was provided free of charge for the public from 9:00 a.m. until 3:00 p.m. on the Tuesday, Wednesday and Thursday prior to the official opening. A 15-minute headway had been planned for these days, but it was soon realised that even the full rush hour service complement (5-minute headway with two-car trains), which was immediately pressed into service, would have difficulty in handling the phenomenal public response.

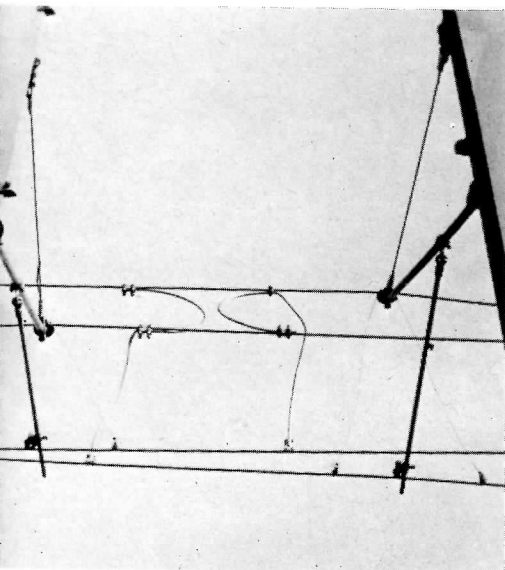
The ceremonial opening for local dignitaries (closed to the public) took place at Central Transit Station on Saturday 22 April with the operation of one round trip for those in attendance. On Sunday, rides once again were free, but Monday's rush hours would prove to be the acid test for Canada's first LRT service. In spite of several delays during the morning rush hour caused by door malfunctions and turnaround problems, the LRT line passed with flying colours. Ridership was very encouraging and the future looks favourable for an expansion of the system.



*The downtown tunnel section looking inbound from Churchill Station. The walls consist of the bare underpinning columns. Note ties and ballast.*



*A view of the portal at 95 Street. The tracks at this point are bolted to a raised concrete guideway. The tunnels are patrolled by dogs at night.*

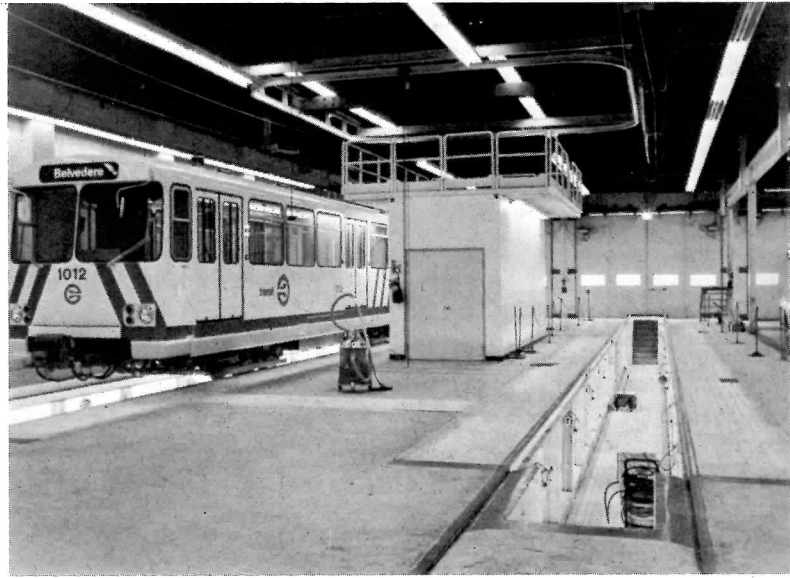
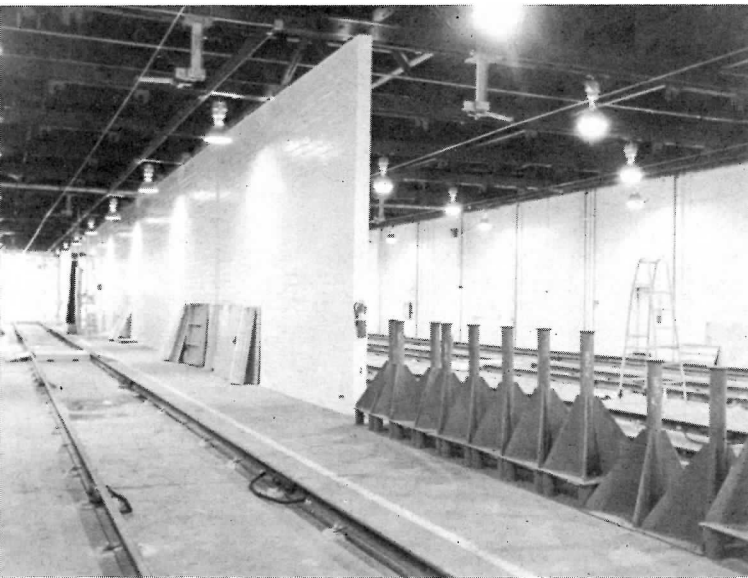


*A view of catenary insulators.*



*An overall view of the Cromdale Shops looking north from the tail track.*

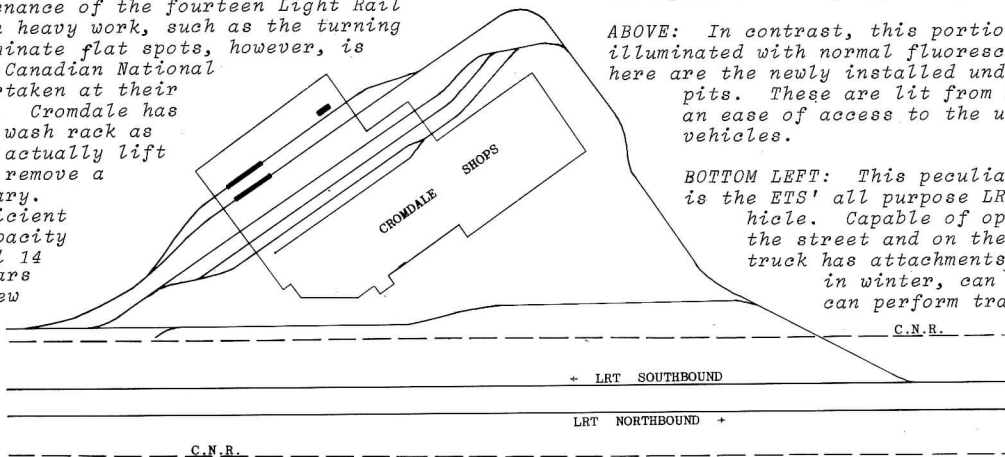




## CROMDALE SHOPS

Cromdale Shops, located just a few blocks southwest of Coliseum Station on the LRT line, is a rebuilt maintenance facility that originally served as a barn and shop for Edmonton's first streetcars. It was built in 1913. Cromdale presently serves as a shop for all routine maintenance of the fourteen Light Rail Vehicles. Certain heavy work, such as the turning of wheels, to eliminate flat spots, however, is contracted out to Canadian National Railways and undertaken at their shops in Edmonton. Cromdale has pit facilities, a wash rack as well as hoists to actually lift a car in order to remove a bogie when necessary. There exists sufficient indoor storage capacity to accommodate all 14 vehicles. More cars would require a new and larger shop facility.

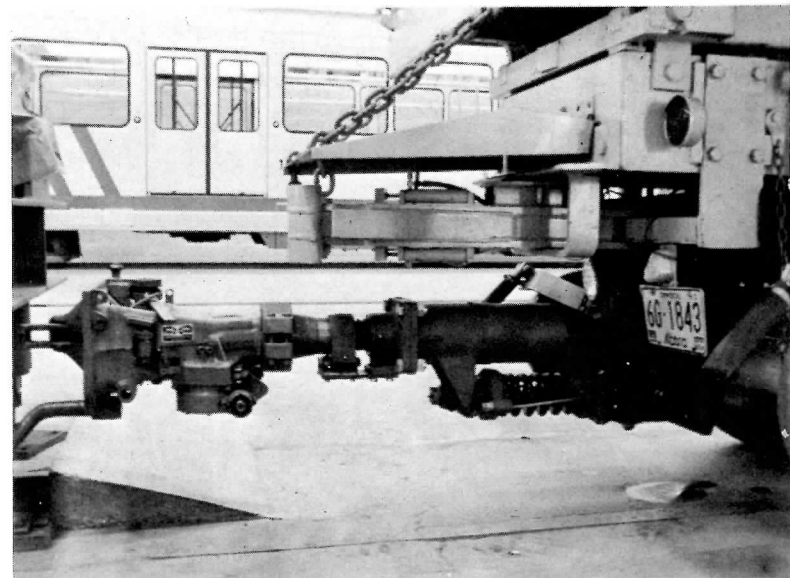
**BOTTOM RIGHT:** This is the coupling attachment that permits the vehicle to tow a disabled LRV.



**TOP LEFT:** The interior of Cromdale has been entirely renovated for the maintenance of the new Light Rail Vehicles. At right is the wash rack and at left are three storage tracks. The spot lighting provided from the ceiling is of the sodium vapour variety (orange), adversely affecting all natural colours.

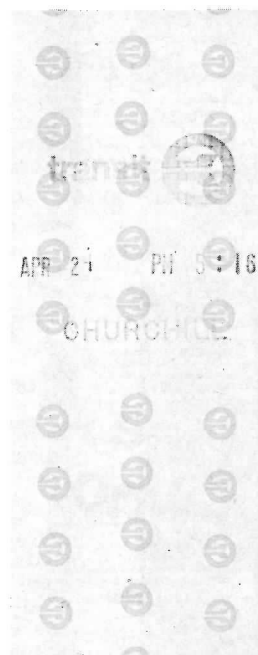
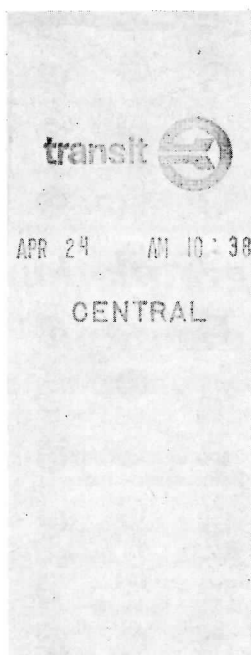
**ABOVE:** In contrast, this portion of the shop is illuminated with normal fluorescent tubes. Seen here are the newly installed underfloor inspection pits. These are lit from below, providing an ease of access to the underside of the vehicles.

