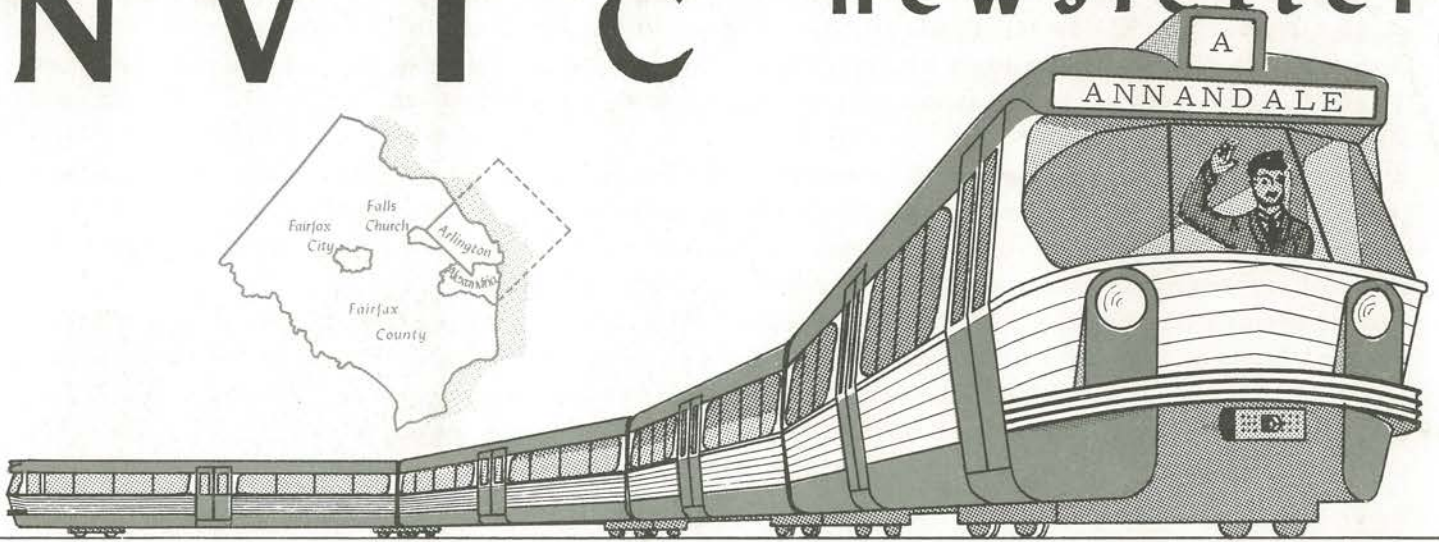


# N V T C newsletter



Vol 1, No 11

Northern Virginia

Special Issue



MODERN SUBWAY CAR for use on light-volume rapid transit system now under construction in Frankfurt-am-Main, Germany. Roll-up steps enable this car to load passengers from high (car-floor level) platforms in the downtown subway, and from low platforms on surface sections of the lines. photo by DuWag.

## NORTHERN VIRGINIA TRANSPORTATION COMMISSION

Created by Acts of the Virginia General Assembly as a Public Instrumentality to Plan and Develop a Transportation System for Northern Virginia, and to Participate as Virginia's Share of an Interstate-Compact Transit Authority for Metropolitan Washington.

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## GOVERNOR GODWIN SIGNS TRANSIT COMPACT BILL:

On 28 January 1966, in the presence of Senators and Delegates from Northern Virginia, Governor Mills E. Godwin, Jr., signed into law the bill wherein the Virginia General Assembly approved the compact to create a Washington Metropolitan Area Transit Authority. Provisions of the compact were described in the January issue of NVTC newsletter.

Because Senator Charles R. Fenwick had included an emergency clause in the bill, it became effective immediately, enabling prompt initiation of the additional steps through which the compact must pass. It now needs to be approved by the District of Columbia Board of Commissioners and to be ratified by Congress.

Approval by the D. C. Commissioners is not a simple matter. Because the current actions are in reality an amendment of an existing interstate compact (which created the Washington Metropolitan Area Transit Commission -- a regulatory body), the terms of the original compact must be followed. These terms require the D. C. Board of Commissioners to gain the consent of Congress before agreeing to any amendments.

