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transit 76 revolution

transit fact book

'75-'76 edition

apta

american public transit association

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Transit Fact Book

1975–1976 Edition

Annual Summary of Trends in Urban Mass Transportation for the United States of America

The 1975–1976 edition of the *Transit Fact Book* is the second annual edition compiled by the Statistical Department of the American Public Transit Association (APTA); the 1975–1976 edition is also the thirty-third annual edition of this publication formerly issued under the same title by the American Transit Association (ATA) for 31 years. Identified as the *'75–'76 Transit Fact Book,* this edition includes information concerning the U.S. transit industry through the end of calendar year 1975. *Figures reported for calendar year 1975 are preliminary.*

Transit industry trends reported in the *Transit Fact Book* are for organizations, both publicly owned and privately owned, providing urban mass transportation service in the United States of America including the Commonwealth of Puerto Rico. Taxi cabs, intercity railroads, suburban railroads, commuter railroads, intercity buses, sightseeing buses, school buses, and dial-a-ride bus services not an integral part of a transit system are excluded.

Changes in figures reported for calendar year 1974 and prior years, where evident when comparing the *'75–'76 Transit Fact Book* with information published in the *'74–'75 Transit Fact Book* and earlier editions, reflect adjustments necessary to account for subsequent refinement of information.

Tables reporting transit industry trends by population groups require special consideration regarding problems of comparability which are the result of changing population reflected in figures published by the U.S. Department of Commerce, Bureau of the Census, every ten years. For calendar years 1974 and 1975, transit systems are assigned to population groups categorized under the U.S. Census of Population definition of "urbanized area" excepting urban places of less than 50,000 population outside urbanized areas. For calendar years 1971, 1972, and 1973, transit systems are assigned to population groups categorized by the headquarters city of each individual transit system using 1970 Census of Population figures. For calendar years 1961 through 1970, transit systems are assigned to population groups categorized by the headquarters city of each individual transit system using 1960 Census of Population figures. For calendar years 1955 through 1960, transit systems are assigned to population groups categorized by the headquarters city of each individual transit system using 1950 Census of Population figures.

American Public Transit Association

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1100 17th Street, N.W. Suite 1200
Washington, D.C. 20036

(202) 331-1100

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Glossary of Transit Industry Terms

Revenue Passengers/Revenue Passenger Rides
Single-vehicle transit rides by initial board (first-ride) transit patrons only; excludes all transfer rides and all non-revenue rides.

Total Passengers/Total Passenger Rides
Combined total of all single-vehicle transit rides by (1) initial board (first-ride) revenue passengers, (2) transfer passengers on second and successive rides, and (3) non-revenue passengers entitled to transportation without charge.

Single-Vehicle Transit Ride
One person traveling aboard one transit vehicle.

Light Rail
Streetcar-type transit vehicle railway constructed on city streets, semi-private right-of-way, and exclusive private right-of-way; formerly known as "streetcar" ("trolley car") and "subway-surface" depending upon local usage or preference.

Heavy Rail
Subway-type transit vehicle railway constructed on exclusive private right-of-way with high-level platform stations; formerly known as "subway" or "elevated (railway)."

Trolley Coach
Rubber-tired transit vehicles propelled by electric motors drawing current, normally through overhead wires, from a central power source not on board the vehicle.

Cable Car
Transit vehicle railway operating in mixed street traffic with unpowered, individually-controlled transit vehicles propelled by moving cables located below the street surface and powered by engines or motors at a central location not on board the vehicle.

Motor Bus
Rubber tired, self-propelled transit vehicle with fuel supply carried on board the vehicle.

Inclined Plane
Transit passenger vehicle railway operating over private right-of-way on steep grades with unpowered vehicles propelled by moving cables attached to the vehicles and powered by engines or motors at a central location not on board the vehicle.

Rapid Transit
Transit vehicles operating over completely grade-separated private right-of-way. The term *rail* rapid transit, also known as "rapid rail transit," applies to both operation of light rail vehicles over exclusive private right-of-way and operation of heavy rail vehicles; the term *bus* rapid transit applies to operation of motor buses over exclusive bus roads ("rapid busways").

Total Vehicle Miles Operated
Sum of all passenger vehicle miles operated in line (regular) service, special (charter) service, and non-revenue service. When vehicles are operated in trains, each vehicle is counted separately, e.g., an eight-vehicle train operating for one mile equals eight vehicle-miles.

Average Fare
"Passenger revenue" divided by "revenue passengers."

Adult Cash Fare
Basic full fare paid by one person for one transit ride excluding transfer charges and zone charges (if any).

Annual Payroll
Wages and salaries including overtime and allowances paid to transit system employees.

Average Annual Earnings per Employee
"Annual Compensation" divided by "Average Number of Employees."

Employer Payroll Taxes
Transit system portion(s) only of federal, state, and local payroll tax obligations.

Fringe Benefit Costs
Transit system expenditures for employee compensation in addition to wages, salaries, and employer payroll taxes.

Total Labor Costs
Sum of "Annual Compensation," "Employer Payroll Taxes," and "Fringe Benefit Costs."