**BOTTOM LEFT:** This peculiar looking vehicle is the ETS' all purpose LRT maintenance vehicle. Capable of operating both on the street and on the LRT tracks, the truck has attachments for snow plowing in winter, can tow disabled LRVs, can perform track and catenary maintenance on the surface as well as in the tunnels. It was built by the Canron Rail Group.





ABOVE: Edmonton Transit personnel oversee LRT operations from the panel in the Transit Control Centre, located on the mezzanine level of Churchill Station. In function, this centre resembles that of the TTC.



TOP LEFT: In the Transit Control Centre all stations can be monitored simultaneously by way of these television screens.

## CONSTRUCTION

The first sod for the construction of the LRT line was turned in September of 1974 and the entire project progressed on target and on budget until completion, a feat not often accomplished in North American rapid transit construction. The construction methods of Central and Churchill Stations, the two underground stops, were designed to cause a minimum of interference and disruption. A point of considerable achievement was the fact that traffic on Jasper Avenue, Edmonton's main downtown street, was restored four months after work commenced.

When Jasper Avenue was torn up in 1975, businessmen saw trade ebbing away in a sea of mud. Traffic was detoured around the area, chain link fences were erected along the sidewalks and Jasper Ave. looked like one great trench. Instead of sitting around and griping about the mess, some of them banded together to salvage what they could by organising special promotions and urging shoppers to come on down and take in the most fascinating sidewalk superintendent's project in years. It was a smashing success and presently LRT has been endorsed by all downtown merchants as doing nothing but good for the downtown area and Jasper Avenue.

ABOVE: Buses equipped with two-way radios are controlled from this part of the Centre.

LEFT: Jasper Avenue as it looked during the subway construction in May of 1975. The forms in place are for the pouring of concrete for the Central Station. (courtesy Edmonton Transit System)



# EATON'S

"On Track, April 23 to  
The Heart of a City"



NORTHEAST

## Take a Look at LRT ... Ride Free

Tuesday, Wednesday, Thursday  
9 A.M. to 3 P.M.

Edmonton Transit, in co-operation with downtown business firms, is offering free rides on the Northeast LRT Tuesday, Wednesday and Thursday. Enjoy a complimentary ride and shop the special values offered by downtown merchants.

LRT — ON TRACK!

SIEMENS ELECTRIC LIMITED  
General Contractor  
for the Light Rail Vehicles  
and Signal System

RAIL

### TRY OUR SPECIAL L.R.T. S

Cafeteria Specials	Deli Specials
Marinated Buffalo Stew	2.50   3.00 for one
Garlic Ribs	1.50   3.00 Deli
Arctic Char	1.95   3.00
• Fine Food • Fair Prices • Fast Service	

LINE

**Experience L.R.T. to 3 p.m.**  
**Free Rides 9 a.m. to 3 p.m.**  
**Tues. April 18, Wed. April 19, Thurs. April 20**  
Edmonton's newest Northeast Light Rail Transit will open officially April 23rd, but this week you can hop aboard at the downtown Central Transit Station (101st Street and Jasper Avenue) for a FREE, non-stop, 25 minute long ride to Belvedere and back. It's 4½ miles each way! Be one of the first to take a trip on your own L.R.T.

We've done it again Edmonton. Canada's finest Light Rail Transit Line is set to open. It's your system and to give you the opportunity to view it April 18, 19, and 20 rides downtown are free. From 9:00 a.m. to 3:00 p.m. Take time to take a look at Light Rail Transit, then take a look at Eaton's. Now that's something to smile about.

TRANSIT  
Another step forward  
for Edmonton

**ON TRACK, APRIL 23, 1978**



**EDMONTON ESKIMOS**

**WE'RE  
ON TRACK ...**

**FOR ALL TEN  
HOME GAMES IN  
CLARKE AND  
COMMONWEALTH  
STADIUMS.**

**Renew Your Season Tickets Today and  
Ride Rapid Transit to the Games!**

## Congratulations Edmonton

on the opening of the Northeast  
Light Rail Transit Line

With over 30 branches in Edmonton and  
District to serve you



The First Canadian Bank  
Bank of Montreal

Since the method of construction differs somewhat from the traditional cut-and-cover construction, it is worthwhile describing in detail the methods employed.

In preparation for the construction of the two downtown stations, the sewer and water utilities were placed under the sidewalk in two separate tunnels. In the construction of Central Station, which is 18.6 metres wide, 21.3 metres long and 15.2 metres deep, holes for tangent piles of 1.1 metre diameter were bored down through the soil. Reinforcement cages were then inserted and concrete poured. Every fifth pile came to the surface, while the four intermediate piles were stopped at the mezzanine floor. A longitudinal excavation was then made along the lines of piles and formwork placed for a reinforced grade beam. This beam was poured in place, the dimensions of which were 1.55 metres wide and 2.1 metres deep. Interlocking steel sheet piling was then driven on the property side of the grade beam down to the mezzanine floor level. Future access can therefore easily be provided to the basements of adjacent buildings by cutting through this sheet piling. (The adjacent properties are responsible for any costs connecting in with the station.) The street surface was excavated after the sheet piling was in place. Excavation was made as deep as time permitted, but in any event not deeper than the mezzanine floor level.



Precast prestressed standard highway bridge girders were then placed, each of which weighed 40,000 kg and was 1.5 metres wide and 1.8 metres deep, spanning the 18.6 metre distance between the two grade beams into which these girders were keyed. After the beams were grouted together, a water-proofing membrane was applied. This was overlaid with 5 cm styro-foam insulation to minimise frost penetration. A lightweight aggregate concrete surface was then poured to the prescribed contour of the street surface.

After the pavement had been restored, the remainder of the soil was taken out via a ramp which was constructed into a side street. Excavation was first completed to the mezzanine floor level and strut beams were poured on the excavated ground surface using sand as a trim. The mezzanine floor was then poured over these beams. The excavation was then completed below the mezzanine level down to the track level. During this process, the integrity of the adjacent building foundations was protected by means of a temporary moveable steel strut system to prevent the bottom of the tangent piles from kicking in. When completed, the track slab provided this basic function.

The two downtown stations are connected by twin tunnels, mined by means of a mechanical mole manufactured by Lovatt of Toronto. The contractor for this portion was the city's own sewer department, which has extensive experience in the tunnelling of trunk sewers under Edmonton conditions. The twin tunnels, which are 230 metres and 220 metres long, curve between the two stations and go underneath several existing structures. One building, the Edmonton Plaza Hotel, was approved for construction when the LRT project was still in its early planning stages, and its foundation piles could therefore be located such that the two tunnels could be mined without any interference. Two other older buildings required underpinning while a fourth, a two-storey concrete-block structure, was underpassed without underpinning, for the degree of soil removal control was such that no wall cracking or other damage to the building occurred. It should be noted that the city of Edmonton is blessed with excellent soil conditions and the geology is perfect for tunnelling or cut-and-cover operations. There are no water problems since the ground water is well below the subway grade.

The LRT trackage has been designed with a well-graded and drained sub-grade of crushed rock ballast. Number One treated ties and 50 kg/metre rail, a high standard in order to reduce maintenance costs, was used. At the underground station platforms and in short sections of the tunnel, a rubber mat has been placed below the ballast to reduce the noise levels. The ties in the tunnels have also been treated with phenol chloride to avoid odours of the normal creosote-treated ties. The use of ballast in the tunnels, an unusual practice, should reduce vibration and noise.



*Construction of the short tunnel underpassing the CNR right-of-way just south of Belvedere Station on 29 November 1977. (Edmonton Transit System)*



*A view of the construction method used to build the roof/ceiling of the short tunnel south of Belvedere, 26 April 1977. (Edmonton Transit System)*



*A view of the construction of the fare collection area of Coliseum Station.*

The surface portion of the line is 5.6 kilometres in length and uses the existing CNR right-of-way. There existed sufficient room between the CN tracks to accommodate a set of LRT tracks. The construction method used for the above-ground stations was the concrete cast-in-place procedure, consisting of the construction of wooden forms to reflect the architect's design and then pouring concrete. A reinforced structural steel canopy covers the platform areas and partial walls have also been built around the platforms to provide additional protection.

The strategy selected for contracting was one where the work was tendered in relatively small portions (approximately \$1.5-million to \$4-million each). Designs were prepared using proven techniques and methods known to local contractors. Designs of subsequent portions of the project have taken advantage of the experience with previous contracts. Alternate designs had been prepared for many of the sections and contractors have been encouraged to bid on their own alternatives as well. This approach has enabled a larger number of local contractors

to undertake these jobs. At the same time, these smaller portions could be let at a fixed price since a contractor could see substantial completion of his work within a year's time. Prompt payment on progress payments has enabled contractors to keep interest costs low and by removing many of the uncertainties with respect to inflation and quick return of construction expenditures, prices could be kept relatively low. In fact, the fixed prices then played a major role in maintaining a fast pace of construction -- inflation created the bonus or penalty to the contractor.



ABOVE: Finishing touches are added to the fare booth at Central Stn.