## PRESIDENT JOHNSON ENDORSES COMPACT IN MESSAGE TO CONGRESS:

"Congress approved plans for a rapid transit system, authorized its construction, and authorized grants from the Federal and District Governments as a first stage in financing its development. As soon as funds were made available, the Transportation Agency began the necessary work still remaining before actual construction can begin.

"There is, nonetheless, much left to do. The rapid transit system will achieve maximum usefulness only when it is extended into Maryland and Virginia suburbs. The interstate compact among Maryland, Virginia and the District of Columbia will be promptly presented to Congress for its consent, in order that the interstate authority may develop plans for a full regional system and a financial plan for its construction. Arrangements must be perfected to transfer the responsibility for the system in an orderly and proper way from the Agency to the interstate authority. These tasks are not easy, and it will require diligent effort on the part of many people and agencies to master the problems that remain.

"The Congress can be assured, however, that all of these problems are being given the fullest and most diligent consideration, and that none of them will be allowed to stand in the way of an uninterrupted schedule of construction."

## CHARLES BEATLEY IS NEW NVTC COMMISSIONER:

Early in February, the Alexandria City Council appointed Mr. Charles E. Beatley, Jr., as one of its representatives to NVTC. Mr. Beatley was recently elected to the City Council. He replaces -- on both the Council and NVTC -- Mr. James T. Luckett, Jr., who was elected as Alexandria's City Treasurer.

## MODES OF URBAN TRANSPORT:

On 8 September 1965, President Johnson signed the National Capital Transportation Act of 1965 into law. The bill - H. R. 4822 -- had been passed by the House of Representatives on 15 July and by the Senate on 25 August -- is now Public Law 89-173, 89th Congress. It authorizes the National Capital Transportation Agency to proceed with the design and construction of a subway system for Washington.

With the assurance that there will be a D. C. subway, NVTC commenced expanding its staff in order to plan extensions of the rail rapid transit into the Virginia suburbs. With the further assurance -- by Virginia's approval of the compact -- that a regional system can be financed and developed, the NVTC staff is moving forward with the transit-planning task.

We believe it is essential to keep the public informed of progress and findings. In order to assure that we all speak the same language, this special issue of NVTC newsletter is devoted to describing the various modes of urban transport.

## MOTOR BUS:

The ubiquitous motor bus is familiar to Northern Virginians. Alexandria, Barcroft & Washington (AB&W) Transit Co., and Washington, Virginia & Maryland (WV&M) Coach Co. operate modern motor buses in local and suburban service, in addition to one D. C. Transit System, Inc., route that penetrates Virginia at Rosslyn Circle.



AB&W motor bus in Washington.  
photo by Charles J. Lietwiler

Nearly all motor buses are propelled by diesel engines, though some gasoline-engine motor buses still operate in some localities. On city streets, they have a theoretical capacity of 4,500 passengers per hour in one direction; on freeways, this value goes up to 9,000. Each bus seats up to 51 persons and has space for an additional 25 standing passengers.



British double-deck motor bus.  
Morecambe & Heysham Corp. photo  
from Judy Brennan

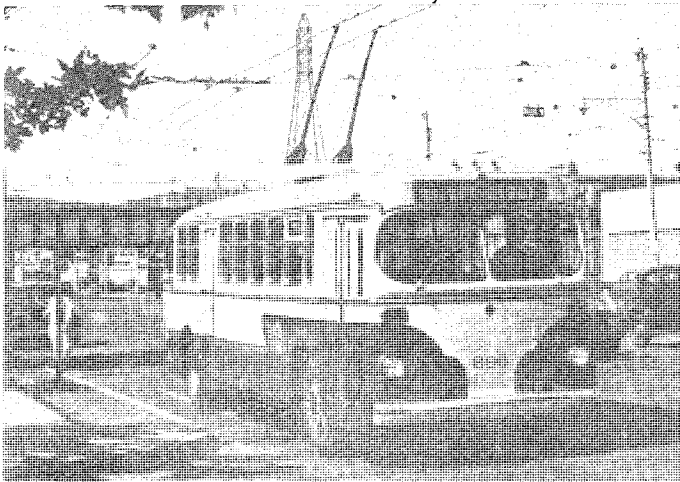
## TROLLEY COACH:

The trolley coach has essentially the same characteristics as the motor bus except that it is powered by electric motors receiving their current from overhead trolley wires. Therefore, they are more economical than motor buses in certain instances.