Glossary of Transit Fact Book Financial Terms

No single system of accounts is universal to the transit industry. However, many United States transit systems employ a system of accounts based on one or more of four major accounting systems relatively common nationwide: (1) "Interstate Commerce Commission Accounting System for Common and Contract Motor Carriers of Passengers," (2) "Interstate Commerce Commission Accounting System for Electric Railways," (3) "American Transit Accountant's Association Classification of Accounts for Bus Operating Companies," and (4) "Urban Mass Transportation Administration Uniform Financial Accounting and Reporting Elements (Project FARE)." Please note that a given financial term used within two or more of these accounting systems generally involves varying individual definitions, and various terms can be used to define similar accounts. Financial terms used in the *'75-'76 Transit Fact Book* are an amalgamation of descriptive terminology selected to permit gross aggregation of financial data for the entire U.S. transit industry. The following definitions of financial terms should be used

only in reference to the *'75-'76 Transit Fact Book*; these terms do *not* identify specific ledger accounts from any accounting system listed above and are *not* intended to serve as model definitions of financial terms in publications other than the *'75-'76 Transit Fact Book.*

Passenger Revenue
Fares, including transfer charges and zone charges, paid by transit passengers traveling aboard transit vehicles operating in regular service; also known as "farebox revenue."

Other Operating Revenue
Revenue derived from provision of transit service other than line (regular) service; includes charter service revenues, special service revenues, and sale of advertising space aboard transit vehicles.

Total Operating Revenue
Total revenue derived from provision of transit service including reimbursements by third parties for reduced fare rides and for guaranteed costs not covered by "farebox revenue."

Maintenance and Garage Expense
Total expense of all labor, materials, equipment, and facilities used to repair and to service transit passenger vehicles, service vehicles, and passenger vehicle rights-of-way.

Transportation Expense (Including Station and Fuel Expense)
Total expense of all labor, materials, equipment, facilities, and fees required for operating transit passenger vehicles and passenger stations.

Traffic, Solicitation, and Advertising Expense
Total expense of all labor, materials, facilities, equipment, and fees associated with soliciting and promoting patronage including timetables and other publications distributed to the public.

Administrative and General Expense (Including Insurance and Safety Expense)
Total expense of all labor, materials, facilities, equipment, and fees associated with general office functions, legal services, safety, and insurance.

Depreciation and Amortization
Total decline in value of transit system assets incurred through use of tangible property (depreciation) and intangible property (amortization).

Operating Taxes and Licenses
Total cost of all taxes and licenses—other than income taxes—associated with transit system operations including employer payroll taxes.

Net Operating Rents
Net amount of (a) all expense paid by a transit system for rents associated with transit operations and (b) all revenue received by a transit system from property associated with transit operations rented to other parties.

Total Operating Expense
The sum of all transit system operating expenses: "Transportation Expense (Including Station and Fuel Expense)," "Maintenance and Garage

Expense," "Traffic, Solicitation and Advertising Expense," "Administrative and General Expense (Including Insurance and Safety Expense)," "Depreciation and Amortization," "Operating Taxes and Licenses," and "Net Operating Rents."

Net Operating Revenue (Loss)
"Total Operating Revenue" minus "Total Operating Expense."

Net Auxiliary Operating Revenue
Net revenue from affiliated facilities and organizations rendering services other than provision of transit service.

Non-Operating Income
Net income from transit system facilities or operations not associated with providing transportation or transit service.

Gross Income (Deficit)
"Net Operating Revenue (Loss)" plus the sum of "Net Auxiliary Operating Revenue" and "Non-Operating Income."

Total Income Deductions
Interest and discount expenses, including interest on long-term obligations, and obligations associated with losses or defaults by parties contracting with the transit system.

Income Taxes
Amount of income taxes attributed to transit operations, including income tax reductions (negative adjustments) allowed on income tax obligations resulting from non-transit operations of a privately-owned company operating a transit system in addition to other businesses.

Ordinary Income (Deficit)
"Gross Income (Deficit)" minus the sum of "Total Income Deductions" and "Income Taxes."

Local Operating Assistance
Financial assistance for transit operations (not capital expenditures) which *originated* at the local government level.

State Operating Assistance
Financial assistance for transit operations (not capital expenditures) which *originated* at the state government level.

Federal Operating Assistance
Financial assistance for transit operations (not capital expenditures) which *originated* at the federal government level.

Total Operating Assistance
Sum of "Local Operating Assistance," "State Operating Assistance," and "Federal Operating Assistance."

Income (Deficit) Including Operating Assistance
"Ordinary Income (Deficit)" plus "Total Operating Assistance."