## THE STATIONS

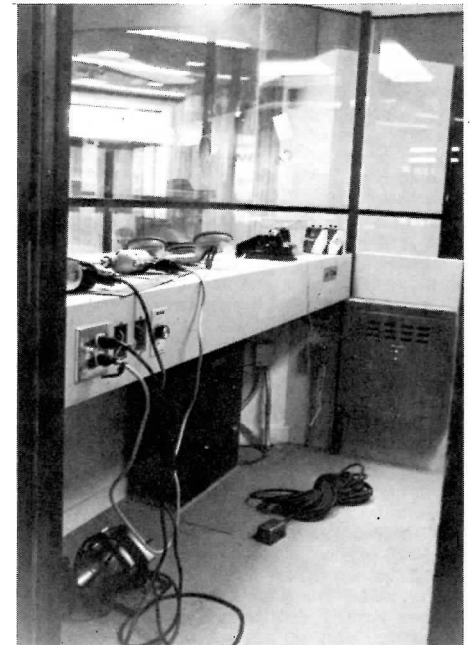
The two underground stations, Central and Churchill, are of the conventional subway type with a mezzanine floor for the full length of the station, track and platform level. All stations have a centre platform, and a superb feeling of spaciousness has been created by eliminating any unnecessary pillars and other environmental clutter. Large open areas have been incorporated in all stations, providing a pleasing functional environment. As well as creating a feeling of roominess, these open areas are designed to accommodate transit patrons under peak conditions. Additional space was allotted for queuing outside the fare collection area, where exact change is required. Transit patrons are directed to their desired destinations by a comprehensive signage system.

For the safety of passengers and for the prevention of vandalism, closed circuit television cameras have been positioned throughout the LRT stations, scanning various levels. A further security precaution was the elimination of elements that would obstruct visual supervision. All column wall finishes at both the platform and concourse levels were brought forward to eliminate any "blind" spots. In addition, two

security guards are assigned to patrol each station at all times, also riding the trains from time to time, as required. At night, when the system is closed, guards with dogs patrol the stations and tunnels.

Through the use of colourful ceramic tile flooring and other "earthy" colours, the underground stations reflect a warm atmosphere. Direct and indirect mercury vapour

BELOW: Two trains meet at Churchill Station on 20 April 1978. Note the complete absence of any pillars or view obstructing objects on platform level.



lighting along with recessed fluorescent lights provide the stations with a "light and airy" environment. Central Station is located at Jasper Avenue and 101 St., the core of the downtown area, and Churchill Station

ABOVE: The interior of the fare collection booth at Churchill Stn. is still under construction on 20 April 1978.





LEFT:

*This entrance to Churchill Station is a typical example of the tasteful station design used for the ETS system. (Ted Wickson)*

RIGHT:

*Very simply but tastefully designed is the mezzanine level of the underground stations. Two fareboxes are located on each side of the collection booth. No change is made at these booths.*



BELOW: Very attractive graphic signage adorns one of the exits to Churchill Station. Note the backlit advertising on the walls and the clutter-free platform.



BELOW: Backlit station identification signs, polished chrome guardrails and a coarse yet smooth wall design make for a very attractive atmosphere in the stations.

at 102 Ave. And 99 St., close to the Central Library, Art Gallery, the new Citadel Theatre and Churchill Square.

The Stadium Station, the first on the surface, is located within walking distance of the new Commonwealth Stadium. Patrons enter the station below track level, reaching the platform level by means of several stairways and escalators. Coliseum Station was designed to make use of the existing 118 Ave. overpass, which is located on the west side of the Coliseum. From the platform area, LRT patrons select a stairway that takes them to either side of 118 Ave. (Coliseum or Exhibition Grounds) to attend events or make transfer connections to east or westbound buses and trolley coaches.

Belvedere Station, at 129 Avenue, is the last station on the line and is extremely basic in design. Only one track exists in the station, a short distance west of a bustling, windy and dusty open-air bus terminal. Belvedere is the only station that offers commuter parking, with a lot that can accommodate up to 250 cars. All stations were designed by Edmonton architect John A. McDonald and have elevators connecting street level to mezzanine level in order to accommodate wheelchair passengers.

## EDMONTON LIGHT RAIL TRANSIT

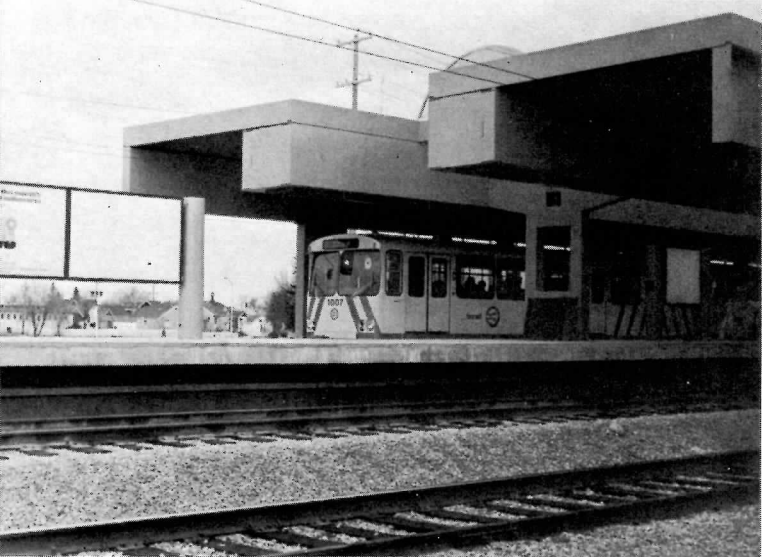
BOTTOM LEFT: Edmonton Transit System LRV no. 1007 makes up the tail end of an outbound train taking on passengers at Central Station on 19 April 1978. The crowds seen here are typical of the turnout during the LRT preview when rides were free of charge.







*An ETS hostess welcomes preview passengers to the new LRT line on the mezzanine level of Central Station.*



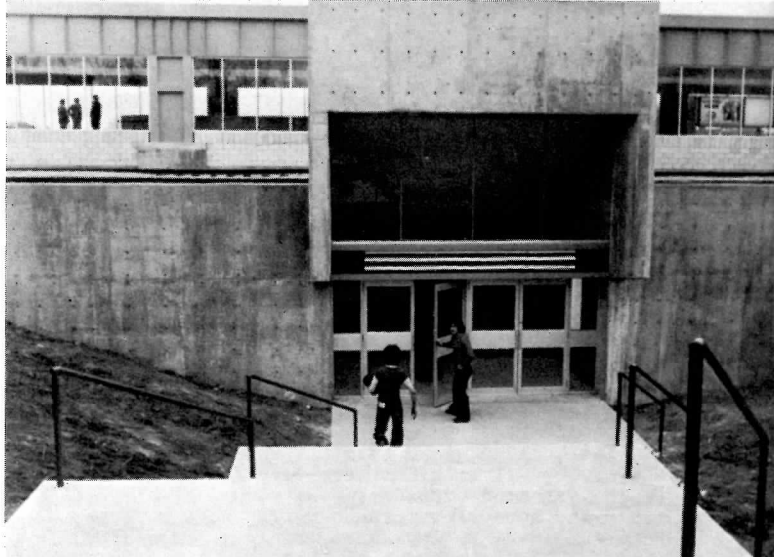
*The outside of Stadium Station is seen along with LRV number 1007 on 20 April 1978. Note backlit advertising.*



*This is the underground passageway connecting the platform with the various entrances at Coliseum Station.*



*Stadium Station, mainly of a concrete and steel construction, is seen from platform level. (Ted Wickson)*



*One of the street entrances to Stadium Stations, seen here, is separated from the actual platform by CNR tracks.*



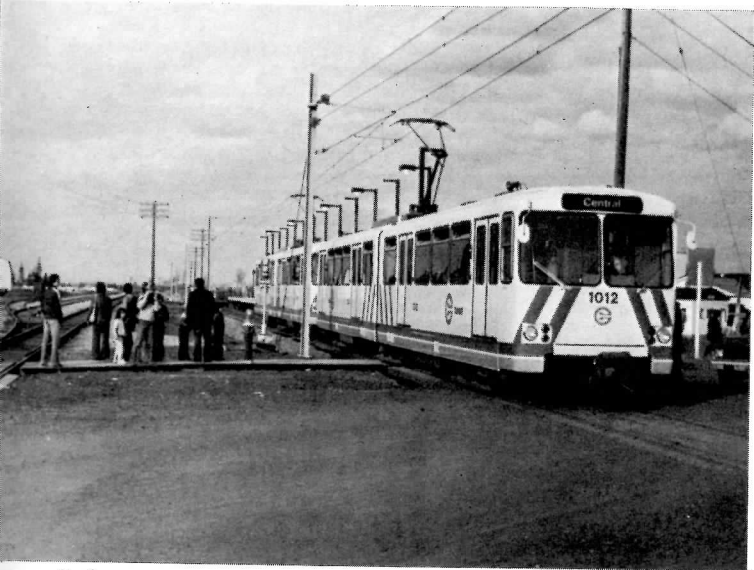
*Light Rail Vehicle #1010 departs Stadium Station outbound as passengers await an inbound train on 20-4-78.*



The entire covered platform area of Coliseum Station along with an LRT train and the western street entrance is seen from the new bus loop, west of the station.



ETS trolley coach 230 passes Coliseum Station westbound on 118 Avenue. A transfer connection with direct platform access is provided below the underpass at right.



Under an overcast sky, LRV 1012 departs Belvedere Station on the afternoon of 23 April 1978 for downtown.



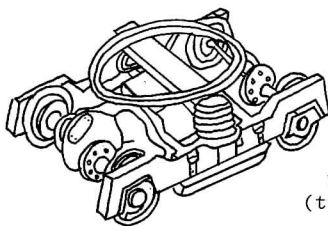
Four ETS diesel buses lay over at the makeshift bus loop at Belvedere Station on Sunday afternoon 23 April 1978. Eight platforms for buses as well as a parking lot are provided here.

## THE VEHICLE

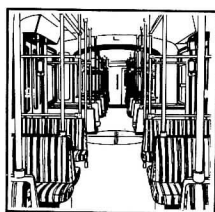
The Light Rail Vehicle (LRV) has evolved from the tramcars of European cities to an entirely new class of vehicle, fitting in somewhere in between the bus and the railway train. Gone is the slow, rumbling streetcar of yesterday, and in its place the sleek and aesthetic LRV with high performance capabilities. Remaining is the reliability and efficiency that could only have been developed through evolutionary technology over a period of over 90 years. No expensive, unproven technology is involved; just the latest advances of one of man's earliest and most efficient transportation systems - the light electric railway.