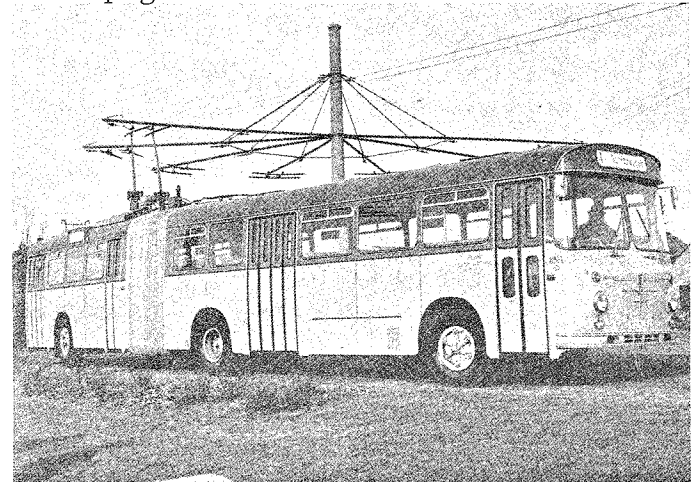
A trolley coach line has a slightly higher capacity than a motor bus route due to the coach's ability to accelerate

more rapidly and to brake more efficiently.

Trolley coaches are operated in the transit systems of these North American cities: Boston, Calgary, Chicago, Cornwall, Dallas, Dayton, Edmonton, Fort William, Halifax, Hamilton, Johnstown, Kitchener, Mexico City, Montreal, New Orleans, Philadelphia, Port Arthur, Regina, Saint Joseph, San Francisco, Saskatoon, Seattle, Toronto, Vancouver, and Winnipeg.



An American Trolley coach.  
photo by Henry Leinback



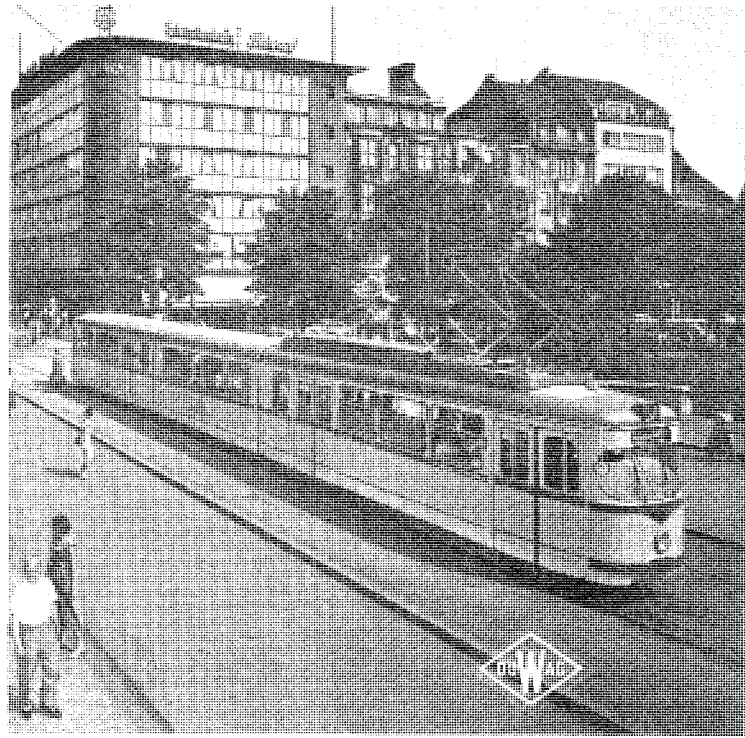
A German articulated trolley coach.  
photo from Der Stadtverkehr