A Short History of Transit in the United States

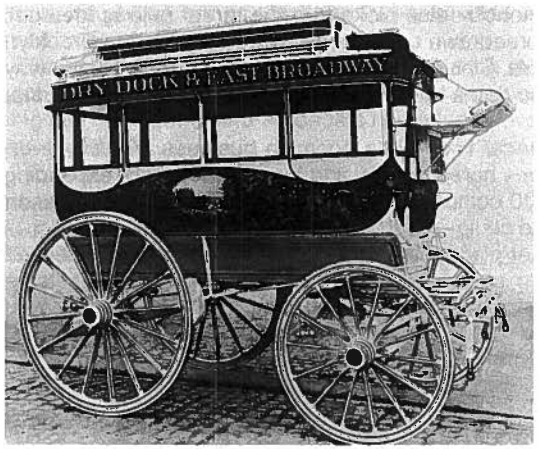
by Peter C. Weiglin, Assistant General Manager
Queen City Metro, Cincinnati, Ohio

Difficult as it is to believe today, there was a time when people lived their entire lives within walking distance of the place where they had been born, because their own feet were the only way to get around. Man's first efforts to improve his range of activity centered on the domestication of horses, mules, and other beasts of burden. Where there were waterways, they became the major transportation arteries as primitive rafts gave way to larger boats. Development of water transport was helped by the construction of canals; boats were faster and could carry more than land transport modes.

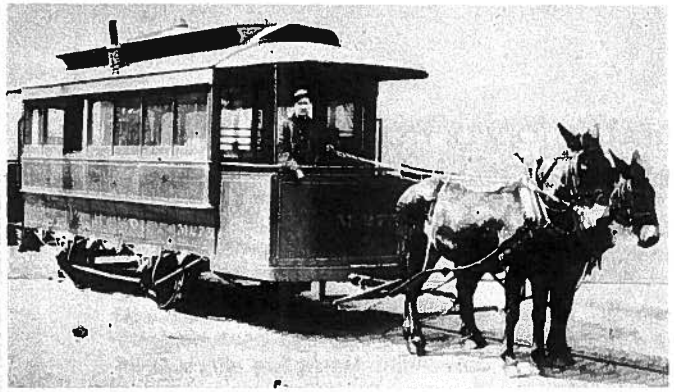
Land transport's first major innovation was the wheel, invented for the first time about 3,000 years ago. By combining animal power and the wheel, we could move ourselves and our goods at a rate faster than we could walk. This had a profound effect on the way we lived; the sizes of our settlements increased, and they moved farther inland from the waterways along which most of them had been founded. Improved mobility made possible the development of larger communities; the "edge of town" moved outward, slowly.

This expansion was retarded by economics. In order to take advantage of horses, with or without carriages, one had to be able to afford them—and relatively few people had that kind of money. The rest of us continued to walk. (Note that bicycles did not become popular in America until about 1880, when the first bikes were made in this country.)

Even as early as the 1820's, traffic congestion in lower New York caused problems: horses, carriages and pedestrians crowded the thoroughfares. In 1827, a man named Abraham Brower began operating a 12-passenger horse-drawn carriage on Broadway. The vehicle carried all who would ride, at a flat fare of one shilling. It was called an OMNIBUS, from the Latin word meaning, roughly,



Horse drawn omnibuses introduced public transportation to the United States. Abraham Brower, who had operated transit service in New York since 1827 with modified stage coach omnibuses, brought the first especially designed "Omnibus" to America in 1831. For a fare of twelve and one-half cents, anyone could ride up Broadway from the Battery to Bond Street.



Horse railway cars increased the speed of urban travel from 3 miles per hour to 4½. The two-mule car pictured here was operated by the Pittsburgh Railways Co., circa 1885. Fear of a recurrence of the horse-killing Great Epizootic intensified the search for non-animal motive power.

"for everyone." Soon, people shortened the name to "bus," but the idea caught on in many places, like Boston, where the fare from Boston to South Boston was 12½ cents.

The omnibuses caught on, and soon were operating on headways as short as 15 seconds. They were crowded . . . but listen to the Editor of the *New York Herald* for a moment . . . and remember that the omnibus ran on unpaved muddy streets.

> "Modern martyrdom may be succinctly defined as riding in a New York omnibus. The discomforts, inconveniences, and annoyances of a trip on one of these vehicles are almost intolerable. The bus combines more ugliness and discomfort than were ever crowded together in one vehicle. The driver quarrels with the passengers and the passengers quarrel with the driver. Ladies are disgusted, frightened and insulted. Children are alarmed and lift up their voices and weep. No unit of comfort was permitted to interfere with the grim realism of the vehicle; the omnibus rolls along, a perfect bedlam on wheels."

That was written in 1864.

Well, it became obvious that Something Had to Be Done. As we said, street paving was poor, and bouncing over the ruts was rough on the spine. But the railroads had solved that to some extent: the smoothest way to go was a steel wheel on steel rail. Why not lay tracks in the street for a smoother ride?

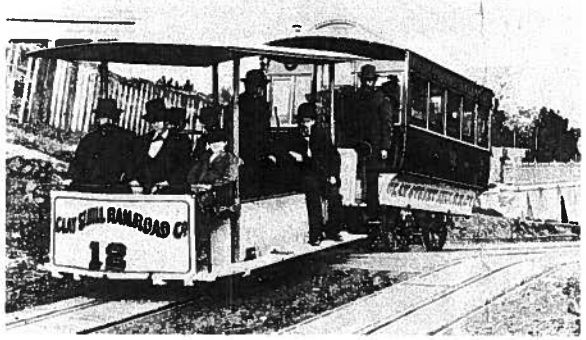
The credit for that technological innovation also belongs in New York, which saw the first street railway in 1832. This also improved system efficiency by increasing the average vehicle speed from 3 miles per hour to 4½, a 50% increase in speed.