These vehicles have a high power to weight ratio, geared to provide rapid rates of acceleration (4 to 7 km/h/s) rather than very high speeds. Similarly, they have high braking rates and are capable of climbing steep grades and of negotiating small radius curves.

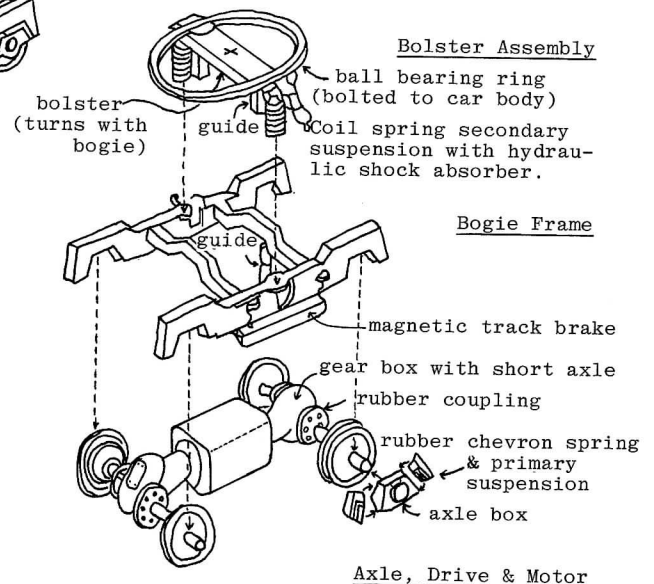
The Edmonton LRV is a modified version of the standard off-the-shelf U-2 class car, built by Waggonfabrik Uerdingen (Düwag) in Düsseldorf, Germany. Although the car is German built, 35 per cent of

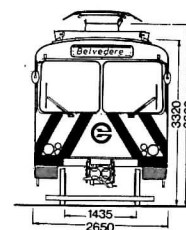
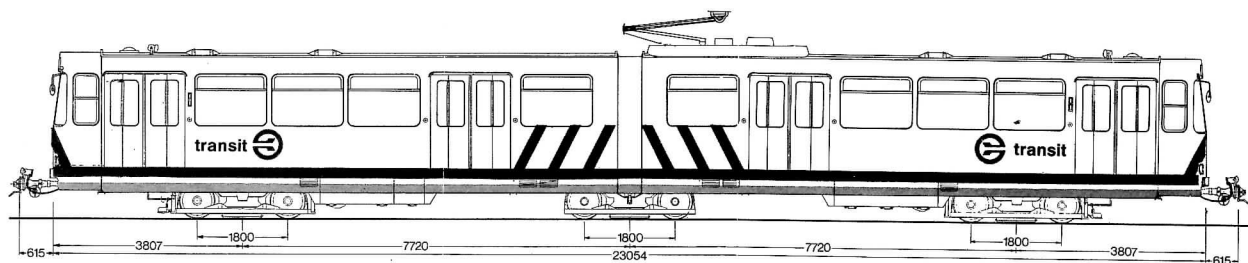


DÜWAG BOGIE



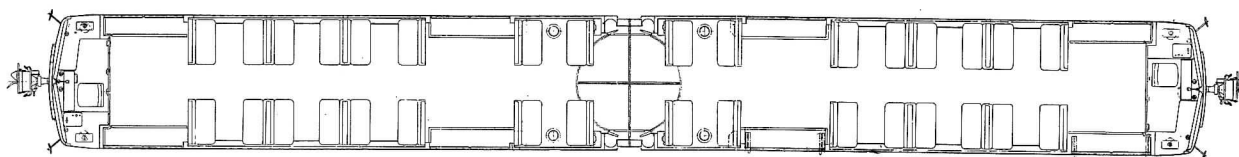
## DÜWAG BOGIE & DRIVE SYSTEM - EXPLODED VIEW





measurements in mm.

ETS  
LRT



the car's components were manufactured in Edmonton. The car body is a lightweight welded steel design and the whole articulated portion of the car is covered by reinforced plastic parts, which are harmoniously adjusted to the interior lining of the car and provide maximum protection for passengers. The articulated platform, composed of four removable floor panels, permits safe passage from one section of the car to the other. Good noise insulation has been provided by noise absorbing layers on the inside of the side walls and by glass wool layers within the ceiling. The floor is made of 16 mm Delignit plywood, and is covered with a solid, attractive and dirt-hiding carpet. Further noise reductions have been achieved by insulating motor bogies with rubber buffers. By North American standards, the Edmonton LRVs are phenomenally quiet and smooth-riding. A very attractive fabric upholstery adorns the seats in a striped beige/brown colour. Seats on either side of the articulated section are solid orange, providing just the right amount of variety. The seats are arranged compartment-wise, facing each other. At the aisle side, they are suspended from the car ceiling by vertical stanchions.

Fully enclosed drivers' cabs at both ends of the car allow for easy operation of the control equipment, good visibility, ventilation, a comfortable seat and pleasing colours. Cabs are accessible from the passenger compartment by way of a door, which causes unfortunate turnaround problems in crush load conditions, since the operator is required to pry his way through a crowded vestibule before the train can depart. A future order may therefore include drivers' doors providing direct access from the platform to the cab.

Heating is provided by forcing outside air through the electric resistance coils and then into the passenger compartment. The temperature is controlled by built-in thermostats and during the summer the equipment is used for ventilation, the air in the car being exchanged about once every two minutes. For additional ventilation in summer, the upper portion of the windows can be opened. The car's doors are individually operated by a passenger push-button, after having been released by the operator. Safety of these unattended doors is guaranteed

by photo-electric cells and sensitive edges. This enables an entire train of up to five articulated units to be operated by only one man, thus saving considerably on high labour costs.

Electronic controls prevent wheel spinning or sliding and solenoid-operated, heated sanders are provided on both sides of each motor and bogie in order to improve adhesion under adverse conditions. Edmonton's initial fleet of fourteen LRVs have the capacity to comfortably carry 5000 to 6000 people per hour in each direction during peak periods. These vehicles, with a top speed of 80 km/h, travel the 7.2 kilometre Northeast line in about 12

minutes. This is about half the time required for a bus to travel the same distance.

The Düwag articulation design consists basically of a short portal section that is fixed relative to the non-motored two-axle bogie on which it rides. The two body sections are supported upon two ball bearing rings (1 and 1.5 metres in diameter). A rubber bellow joins the portal section to the body sections to exclude the elements and noise. Provision is made for ver-

DÜWAG  
SIEMENS

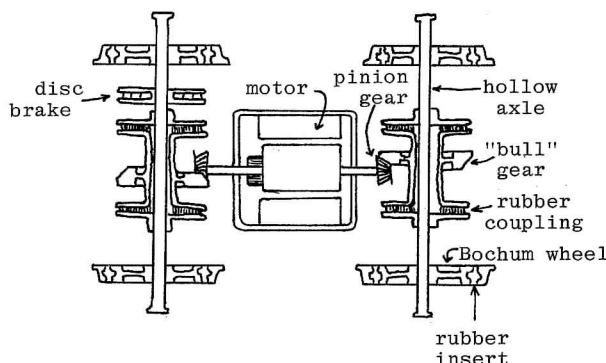
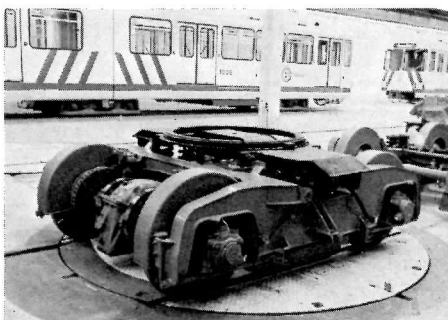


DIAGRAM OF DÜWAG AXLE DRIVE  
(not to scale)

*A spare motorised bogie is seen on a small turntable inside Cromdale Shops on Monday 24 April 1978.*



*Doors are activated by pressing the button at the bottom of the panel.*

TECHNICAL DATA - EDMONTON U-2 CAR  
E.T.S. nos. 1001-1014

No. of axles	6
Overall length	23 metres
Overall height	3.66 metres
Overall width	2.65 metres
Floor height	973 millimetres
Driving wheel diameter	690 mm
Car weight	30,500 kg (empty)
	45,600 kg (incl. 226 passengers)
Motors	150 kw
Traction supply	600 volts d.c.
Gear ratio	5.625:1
Maximum speed	80 km/h
Acceleration	4.8 km/h/s
Service braking	6.2 km/h/s
Seats	64
Standees	162
Total capacity	226 (280 crush)



tical articulation to accommodate vertical curves. The floor of the intermediate section is a circular disc (divided into four quarter-circle removable sections) about which the body sections rotate. The Düwag monomotor bogie allows both axles to be powered by a single motor, suspended between the axles and partially sprung by flexible couplings.

The present fleet of fourteen articulated units is designed to operate the initial schedule. The ETS has an option to purchase more cars on the present 28-car order for Düwag U-2 cars placed by Calgary, for an escalated price of \$620,000 each (compared to \$550,000 for each of the 14 original cars). It seems almost certain, therefore, that an expansion of Edmonton's LRV fleet is not far removed in the future.

*The extremely tastefully appointed interior of the Edmonton LRVs have an orange all-weather carpet on the floor and walls below the windows. Seats are striped in orange, beige and brown. The inside of the folding doors is bright orange with the rest of the interior in a pleasant off white. Railings and stanchions are coated in a grey plastic. The seats on either side of the articulated section are a solid orange. The upper part of the windows may be opened.*



ABOVE: Completely carpeted below the window line, the light rail vehicles sport a very attractive interior design with a combination of orange and beige colours.



LRV 1008 poses inside Cromdale Shops. Dark stripes below the doors along the sides and diagonally across the front are a luminescent blue; below is a gold stripe, also running the entire length of the car.



The operator's dashboard is quite straight forward, all instructions being in sign language. At the extreme left is the master controller combination brake and accelerator.