## STREETCAR:

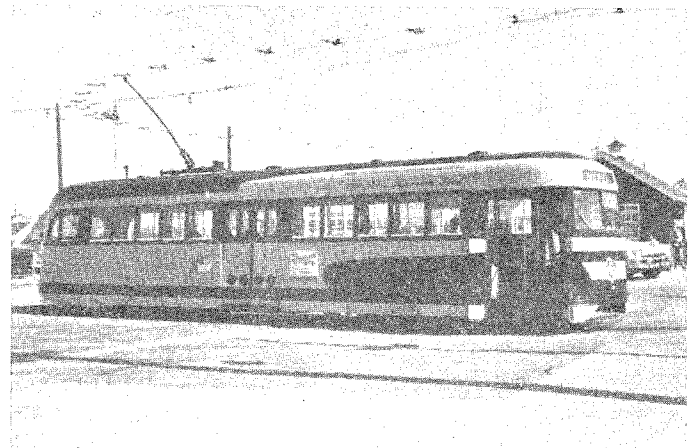
The versatile streetcar comes in a variety of forms and styles. There are streetcar lines in the North American cities of Boston, El Paso and Ciudad Juarez, Mexico City, Philadelphia, Pittsburgh, Saint Louis, Toronto, New Orleans, and Tampico. All except the last two cities enjoy the relatively modern PCC (president's Conference Committee) car. Characteristically, streetcars run on railroad track placed in paved streets and collect the electricity for their motors from overhead trolley wires. (Washington's was the last of the streetcar systems to use underground third rail -- or "conduit" -- for power collection.)

Streetcars can be operated singly or coupled into trains of two or more cars (such as is done in Toronto). They can pull motorless trailers (a common practice in Europe). The most popular variety being built now is "articulated". An articulated streetcar has a flexible joint in the car body. The capacity of a streetcar line varies considerably according to the type of streetcars used -- from 9,000 to 20,000, but the generally accepted theoretical value is 13,500 passengers per hour on each track.

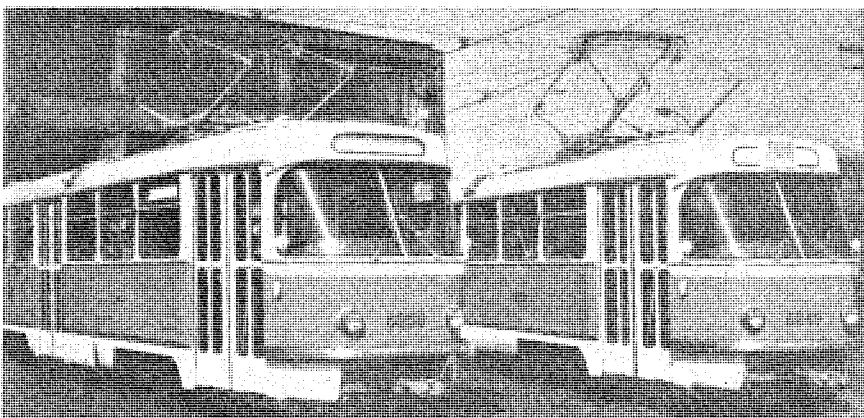
Residents of Washington, which lost its streetcar service in recent years, may be interested in knowing that former Washington streetcars are running in streetcar and light-volume rapid transit service in Barcelona, Spain; Sarajevo, Yugoslavia; and Fort Worth, Texas.



A German double-articulated streetcar.  
photo by DuWag



A modern Brilliner-type American streetcar.  
photo by Sy Reich



Modern PCC-type Czechoslovakian streetcars built under U.S. license. These are equipped to operate in trains of two or more cars.

photo by V. Zouhar from Modern Tramway

**LIGHT-VOLUME RAPID TRANSIT:**

Light-volume rapid transit, generally, exploits the versatility of the streetcar type vehicle in rapid transit type service. Its tracks can be placed in subway, on elevated structure, in median strips of expressways, on private right-of-way, or -- where no other right-of-way can be economically provided -- in surface streets. It can also operate on railroad tracks.

Light-volume rapid transit is enjoyed in this country in Boston, Cleveland, Philadelphia, Newark (New Jersey), and Fort Worth. All of these cities envision extensions of their systems. Some streetcar lines in Pittsburgh, San Francisco, Toronto, and Mexico City have certain light-volume rapid transit characteristics and there are proposals to turn them into light-volume rapid transit lines. An all-new system of this type is proposed for metropolitan Dayton, Ohio. In Europe, this is fast becoming the most popular type of rail rapid transit.