Except for New Orleans, nobody else picked up the street railway idea until the 1850's. But by 1860, horsedrawn cars on rails were operating in Brooklyn, Boston, Baltimore, Philadelphia, Cincinnati, Pittsburgh, and Chicago. By the way, the first "free fare" promotion dates back to 1856, on the line between Boston and Cambridge.

The street railway or horsecar lines did a booming business. Virtually every city of any size had at least one horsecar line, and the systems were expanding. By 1890, there were over 700 companies operating more than 32,000 passenger cars—horse, electric, and cable—on 8,100 miles of track.

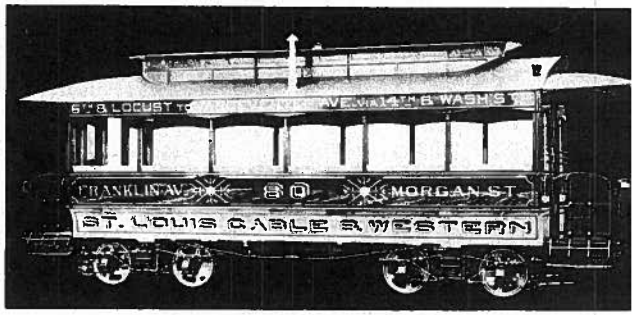
Fares were a nickel in most places, and the cost of operation was about 20 cents per vehicle mile. More and more people could move around faster at lower cost. And the cities grew as people found they could live farther away from where they worked.

But there were problems, most of them centering about the method of propulsion. The big technological debate among managers and consultants was between the horse and the mule. Mules lasted longer than horses, but the horse had a higher resale value at the end of his useful life.



The Clay St. Hill Railroad, San Francisco, California, was the first street cable car application: operations commenced in 1873. Andrew Hallidie, the inventor, is seated front center on the "gripper car" which towed the "trailer car" in both directions. Use of a separate car for locomotion was common practice in early street railway vehicles whether cable, steam, or electric.

The heyday of the cable car produced a series of car design features copied and improved in quick succession. Both car builder and car operator sought to impress the traveling public with exotic woods, stained glass, and ornate pin striping. Notice the shadow lettering on the car sides and elaborate decoration of the clerestory windows on the roof of this handsome St. Louis, Missouri, model newly varnished.



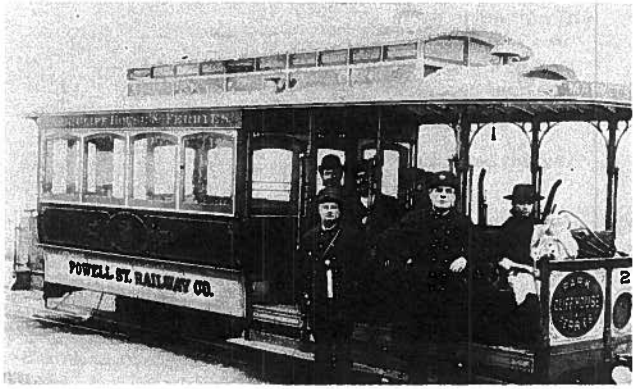
Another problem was the residue exhausted by the street railway's motive power. Many companies sold it to farmers, by the ton, for additional revenue. But while the tons were accumulating, the neighbors were complaining. And the streets weren't the cleanest places either—the fact is that a child who suffered a cut or laceration from falling in a city street was in danger of a fatal infection.

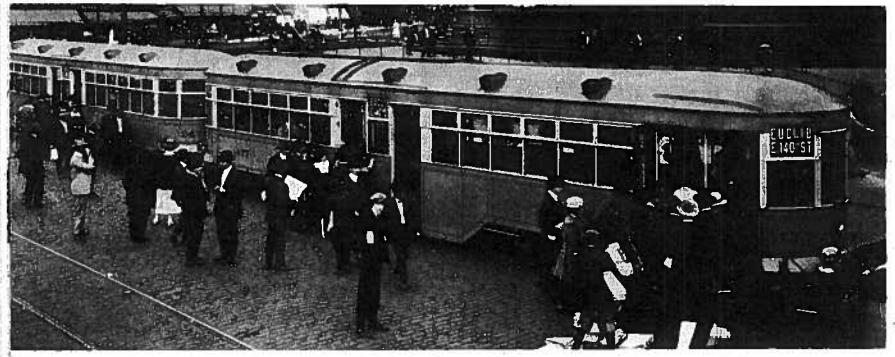
What really scared the street railway managers was the Great Epizootic of 1872. It was a severe and highly contagious flu that killed horses, all over the eastern part of the country. Think about more than half of a transit fleet suddenly out of action, and you get an idea of how serious the Great Epizootic was.

In some places, gangs of laborers were hired to pull the cars until new horses could be bought and trained.

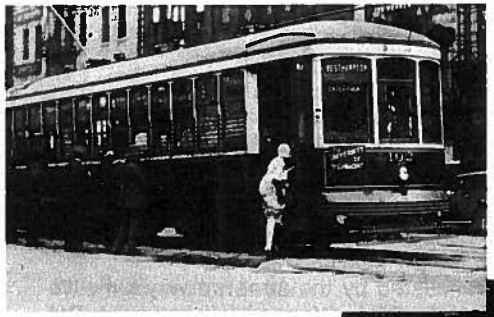
The possibility that something so devastating might happen again started a number of people thinking about other ways to propel street railway cars. Something had to be done, and America's talent for innovation came up with many different methods.