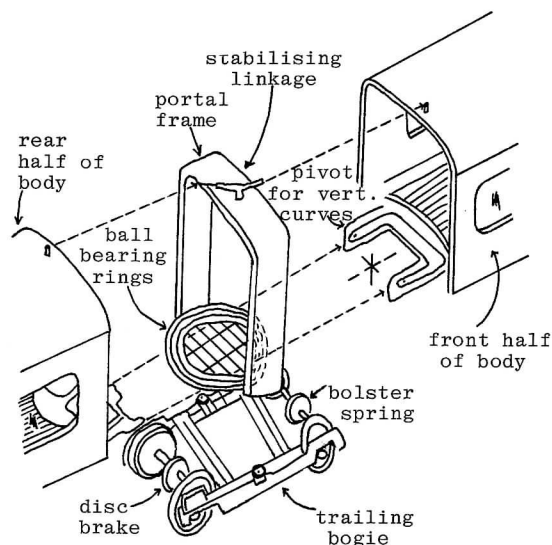


#### PARAMETERS OF RECENT LRVs

	Edmonton U-2 Duwag Artic.	Rheinhaardt Duwag Artic.	Cologne Duwag Artic.	Munich Artic.	Tatra T-3 PCC Type	Goteborg M-28	Frankfurt Duwag Art.
Number of axles	6	12	6 & 4	4	4	4	8
Max. speed (km/h)	80	80	65	80	80	70+	80
Acceleration (km/h/s)	ca. 4.8	4.2	4.2	5.0	6.4	5.6	--
Motors (no. x kw)	2x150	2x150	2x150	4x80	4x44	4x44	2x120
Body length (metres)	23	38.7	21 & 14	16.6	14	14.2	27.4
Body width (metres)	2.65	2.21	2.51	2.34	2.46	2.64	2.36
Weight empty (tonnes)	30.5	38.6	25.2 & 12.3	24.1	17	18.5	38.6
Passenger seats	64	118	129 & 35	44	24	36	62
Total capacity	226	320	213 & 145	158	120	124	278



Both the walls and the ceiling area inside the articulated section are carpeted in the same orange/beige/brown combination as are the majority of the seats.

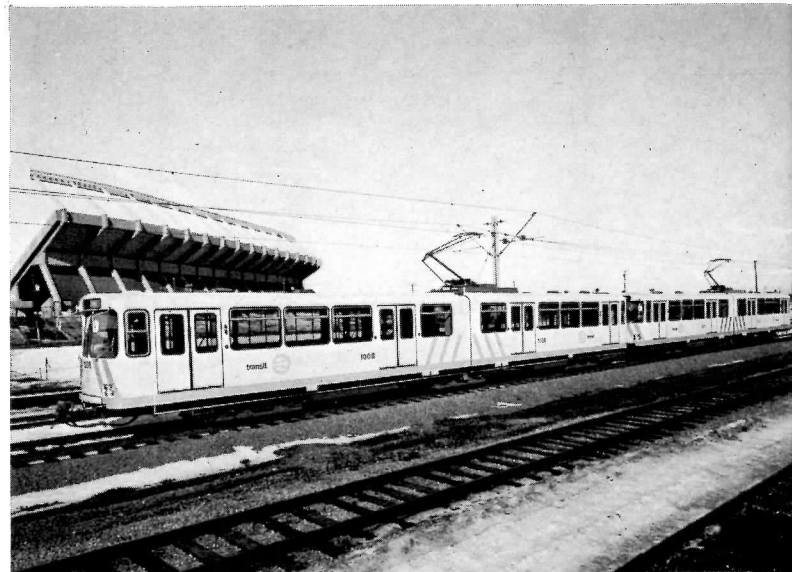


DÜWAG ARTICULATION - EXPLODED VIEW

(not to scale)

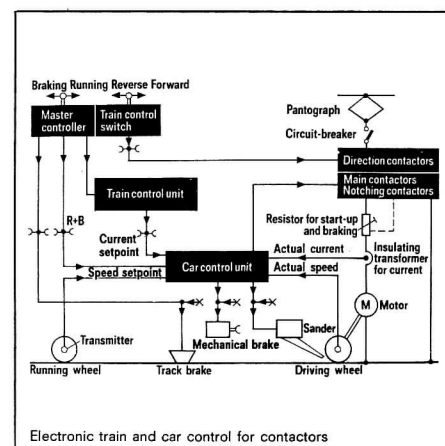


ETS light rail vehicle 1003 lays over at Belvedere Station on Sunday 23 April 1978. Note that the station has only the one track and narrow platform. When the extension to Claremont is complete, Belvedere will be expanded to accommodate two-way traffic.



Posing on the outbound track in front of the brand new Commonwealth Stadium is ETS LRV 1008. The two tracks in the foreground are part of the Canadian National Railways right-of-way, in the centre of which the LRT line was constructed.

Toronto SIG UTC	Freiburg Duwag art.	Basel artic. Schindler	Helsinki Duwag art.	Budapest Ganz art.	
4	8	6	6	8	No. of axles
80	--	65	65	65	Max. speed
5.3	--	--	--	--	Acceleration
2x150	4x95	2x150	--	4x66	Motors (no.
15.3	33	19.4	20	30	Body length
2.54	--	2.21	2.31	2.31	Body width
26.3	--	27	29.6	38.6	Weight empty
47	89	46	--	32	Seats
137	294	150	--	272	Total capacity





As successful as it was, the Edmonton LRT opening did not proceed without protest. A small group of disgruntled citizens appeared at Central Station.

## FUTURE EXPANSION

The Edmonton City Council has already approved \$150,000 for a study on the next leg of LRT in Edmonton; a westerly extension of the subway under Jasper Avenue to 109 Street and then south to Government Centre, before crossing the High Level Bridge to the South Side. At 89 Avenue, a stub would swing west to serve the University. At this point, the CPR line would run between the two LRT tracks. The north-bound LRT mainline track would then continue up the embankment at a steep grade and then turn sharply onto 88 Avenue. The line then would run in the centre of 88 Ave. street-car fashion (along with local automobile traffic) to 112 St., where it jogs over to 89 Ave., terminating in a bus loading area at 114 Street. Even further in the future, this line could be converted into a bona fide subway and extended further southwest.

The main line, however, turns east and south from the High Level Bridge and follows the CPR right-of-way south as far as 30 Ave. with stations at Whyte Ave. (82 Ave.), 76 Ave., 63 Ave. (Argyll), 51 Ave. (Allendale) and 40 Ave. (Papashchase). At 30 Avenue, the line swings east to the recent Millwoods residential development, following a reservation already set aside for it in the Millwoods subdivision. Stations would occur at 99 St. (South Industrial), Millwoods Road and Millwoods Centre, east of 75 Street.

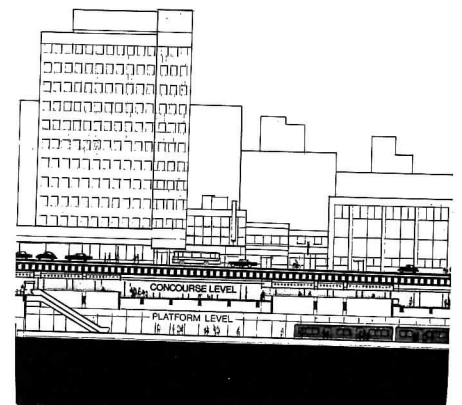
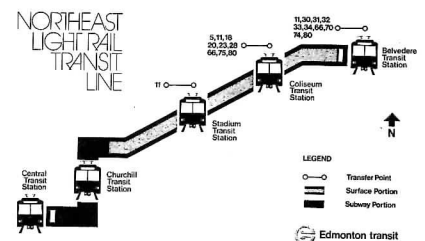
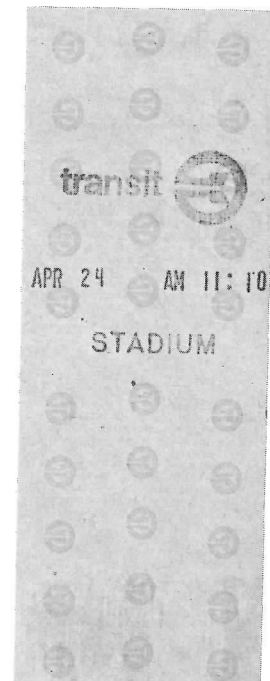
The Riverbend Line (not included as part of the second phase) would branch to the west at 45 Ave. by climbing onto a viaduct to cross the Calgary Trail, following the centre strip of 45 Ave. with stations at 111 Street (Southgate) and 122 St. (Michener Park). The line would fall somewhat into the Whitemud Ravine, but crosses the creek on a high bridge. Another station occurs at 142 Street (Riverbend North) before the line bends to the south in the median of the Whitemud Freeway. A simple surface station (at least initially) would serve as the terminus at Riverbend Centre (approximately 30 Avenue).

Two more lines, in the north-west, form the third and fourth phases of the proposed system. The Jasper Place Line breaks away from the present tunnel north of Churchill Station, heading west with a stop at the CN railway station, continuing west in the CN right-of-way with stations at 109 St. and 116 St. (Oliver). At 120 Street the line dips into a tunnel and leaves the railway right-of-way, angling to the northwest with a subway station at 124 Street. The line comes to the surface again at approximately 126 St. and runs due west along the southern side of 107 Avenue. A surface station occurs at 135 St. (Glenora). A viaduct takes the line across the 142 St. traffic circle, containing an aerial station (McQueen). The line continues west in the centre of 107 Ave. to 149 St., where the Canora Station would be situated. At 156 Street, the line turns south on the west side of the street, terminating at the Jasper Place bus centre (101 Avenue).