Because the vehicles vary as much as do streetcars, the carrying capacity of a light-volume rapid transit line ranges from 20,000 persons per track per hour for trains of individual cars to 32,000 for trains of articulated cars.



Two-car train on Boston's newest rapid transit line: the Highland Branch.

photo by Charles J. Lietwiler

This streamliner in Fort Worth was once a Washington, D. C., streetcar.

photo by Leonards Department Store



Two-car train near Cleveland, Ohio.

photo by General Electric Co.



Two-car train in Philadelphia's suburbs.

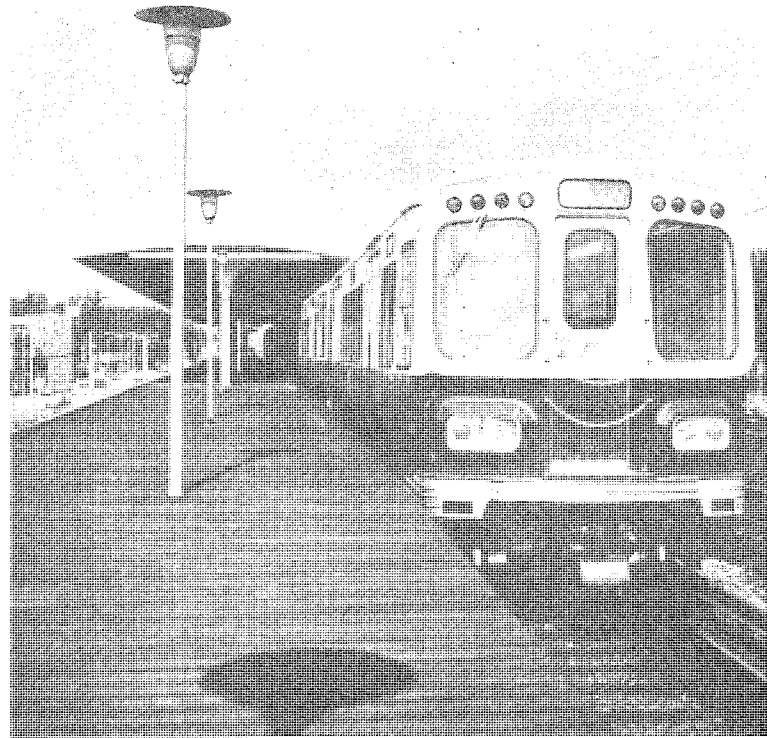
photo by Bill Stevens, Falls Church



## HEAVY-VOLUME RAPID TRANSIT:

New York City, Chicago, Philadelphia, Boston, Cleveland, and Toronto are served by heavy-volume rapid transit systems which are popularly referred to as "subways" (even though considerable mileage is on the surface or upon elevated structures) except in Cleveland. All of these cities plan expansion of their systems. Such systems are proposed or under serious consideration in Atlanta, Baltimore, Los Angeles, Louisville, Miami, Pittsburgh, Seattle, and Washington.