The Ferries and Cliff House Railway Co., which began operation in 1888, often labeled their cable cars "Powell St. Railway Co." to stress service of the prestigious Nob Hill district. Similar cars are now operated on the Powell Street line by the San Francisco Municipal Railway.

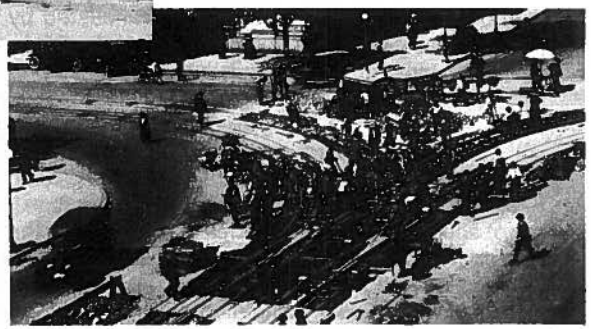




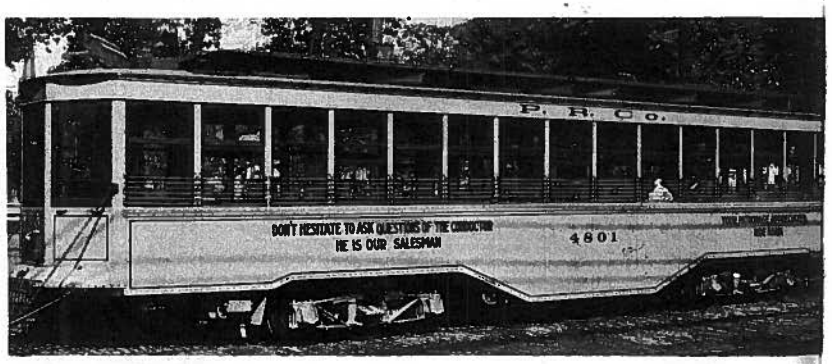
A Cleveland Railway "Peter Witt" car with trailer (above) loads outbound rush hour passengers at Public Square in downtown Cleveland, Ohio. Fast, reliable electric transportation resulted in the growth of "streetcar suburbs," precursors of contemporary suburban sprawl.



A passenger bound for the University of Richmond (left) boards a double-truck "safety" car operated by the Virginia Electric and Power Company. Richmond was the site of the first commercially successful electric street railway in the United States. Designed by Frank J. Sprague, cars of the Union Passenger Railway began regular service in 1888, about 40 years before this photo was taken.



"Special work," complex trackwork at cross-overs and junctions, was one factor in the high capital and maintenance costs of street railways. A double track junction (right) is being installed at the corner of Pennsylvania Avenue and Fifteenth Street, N.W., in Washington, D.C. Streetcars in central Washington drew current from underground conduit rather than from overhead wires. The Pittsburgh Railways Co. emphasized customer service with sales and courtesy slogans on this streetcar (below).



The steam locomotive, like that used on the railroads, was prohibited by many street railway franchises, because the noise scared horses, and people. So they were disguised to look like streetcars, and muffled . . . which is why they became known as "steam dummies." But they weren't successful on the streets.

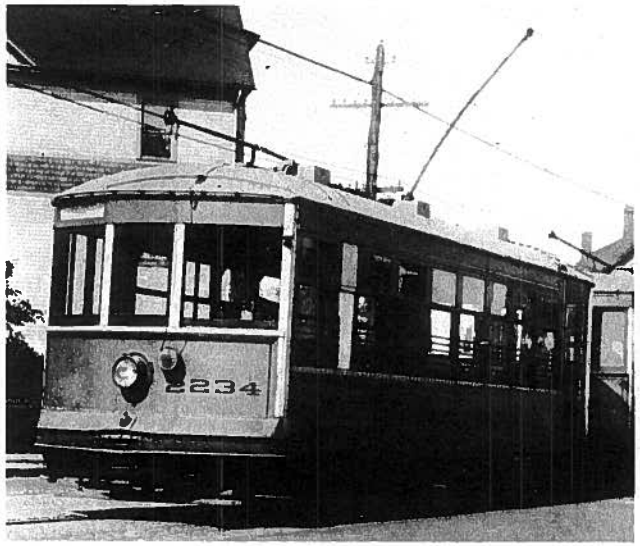
Other inventors tried compressed air, dry ice, ammonia, primitive internal combustion engines; they were heavily promoted as the new technology, tested and forgotten soon after because they either broke down often, or cost too much to buy and operate. Some far-out inventors were even tinkering with magnetism and ethereal waves, but that showed no real promise in the 1870's.

One approach that did seem to make sense was using proven technology—the steam engine—in a fixed location, and transmitting its energy to the vehicles somehow.

The idea of using a moving chain or cable to do that traces back to about 1830, but the first cable railway in America didn't come until later. Everybody knows where that was, right? Of course . . . New York, in 1868. It was also America's first elevated railway, which we'll cover later. The line went bankrupt within three years.