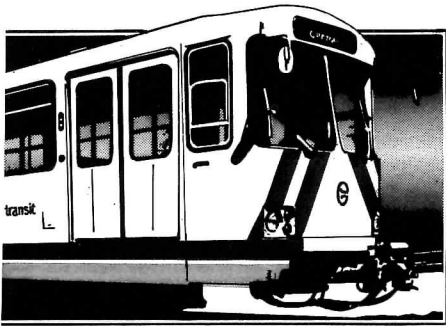
The remaining northern branch, the Northgate line, is envisaged as part of a redeveloped arterial roadway project along the east side of the Municipal Airport, and to replace the inadequate 97 Street for northern access. Such a project would run through rather thinly utilised industrial tracts, minimising disruption, and would yet serve many of the institutions along this heavy northern corridor. The LRT line would be built in the median strip of this arterial road, with stations at 107 Ave. (Armoury), 111 Avenue (Royal Alex.), at the Northern Alberta Institute of Technology (NAIT) and at 122 Avenue. At 124 Ave. the LRT line would cross the Beechmount Cemetery and the CNR Calder Yards on a viaduct, returning to ground level in an abandoned railway spur. Stations would be located at 129 Avenue (Calder) and 134 Ave., the latter serving as the terminus at Northgate Shopping Centre. At this point several options exist for further northward extensions.

At present, no financing is available for any future expansion,

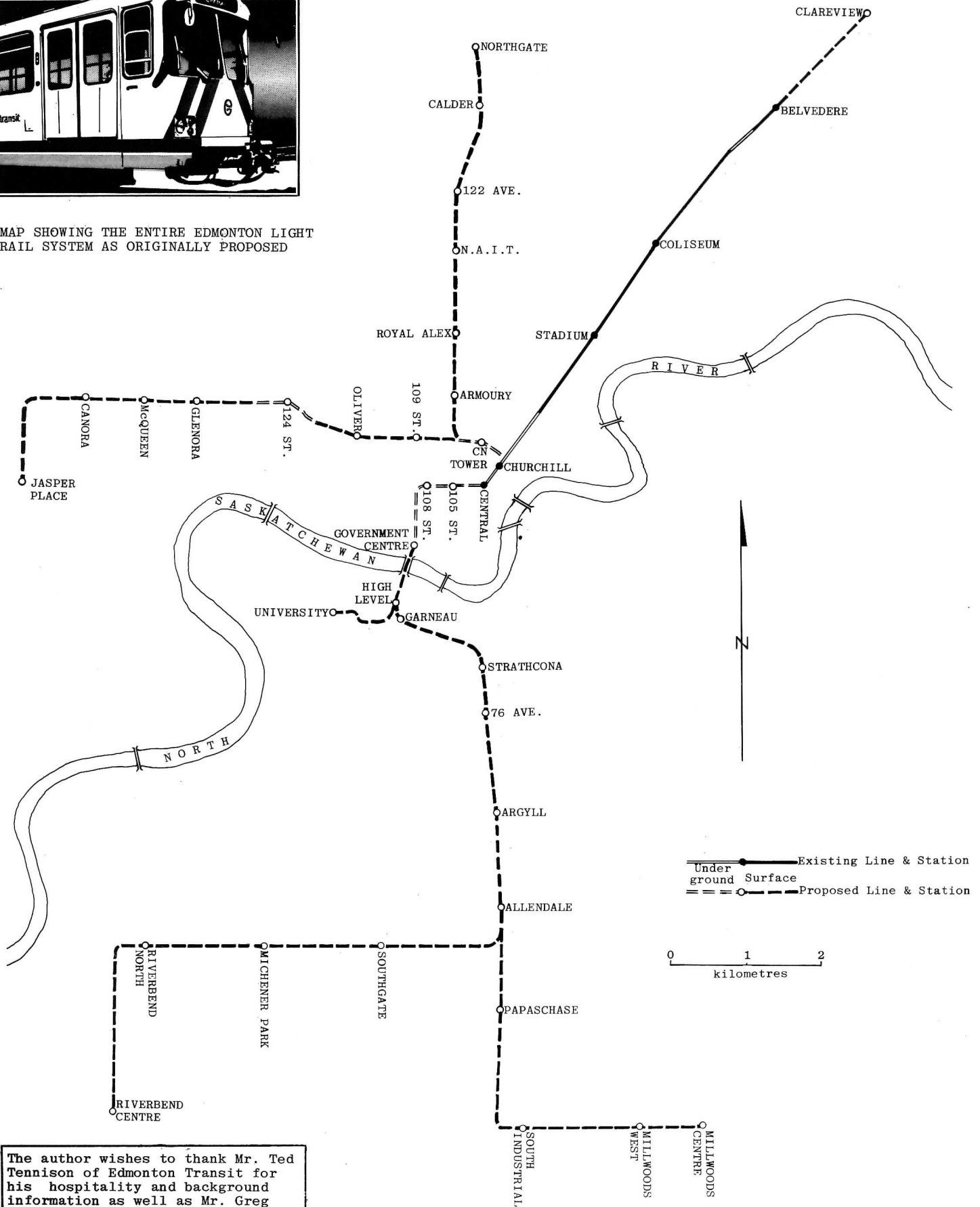
due in part to the Alberta government's refusal to commit any funds to LRT before the operation and viability of the present line has been examined. This is quite a reasonable point of view, and, judging by the initial response in Edmonton, it shouldn't be long before additional provincial funds are forthcoming. At these bargain-basement prices, LRT is a transport solution no city can refuse.







MAP SHOWING THE ENTIRE EDMONTON LIGHT RAIL SYSTEM AS ORIGINALLY PROPOSED



The author wishes to thank Mr. Ted Tennison of Edmonton Transit for his hospitality and background information as well as Mr. Greg Gormick for his help in the layout.

# THE KING COMES EAST



Early in 1977 the British Columbia Tourist board operated a promotional trip through Washington, Oregon and California using restored Royal Hudson #2860. This excursion helped generate the record tourist season enjoyed by B.C. that year. In order to add to that success the 1978 promotional tour was planned to head east to cover the Central and Prairie Provinces as well as some Mid-Western States.

The tour was to mark the bicentennial of Captain Cook's landing on British Columbian soil. One of Cook's junior officers was George Vancouver, who's name is now synonymous with that province. Dubbed the "Royal Hudson Discover British Columbia Tour", the train left Vancouver on March 30th. for the east, running directly to Ottawa for the official start of the promotion. The tour was to start officially on April 4th. but due to bearing problems encountered near Kamloops and a frozen water supply at one of the Saskatchewan water stops, the train was almost exactly 24 hours late into the Federal Capital. Deleating a day from its stay there, the tour continued on schedule.

Throughout the tour the locomotive was assisted by two CP Rail F7B's controlled from 2860's cab. The steam engine started the train on all occasions, the diesels being cut in at 20mph. The cab controls for the diesels were very basic consisting of a small black box with two levers, one for forward and reverse, the second for notches one to eight. No current load or engine rpm information was available to the engineer.

Of the long train behind #2860, only five cars were open to the public. The "Nootka Sound" presented artifacts, early engravings and modern graphics displaying the life and times of Captain James Cook. The "Skeena River" and "Kootenay River" coaches depicted the development of British Columbia through the age of steam with a focus on industry, transportation, cities and homes using various dioramas, early photographs and other artifacts. The display car "Cowichan River"



served as a wrap up to the previous where general tourist information was available packaged in plastic bags. The final car of the display was the BCR car "Discovery" whose interior was rebuilt to represent a Victorian lounge.

The trains arrival in Toronto was approximately one hour late, and standing at Union Stations track 4, made an interesting comparison with the GO bilevels running alongside. A CN switcher then hauled the entire train to the CN Express lead which runs adjacent to the CN Tower parking lot. This track ultimately ends underneath the 20York Street office building and was built for express train to truck transfer. It now sees occasional use for valuable shipments. The diesel units and stores car were removed from the consist and spotted on an adjacent track. During its stay in Toronto, #2860 was serviced at CN's Spadina roundhouse

ABOVE - On April 11th., #2860 was in Northern Ontario. Seen here crossing the Mud Lake Trestle. (K. Gansel)

PREVIOUS PAGE - In very murky weather, the Royal Hudson restarts the train from Belleville ( I.C. Platt)

BELOW - The display train crosses the Don Valley on its way into downtown Toronto. (D. Stremes)

rather than at the closer CP John St. facilities. In terms of nostalgia value, CN missed the boat on this occasion, as their #6060 was undergoing repairs and was not available for side-by-side steam age photos.

After two days of display the train moved on to London on an overnight move, which meant that only a hardy few saw her in action on the CP Galt Sub.

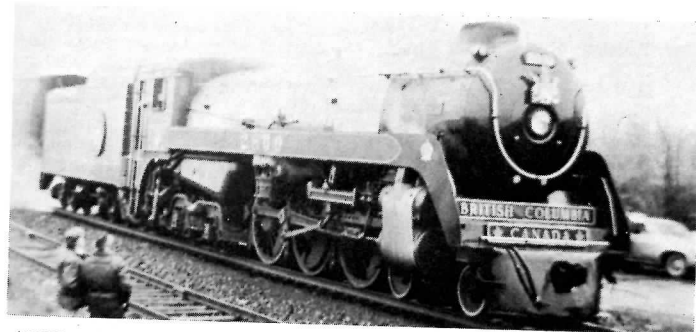
Full details of the engine, train and schedule are itemised in the following tables.