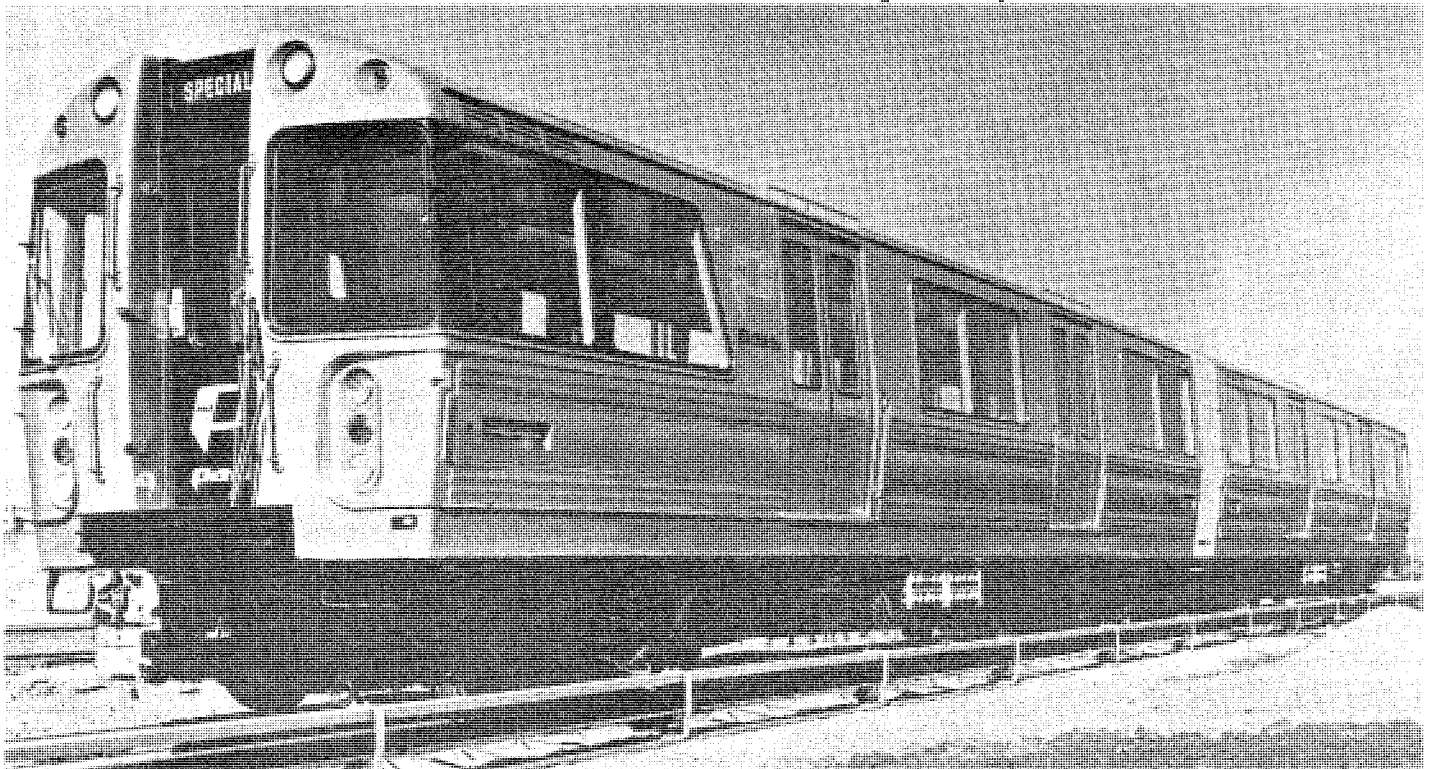
Although the most costly to build, heavy-volume rapid transit is an extremely efficient facility, and on a cost-per-passenger basis is the most economical means of moving people. It is the work-horse of the transit industry, having a rated hourly capacity of 40,000 passengers per hour per track. Where "express" tracks are added -- such as on most lines in New York City -- they have a capacity of 60,000. In actual operation, such capacities have been exceeded; in New York City there is a recorded instance of 185,000 passengers per hour, of which 132,000 were in express trains, in one direction.



New elevated train in Chicago.  
photo by General Electric Co.

Fast new train for Port Authority Trans-Hudson Corp. ("PATH").

photo by General Steel Industries



## REGIONAL RAILWAY:

Regional railways in this country are typified by commuter-train services. However, the term "commuter railroad" is inappropriate because it omits recognition of the capability to serve other travellers than office workers bound to and from work. When warranted by circumstances such as extensive tunnels, anti-smoke ordinances or heavy traffic, these railways are electrified. Such electric railway lines are operated by ten railroad companies in New York, Chicago, Philadelphia, and Montreal. Many others provide service with self-propelled Rail Diesel Cars (RDC's) or diesel-locomotive-hauled trains in these and other cities.