Some years later, a man named Andrew Hallidie began considering the problem in San Francisco. Hallidie was a manufacturer of wire rope-steel cables, and the business of supplying cables to gold mines was falling off. In search of a new use for his product, he figured that a stationary steam engine (proven technology) could be used to drive a moving cable (his product) underneath the street. A grip mechanism on each car would engage or let go of the moving cable at the discretion of the operator.

The first successful cable line was on Clay Street Hill in San Francisco in 1873. It proved to be the solution for getting any kind of vehicle at all up a hill that steep.



The Birney "Safety" Car permitted a single operator to perform the duties formerly requiring both a motorman and a conductor. Transit systems large and small, including The Connecticut Company pictured here, assigned four-wheel (single-truck) Birneys to lightly patronized routes.

But if you think the cable car was used only on hills, you're wrong. San Francisco had the most trackage, but the heaviest traffic and most cars were in Chicago, where hills aren't that much of a problem.

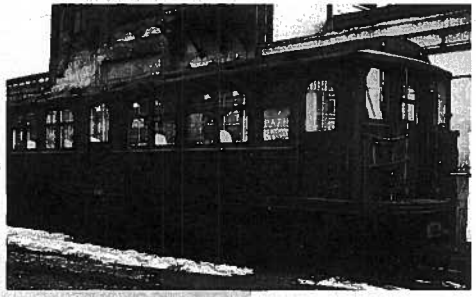
The third ranked city for cable cars was Kansas City and there are hills there. All in all, cable cars operated in 29 American cities, and more than $125 million was invested in them. The lines were built between 1873 and 1893, and virtually all of them were gone by 1904, a very short life for that large a capital investment in fixed guideways.

The incredible inefficiency of the cable technology is reflected by this fact; 70% of the power plant's energy was used to move the cable alone; only 25% for the cars and 5% to move the passengers, assuming capacity ridership.

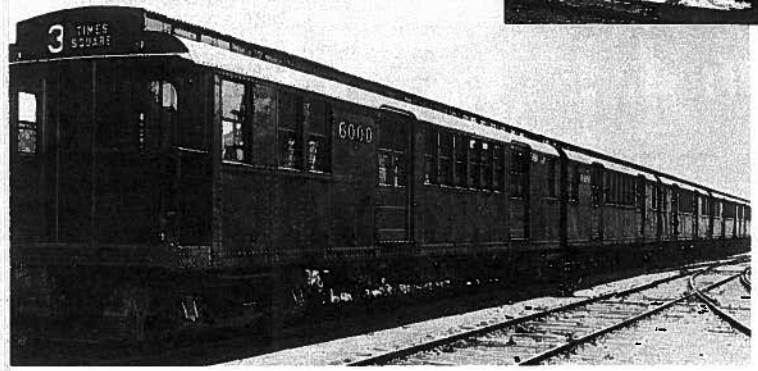
Why were cable lines built at all? Because the cable provided higher capacities and, more important, higher speeds. Up to 15 mph. It was the best technology available at the time. In fact, George W. Hilton of UCLA has pinpointed the exact date when cable railways became obsolete. It was February 20, 1888, the day that a young ex-naval officer named Frank J. Sprague demonstrated the first reliable electric street car system in Richmond, Virginia. Magnetism and etheral waves had been harnessed, and the rush to electrify was on.

But before going into that, let's pick up a significant event from 1882. It was just about the highwater mark for horsecars, and the beginning of the large wave of cable line construction. In 1882, a small group of street railway managers met in a Boston hotel and formed the American Street Railway Association, to interchange information for the common good of all member companies. That was the beginning of what we know today as the American Public Transit Association.

That Association helped to spread the word about the new technology. The horsecar cost about 20 cents per car mile to operate, cables about 15 cents, and electrics about 10 cents per car mile. By 1900, the horsecars and cablecars were almost all gone—the electric car had taken over.



Port Authority Trans-Hudson Corporation Car No. 256 (right) is pictured shortly before its retirement in 1965. The car, acquired with PATH acquisition of the Hudson and Manhattan Railroad, represented contemporary rail car design when built in 1909.



Two Brooklyn-Manhattan Transit three-section articulated subway units (left) posed for this photo before entering service. The BMT became part of the New York City Transit Authority in 1940.

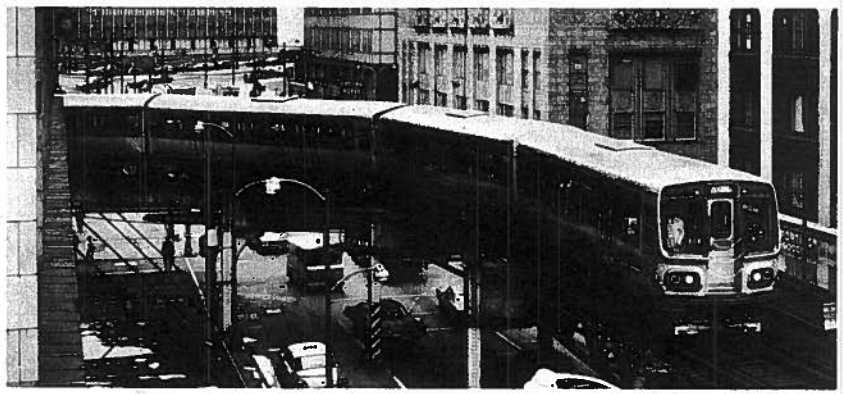
Now there had been other electric lines before 1888, notably in Baltimore, Denver, Cleveland, Pittsburgh, and Montgomery. But Richmond's was the first successful, reliable system, arrived at after a three-month period of de-bugging... and frustration.