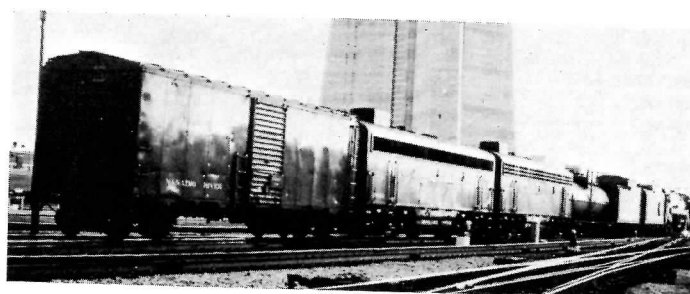
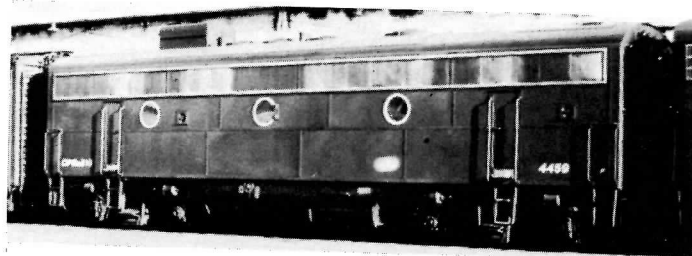


CAR MARKINGS	NUMBER/NAME	CURRENT USE/TYPE	FORMER OWNERS/NAMES/NUMBERS/TYPES
British Columbia	2860	4-6-4 steam locomotive	Canadian Pacific #2860
British Columbia	2860B	Auxiliary tender	Canadian Pacific
CGTX	14087	Heated tank car for fuel oil	-
CP Rail	4438	F-7B diesel unit	CPR #1912
CP Rail	4459	F-7B diesel unit	-
Provincial Museum	4908, Nanaimo River	Stores box car	Canadian Pacific #4908, express boxcar
British Columbia	Pend Oreille River	Crew sleeper	Built Dec. 1950 by Pullman as Great Northern #1273, transferred to Burlington Route as #1273 in Sept. 1953. Purchased by the Lake Shore Railway Historical Society in 1971, renumbered to 6077. 8 roomettes, 4 sections, 3 bedrooms, 1 compartment. Still has original name. B.C. colours applied by adhesive plastic, "Amtrak" cigar stripes painted underneath.
British Columbia	Prince George	Power and tool car	Canadian Pacific #2757, baggage.
Provincial Museum	Nootka Sound	Display car	Canadian National "Alma Lake", lounge car.
Provincial Museum	Skeena River	Display car	Canadian Pacific #2280, coach.
Provincial Museum	Kootenay River	Display car	Canadian Pacific #6602, buffet/lounge.
Provincial Museum	Cowichan River	Display car	Canadian Pacific #2263, coach.
British Columbia	Discovery	Victorian lounge	Reading RR coach, #?, then Permacel Express, #4, Lancaster & Chester #4, then Preamble Express #4, then American Freedom Train #204. Purchased by B.C. in August 1977.
British Columbia	Resolution	Club car	Reading RR coach #?, then Permacel Express #3, then Lancaster & Chester #3, then Preamble Express #3, then American Freedom Train #203. Purchased by B.C. in August 1977.
British Columbia	Endevour	Staff diner	Reading RR combine #592, then Permacel Express #2, then Lancaster & Chester #2, then Preamble Express #2, then American Freedom Train #202. Purchased by B.C. in August 1977.
British Columbia	Shannon Falls	Staff car	Canadian Pacific #6600, buffet/lounge.
British Columbia	Adventure	Staff sleeper/Office	Built April 1942 by Pullman as Southern Pacific sleeper #212, then named "Golden River" in December 1947, then numbered SP #9111 in July 1953, then sold to AFT in 1974. Preamble Express #1, then American Freedom Train #201. Purchased by B.C. in August 1977.
British Columbia	Captain James Cook	Business Car	Originally Norfolk Southern RR business car, then Pacific Great Eastern "Northern Summit", then BCR "Northern Summit", then B.C. Provincial Museum "Peace River". Since the tour has been returned to "Peace River" name.

Pend Oreille River, Prince George, Skeena River, Kootenay River, Cowichan River, Shannon Falls and Adventure are lightweight cars with 4-wheel trucks, roller bearing equipped.  
Nootka Sound is a heavyweight car with 6-wheel trucks, roller bearing equipped.  
Endevour is a heavyweight car with 4-wheel trucks, roller bearing equipped.  
Discovery and Resolution are heavyweight cars with 4-wheel trucks, friction bearings.  
Captain James Cook is a heavyweight car with 6-wheel trucks, friction bearings.



ABOVE - With the rain pouring down #2860 stops for orders at Belleville before heading west.  
ABOVE RIGHT - In a temporary Tuscan Red paint-job, CP 4459 ticks over alongside the CN Tower parking lot.  
RIGHT - The entire power and service consist is shown here on the western approaches to Union Station. When will the CN Tower and #2860 be seen together again?  
NEXT PAGE  
LEFT - Like a thing from the past a Royal Hudson crosses the Port Hope trestle.  
RIGHT - Bringing up the rear - the B.C. coat of Arms as the train's drumhead.  
All photos D. Stremes.





SCHEDULE			
March 30th. 1978		Renfrew	13.50
Vancouver (Drake St.)	dep.14.00 PT	Carleton Place	14.50
Port Coquitlam	14.35	Ottawa	arr.16.00
Haney	14.52		
Mission	15.15	April 5th.-6th. 1978	
Agassiz	15.55	Ottawa	dep.21.00
Yale	16.45	Montreal	arr.00.30
North Bend	arr.18.00		
Ashcroft	dep.19.00	April 7th. 1978	
Kamloops	arr.23.00	Montreal	dep.21.00
		Trois Rivières	arr.23.00
March 31st.1978			
Kamloops	dep.00.01	April 8th. 1978	
Revelstoke	arr.04.00	Trois Rivières	dep.21.00
	dep.05.00	Quebec	arr.22.55
Field	arr.10.15 PT		
	dep.12.15 MT	April 10th. -11th. 1978	
Lake Louise	13.15	Quebec	dep.21.00
Banff	14.00	St. Luc	arr.01.00
Calgary	arr.16.30	Vaudreuil	dep.01.30
Medicine Hat	dep.17.30	Smiths Falls	06.00
	arr.21.00		arr.09.00
April 1st.1978			dep.10.00
Swift Current	arr.01.15 MT	Perth	10.20
	dep.03.15 CT	Belleville	12.15
Moose Jaw	arr.06.00	Trenton	12.30
	dep.07.00	Cobourg	13.20
Broadview	arr.10.15	Port Hope	13.30
	dep.11.15	Oshawa	14.15
Brandon	arr.14.15	Toronto	arr.15.30
	dep.15.15		
Winnipeg	arr.18.30	April 13th.-14th. 1978	
	dep.20.00	Toronto	dep.21.00
April 2nd.1978		London	arr.03.00
Kenora	dep.00.30		
Ignace	arr.04.10	April 15th. - 16th. 1978	
	dep.05.10	London	dep.21.00
Thunder Bay	arr.08.50	Windsor	arr.03.00
	dep.09.50 CT		
Current River	arr.10.10 ET	April 18th. 1978	
	dep.11.10	Windsor	dep.08.00
Nipigon	12.40	Detroit	11.00
Schreiber	arr.14.10	Plymouth	11.45
	dep.15.10	Lansing	13.00
Terrace Bay	15.30	Grand Rapids	arr.15.00
Marathon	16.40		dep.16.00
White River	arr.18.40	Holland	16.45
	dep.19.40	Benton Harbor	18.30
Chapleau	arr.23.10	Michigan City	19.45
		Chicago	arr.22.00
April 3rd. 1978			
Chapleau	dep.00.10	April 20th. 21st. 1978	
Cartier	arr.03.40	Chicago	dep.21.00
	dep.04.40	Waukesha	arr.00.10
Sudbury	05.30		
North Bay	arr.07.10	April 22nd.-23rd. 1978	
	dep.08.10	Waukesha	dep.21.00
Mattawa	09.25	Fond du Lac	arr.23.20
Chalk River	arr.11.10		dep.23.50
	dep.12.10	Stevens Point	arr.03.20
Pembroke	12.50		dep.04.20
		Chippewa Falls	arr.07.30
			dep.08.30
		Camden Place	12.30
		Minneapolis	arr.13.00
		April 25th.-26th. 1978	
		Minneapolis	dep.21.00
		Humbolt Yard	00.01
		Glenwood	03.30
		Thief River Falls	arr.10.30
			dep.11.30
		Noyes	14.00
		Emerson	16.00
		Winnipeg	arr.20.00
		April 28th. -29th. 1978	
		Winnipeg	dep.21.00
		Brandon	arr.23.45
			dep.00.05
		Broadview	arr.03.05
			dep.03.40
		Regina	arr.06.05
		April 30th.-May 1st. 1978	
		Regina	dep.21.00
		Saskatoon	arr.04.30
		May 2nd. -3rd. 1978	
		Saskatoon	dep.21.00
		Wilkie	arr.23.59
			dep.00.30
		Hardisty	arr.04.00 CT
			dep.03.30 MT
		Wetaskiwin	arr.07.30
			dep.08.00
		Edmonton	arr.09.00
		May 4th. - 5th. 1978	
		Edmonton	dep.21.00
		Red Deer	arr.23.00
			dep.23.30
		Calgary	arr.01.15
		May 7th. 1978	
		Calgary	dep.06.00
		Field	arr.09.40 MT
			dep.09.00 PT
		Golden	10.15
		Revelstoke	arr.13.30
			dep.14.30
		Sicamous	15.40
		Salmon Arm	16.20
		Notch Hill	16.50
		Chase	17.20
		Kamloops	arr.18.30
		May 8th. 1978	
		Kamloops	dep.07.00
		Ashcroft	08.25
		Spences Bridge	09.10
		Lytton	09.55
		North Bend	arr.11.00
			dep.11.30
		Yale	12.45
		Agassiz	13.35
		Mission	14.15
		Haney	14.35
		Port Coquitlam	14.55
		Vancouver	arr.15.30

# 10 YEARS AGO

## Summer 1968

### A Fall Start for Turbo?

United Aircraft of Canada Ltd. wound up three weeks of Turbotrain testing on CN's Toronto-Montreal main line on July 26th, and indicated that the sleek machines will be in revenue service by year's end.

The train used for the latest stage of the testing program, set No. 3, was one of five being developed by UAC under its lease-maintenance agreement with CN. The rigorous demands made on the train since the beginning of July (each round trip meant covering 670 miles in a total travelling time of about eight hours) have revealed a variety of faults but have also proved the viability of the concept.

According to reports, the engines gave no trouble during the testing period, although there were problems with accessory equipment. In the next six weeks, changes will be made in the diesel fuel system and parts of the train's electrical system.

One of the biggest headaches was faulty operation of the train's electrically powered doors. The doors — two in each car — are fitted with steps designed to lower themselves onto a station platform. The system was balky in tests, so the electric motors will be modified.

Officials stress that testing the turbotrains is as rigorous as flight-testing a new aircraft. Their integral design means that every bug has to be out before they can go into service.