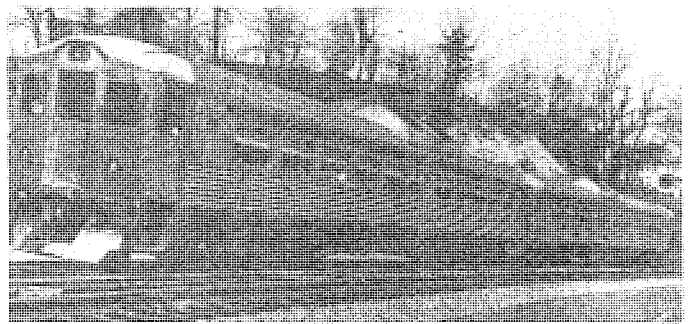
Philadelphia is actively modernizing its system of lines in cooperation with two railroads. Toronto plans a network of services within its metropolitan region on existing railroad lines. Many foreign cities enjoy, are developing, or plan such service. But, most remarkable of all is the billion-dollar 75-mile San Francisco regional system being developed by the Bay Area Rapid Transit District, embodying all-new concepts and techniques for high-speed automated trains.

Regional railways have a capacity of 60,000 passengers per track per hour, although the new San Francisco system will have a capacity of only 30,000 because of emphasis upon spaciousness, comfort, and providing seats for all passengers.

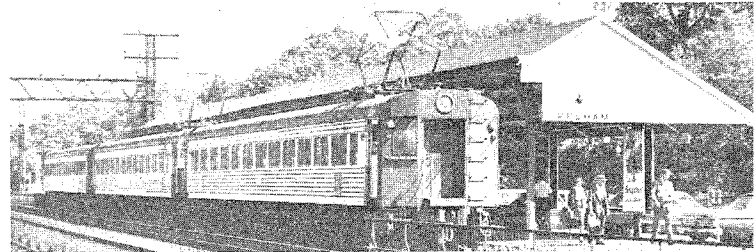
Characteristic of such services are distances of two miles or more between stations, enabling trains to reach high speeds of 70 to 90 miles per hour. Because they travel longer distances to suburban communities and satellite cities beyond the urban area, the cars generally are roomier and more comfortable than rapid transit cars.

Mock-up of car to be used in suburban service in San Francisco on regional railway system now under construction.

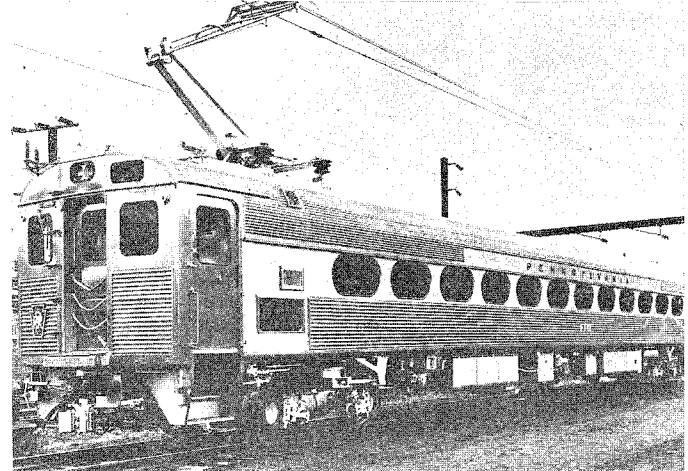
photo by General Steel Industries



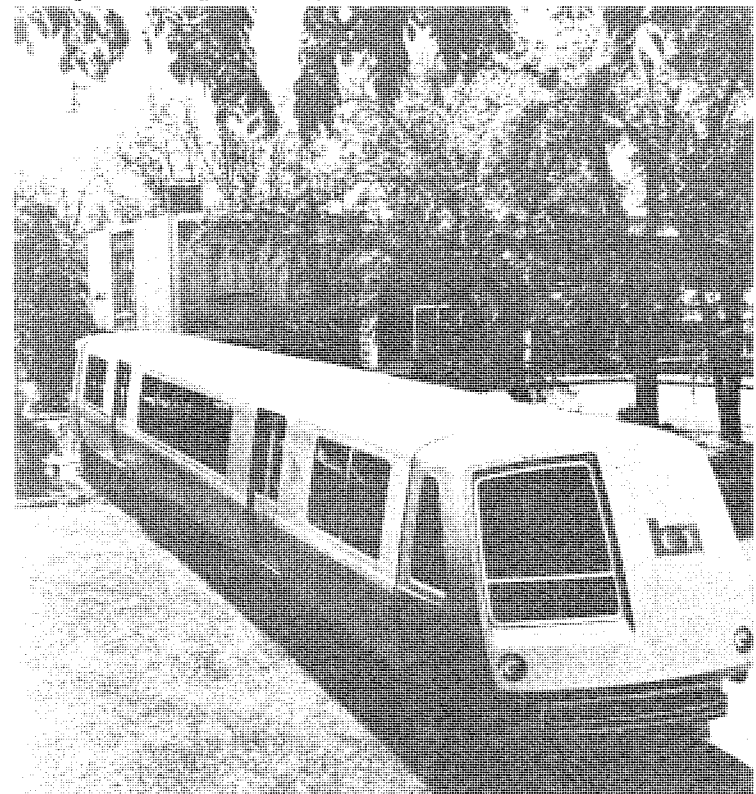
Two RDC's on the Baltimore & Ohio RR.  
B&O photo from Leonard W. Rice collection