But it worked in Richmond, and others came to see, notably Henry Whitney of Boston, where management was trying to decide between cable and electric. Whitney went back to Boston and scrapped the cable plans—they went for the electric "trolley," as did everyone else.

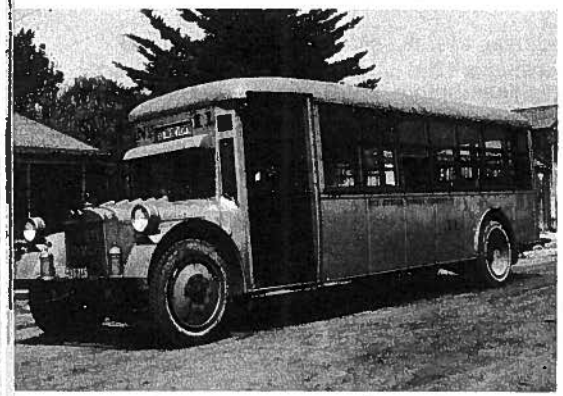
Remember this: In 1880 there were only 20 cities with populations larger than 100,000 people. By 1910, there were 50. By 1917, half of America's people lived in our cities. Urbanization was happening even then.

The street railway was as much the reason for this urbanization as it was a beneficiary. With horsecars, about 4 miles from downtown was the limit of growth. The cable cars improved that somewhat, but the faster electric cars changed the face—and nature—of American cities, by allowing people to distribute themselves over wider areas. That distribution was facilitated by real estate promoters who bought farmland, arranged for electric trolley service, and made fortunes on the resulting land development.

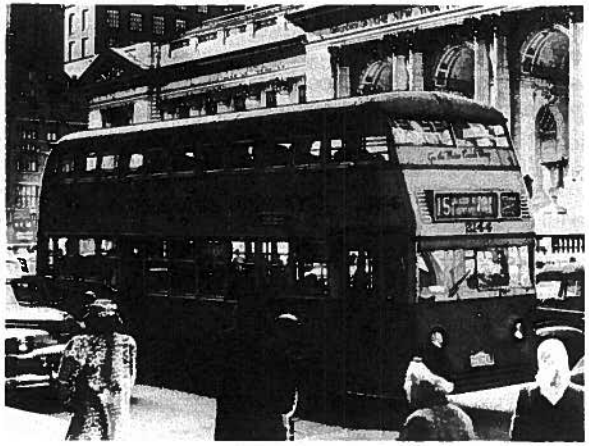
So the transit systems of America not only kept pace with urban growth—they created and made possible that urban growth. They also consolidated into larger companies which replaced the small one-route companies of horsecar days. The amalgamation record is held by Pittsburgh Railways which had more than 100 subsidiaries and underlying companies. The consolidated lines were able to put together a more flexible product city-wide—and to make a larger profit. Routes were extended, service was added, and more people rode. Conditions remained crowded. At a stockholder's meeting in Chicago, Charles Tyson



Chicago's South Side Elevated railroad replaced steam powered trains with electrically powered, multiple-unit control elevated trains in 1895. MU connections between cars permit the vehicle operator to control several cars from a single controller at the front end of the train. A Chicago Transit Authority multiple-unit "el" train is pictured on "the loop," turning from Lake Street onto Wabash in 1972. "The loop" elevated structure was constructed in 1897 to connect several CTA predecessors including the South Side Elevated.



The earliest motor buses utilized motor truck frames modified to carry passenger components. Poor riding quality, high centers of gravity, and low performance engines made converted motor trucks unsatisfactory for transit use. The Fageol Safety Coach, built by Frank and William Fageol in 1920, was the first bus with a lower center of gravity, better springs, and more powerful engine than contemporary trucks. This Fageol Safety Coach was operated by the Key System Transit Company in Oakland, California.



Fifth Avenue Coach Company, first motor bus operator in the United States, used double-deck buses in New York for over 50 years. No. 2144, built in 1938 by Yellow Coach, carried 72 seated passengers, no standees permitted. Double-deck buses were retired in 1953 due to high costs of two-man crews, slow loading times, and decreased patronage.

Yerkes answered a complaint about crowded cars by saying, "It's the strap hangers that pay ye yer big dividends." Some aspects of that revenue/cost relationship haven't changed much at all, even though the industry's attitude has.