A second factor is the heavy demand that will be made on the trains. There will be three daily runs in each direction and each train will cover 1,000 miles a day — 300 more than the diesel-driven Rapido that currently covers the route.

Although the development crew did not seek priority on the Montreal-Toronto route during the tests, the train consistently did the trip in less than four hours, with a fastest run of 3 hours and 51 minutes, an average speed of 87 mph.

### Washout, Derailment Force Rail Detours

Torrential rains in northern Ontario in mid-July culminated in washouts which cut Canadian National's main line near Longlac for ten days. Detouring passenger trains lost close to ten hours apiece as they detoured between Nakina and Oba via the Pagwa Subdivision to Hearst, and the Algoma Central. Some CN freight operated via Fort William, detouring over CP Rail lines from Red Rock to Manitowadage.

Less serious was the detouring of five CP Rail piggyback trains over Canadian National between Toronto and Port Hope during the night of July 30th. CP Rail's own main line was blocked by the derailment of the rear seven cars of eastbound manifest 904 at Audley, west of Whitby. Wreckers from Toronto and Smiths Falls had the line open by noon the following day.

### Tempo Services Are Extended

CN introduced Tempo service on Toronto-Windsor trains 141 and 146 on July 10th, increasing to six the number of southern Ontario trains so equipped. Tempo equipment now operates to Sarnia on train 151, leaving Toronto at 1625, and to Windsor on trains 141 and 147, leaving Toronto at 1715 and 1930 respectively. The returning movements, Nos. 150, 146 and 142, arrive at Toronto at 0949, 1600 and 1145 respectively.

Although the Tempos' locomotive-mounted power supplies are designed for the requirements of five-car trains, the less-than-normal electrical load of summer operation is enabling CN to run six and seven-car trainsets with a single unit. On at least one occasion, a GO Transit locomotive handled a Tempo train on a test basis; both GO and Tempo equipment utilize head-end power at 575 volts A.C.

During the summer, Tempo 141 on Fridays is augmented by an extra section consisting of three RDC's running from Toronto to London only. The Budds return to Toronto the same evening as a section of train 148.

\* Unit 3238, damaged beyond economical repair in the Pefferlaw derailment of March 16th

was retired on June 6th. Its companion in that affair, 3212, will be returning to service imminently.

### CN Plans New Terminals for Bulk Cargo

This fall will see the introduction of the first of a series of bulk terminals on Canadian National lines, involving full integration of road and rail transportation combined with an efficient method of transferring bulk materials between the two modes. Dubbed 'Cargo-Flo' by CN, the system will combine the low cost of long-distance rail haul with the flexibility and speed of road transport, enabling shippers and receivers without rail sidings to benefit from the economies of rail transport.

The initial terminal will be constructed in Toronto, close to the site of the Express Terminal at Toronto Yard. It will consist of several tracks for the storage of loaded cars, a truck scale for weighing of truck shipments and an office to serve the site. The Toronto terminal will be the receiving point for liquid and dry bulk products funnelled into the area by rail primarily from Montreal and the Sarnia chemical belt.

Pressurized hopper cars figure heavily in the transport of dry bulk products. Bulk commodities will move from production plant to the bulk terminal in these cars before being transferred — by air pressure — to highway trucks for direct delivery to the customer. The process will eliminate the need for intermediate storage or handling, and split shipments from one car to several customers will be possible.

### The TH & B Wants Out of Its Passenger Business

The Toronto, Hamilton & Buffalo has applied to the Canadian Transport Commission for permission to drop its passenger trains 371 and 376 between Hamilton and Welland, noting that only a handful of passengers are carried on these train between TH & B points.

The TH&B service is the intermediate link in the CP-TH&B-NYC Toronto-to-New York run, the only rail route between the two cities.

### ARR Construction Goes into Its Final Phase

Work crews of 50 to 60 men will move into Grande Prairie, Alberta on Aug. 15th to begin laying track southward from the city on the Alberta Resources Railway.

Track laying will be carried out by a tractor fitted with a hystor front end boom. Ties and rails and rail fastenings will be distributed along the track and picked up by the track layer as it moves forward. Under good conditions the unit can lay track at the rate of one mile per day.

Track laying on the ARR, being built by CN for the Alberta government at a cost of \$100-million, is completed to Mile 170; Grande Prairie is approximately Mile 255 on the ARR. The line is slated to be completed Oct. 23.

### Canadian National Motive Power Notes

#### \* Deliveries:

... from General Motors Diesel Ltd., 3,000 h.p. SD-40's, class GR-30d:

5050 — May 31-68	5055 — Jun 27-68
5051 — May 31-68	5056 — Jul 11-68
5052 — Jun 14-68	5057 — Jul 11-68
5053 — Jun 14-68	5058 — Jul 18-68
5054 — Jun 27-68	

Units 5035-5052 are assigned to Toronto Yard; the remaining locomotives of the current order, Nos. 5053-5075 will be assigned to Symington (Winnipeg) for Prairie Region duties.

... from MLW-Worthington Ltd., 3,000 h.p. Centurion 630's, class MR-30b:

2036 — May 14-68	2040 — Jun 3-68
2037 — May 24-68	2041 — Jun 13-68
2038 — May 30-68	2042 — Jun 18-68
2039 — Jun 3-68	2043 — Jun 21-68

These deliveries complete CN's current order from MLW.

... from MLW-Worthington Ltd., Turbotrains:

P102-P202 — May 22-68
P103-P203 — Jul 2-68

### Canadian National Passenger Car Notes

\* Oops! The pressure of the passenger business has obliged CN to return to service and repair a number of cars which had been approved for retirement

Back on the road

are:

Cafeteria Cars; 437, 491  
Cafe-Club Car; Tignish (724)  
Sleeping Cars; Whitebear (1000), Ludlow (1513), Chilli-wack (1527), St. Hyacinthe (1683)  
Coaches; 5109, 5242.

\* Six cafe-lounge cars, featuring a new concept in on train catering for coach passengers, were introduced by CN on its two Montreal-Halifax trains June 8th. The six cars, converted from existing coach-lounges at Pt. St. Charles shops, combine the services of three types of cars now in operation — the coach lounge, the snack counter coach and the dinette.

Each car includes a 24-seat cocktail lounge, a 20-seat dining room, a five-stool dinette section and a take-out counter. With the exception of breakfast, when meats and eggs will be cooked to order, there will be no on train food preparation. Frozen, ready-cooked food is packaged separately in disposable foil pans, six portions per pan. The food is brought to serving temperature in minutes in infra-red ovens. Wrapped cold sandwiches, hot dogs, hamburgers and specialty items such as hot meat pies and omelets will be available at the take-out counter. These will be heated in microwave ovens in seconds. Hungry?

The cafe-lounge cars are numbered 750-755, and were converted from coach-lounges 3000/02/04/05/06/07 respectively.

\* CN has leased two twin-unit dining cars from the Baltimore & Ohio, for use on the Super Continental.

\* CN's new Tempo equipment, now in service in southern Ontario, is numbered as follows:

Club; 320-324  
Cafe; 340-344  
Coach; 360-374

### CP Rail Motive Power Notes

\* The first two units of CP Rail's current order of Century 630's from MLW-Worthington Ltd. were delivered in July, as follows.

4500—Jul 16-68  
4501—Jul 19-68

The remaining six locomotives will be delivered in late August. All eight will be assigned to St. Luc (Montreal), although a temporary stint west of Calgary for at least a portion of the units is a probability.

\* The previously-announced sale of CP Rail Trainmasters to Striegel Equipment notwithstanding partially dismantled units 8910 and 8912 were reported at Ogden Shops (Calgary) on July 3rd, awaiting shipment to Kalium Chemicals of Saskatchewan.



\* Commencing Wednesday, July 17, another group of PCC cars were moved to the south side of Pier 28, to begin the long journey to Alexandria, Egypt. A total of 76 cars were to be included, but as of July 21, only 66 had been transported to the pier, as it was thought that no more could be carried by the Mare Tranquillo (Quiet Sea), which is by far the largest ship yet employed for movement of street cars across the ocean. A total of 14 were mounted on deck, with the remaining cars being placed in the hold, on top of a load of corn, the principal cargo. Included in the shipment was car 4575, the 1939-built ex-Cincinnati demonstrator (the lone survivor of three cars built for the Cincinnati Street Railway in 1939).

The 66 cars moved to the pier were: 4006, 4011, 4022, 4053, 4043, 4111, 4113, 4118, 4156, 4160, 4170, 4188, 4190, 4217 and 4295, all from St. Clair Division; 4007, 4169, 4178, 4233, 4272, 4281 and 4282, all from Hillcrest; 4200, 4221, 4231, 4278, 4279, 4575, 4576, 4579, 4580 and 4587, all from Roncesvalles; 4202, 4205, 4211, 4212, 4213, 4218, 4222, 4223, 4224, 4225, 4229, 4231, 4235, 4236, 4238, 4239, 4242, 4249, 4250, 4254, 4255, 4258, 4267, 4268, 4270, 4277, 4280, 4293, 4577, 4581, 4589, 4594, 4590 and 4591, all from Russell. All cars were hoisted onto flatbed trailers from track 14 at the rear of Russell Division, travelling via Eastern, Leslie, Commissioners, Cherry and Polson Street to the pier.

In addition to the above, cars 4201, 4274, 4299 and 4588 were towed from Roncesvalles to Russell, where they are joined with 4210, 4232, 4583, 4585, 4592 and 4598, awaiting shipment. Despite the size of the Mare Tranquillo, some of the 66 cars shipped to the pier may not be taken aboard. As of July 21, about 30 remained to be loaded.

PCC cars 4046, 4075, 4077, 4083, 4119, 4136, 4216, 4219 and 4743 have been cut up at Hillcrest by the scrapers. All but 4046, 4216 and 4743 had been stored at Danforth Division until recently. The balance of the cars stored at Danforth are being scrapped on the spot, except for 4000 which has been removed to Hillcrest Shop for storage. All overhead in the yard and on Hillington Avenue has been taken down.





*Rail and Transit*

UCRS 1978