Electric train in metropolitan New York City.  
photo by Pullman-Standard



Electric, stainless-steel train in Philadelphia.  
photo by General Electric Co.



## MONORAILWAY AND OTHER MODES:

Monorailways have aroused much public interest. There are essentially two varieties: suspended and supported. One suspended monorailway operates in regular service in Wuppertal, Germany. A supported line connects Tokyo to its international airport. In several locations in Europe and Japan, short experimental or amusement-type monorailways of both types operate successfully. The Seattle World's Fair line was of the supported, or "ALWEG" type.

It is generally the contention of transit planners and engineers that monorailways are best suited for terminal-to-terminal shuttle type service (without intermediate stops) or loop lines.

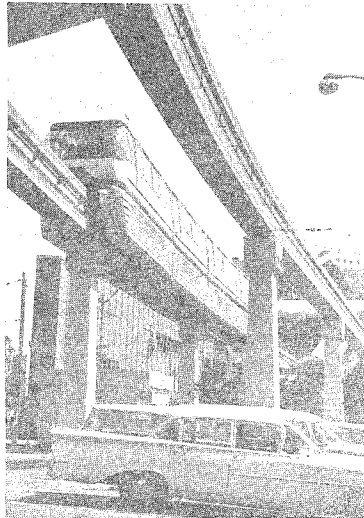
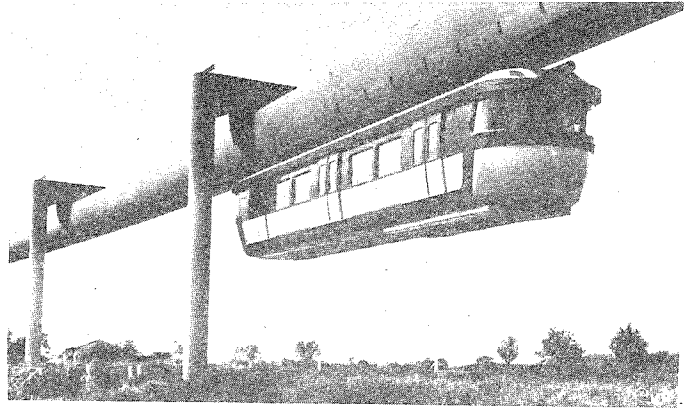
The capacity of the supported-type line is 14,080 per "track" per hour (for the Seattle monorailway); for the suspended type, 30,000 to 56,000 (estimated from performance of an experimental monorailway at Chateau-neuf-sur-Loire in France, the "AMF-SAFEGE" test line).

There are several other modes of urban transport that are not fully described in this article.

Funiculars provide service in several cities of the World, including Pittsburgh, Pennsylvania, where extremes of topography make this a useful means of travel. For similar reasons, San Francisco operates its famous cable cars. Deserving of mention are the Senate Subway and House

Subway under Capitol Hill in Washington, which are essentially horizontal elevators.

Many exotic forms of public transport have been proposed in recent years, but most have proven impractical from engineering or economic points of view. Many require extensive additional research before they can be seriously considered for actual use.



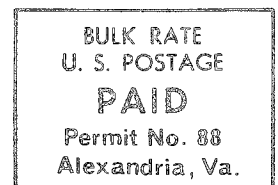
AMF-SAFEGE test line in France (suspended monorailway). photo by AMF Monorail Division.

Seattle Worlds' Fair line (supported monorailway). photo by Charles J. Lietwiler.

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