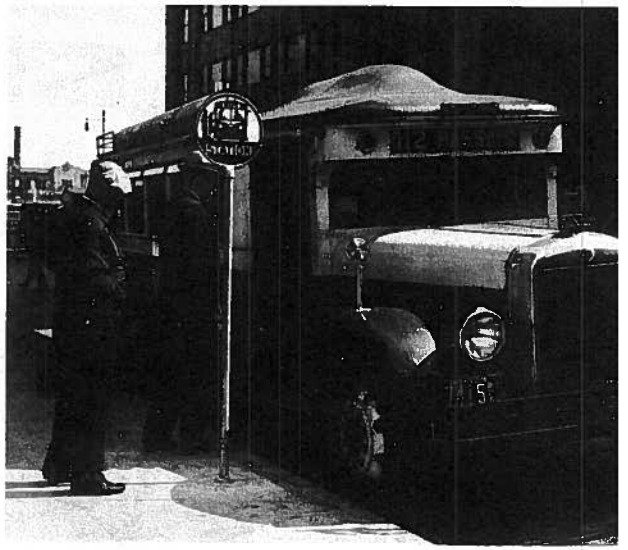
While the trackage was being expanded, manufacturers and traction company people were busy improving the vehicles. The first electric cars had been short four-wheelers—little more than horse or cable car designs modified to accept the electric motors. As passenger traffic increased, more cars were added.

But something else was increasing too—wages of motormen and conductors. Electricity could be used to propel a larger car, which could carry more passengers at the same labor cost as a small car. Larger cars, on two trucks, began to appear very soon, to increase productivity.

In 1916, the small car re-appeared. It was a lightweight car designed to be run by one man instead of a two-man crew. It was known as a safety car, but it was also named for its designer, Charles Birney. The small car was back in business, and thousands of these safety cars were built. Before long, there was a lightweight double-truck car, too.

Many senior citizens remember a real old timer: the open or "summer car," operated by many companies. They were pleasant . . . but except in the tropics, they sat idle during the winters. Most of them were gone by the thirties although

The disappearance of tracks laid in the street and wires hanging in the air—two obvious landmarks of a streetcar line—forced development of improved passenger information devices. Notice the bus stop sign depicting passengers boarding at the curb while the Public Service Coordinated Transport motor bus displays its assigned route number for ease of identification by prospective passengers in New Jersey.



a few survived in Connecticut to take football fans to the Yale Bowl until 1948. They could handle the crowds.

California compromised: The cars were half closed, half open, year round. It was more complicated, but it pleased the passengers.

The electric railways reached their peak in 1918 at the close of World War I. Smaller, unprofitable lines were abandoned as costs rose in the post-war period. Other lines converted to primitive motor coaches. Ridership peaked in 1923, and then began heading downward.

Why? The horsecar lines and their descendants had given group mobility to those people who could not afford carriages. Now, more people were able to afford a new kind of carriage . . . the automobile.

Automobiles had been around since before the turn of the century, but it was not until the late 'teens and twenties that prices came within reach of people who were less than very rich—and not until then that paved highways made the automobile easier to use.

Here was a new and formidable competitor—subsidized by tax funds. In 1900, 8,000 passenger autos were registered in the United States. By 1925, that figure had grown to 17½ million . . . with most of the growth after 1915. All of those autos competed for street space with the trolley cars, which lowered schedule speeds—making transit less attractive. It's a vicious cycle.

But where transit vehicles could run on exclusive rights-of-way, higher speeds could be attained. New York had begun to suffer from congestion as far back as the horsecar days. Here's our newspaper editor friend again:

> "Something more than streetcars and omnibuses is needed to supply the popular demand for city conveyance. The cars are quieter than the omnibuses, but much more crowded. People are packed into them like sardines in a box, with perspiration for oil."

As was mentioned above, the first elevated line in America was Charles Harvey's 1868 cable line in New York. It was built, and ceremonially demonstrated—but it failed, or legal and political reasons.

Steam powered "el" trains began running in New York in the 1870's; Chicago followed in 1892, Boston in 1899. The steam locomotives were replaced by electric propulsion in the 1890's when a method of controlling more than one

Large monocoque-construction (integral body and chassis) transit buses are produced currently by three United States manufacturers. Coach No. 642 (top) was built for the Denver Regional Transit District by AM General Corporation in 1975. This 47-seat diesel coach is 40 feet long and 102 inches wide, the maximum bus size permitted in most states. Iowa City Transit Coach No. 7 (center) is a 35-foot, 45 seater built by General Motors Corporation, GMC Truck and Coach Division in 1972. The unnumbered Flxible Co. coach (bottom) is a 40-foot, 50-seat bus manufactured for the Cleveland Transit System in 1971.

car from one position was developed by Frank J. Sprague, the man who had put the Richmond system together. El's also were built in Philadelphia and Brooklyn—and that was just about it until the 1960's.

The elevateds—early aerial guideways—went up above the traffic. The other direction, downward, was less popular. Subways weren't practical because of smoke from locomotives, but London built one anyway in 1863.

In America, there were many early subway schemes; the first experiment was a pneumatic device—the car was blown through a close-fitting tunnel in New York. That was in 1870, but the elevateds were doing the job pretty well, and the subway idea died.

The revival of interest in subways was in Boston; in 1897 the first real subway in America opened. It handled more than 50 million passengers in its first year of operation. Getting the streetcars off the streets was a popular idea.

Not one, but two subways were being built in the New York area about that time. The most ambitious engineering project was the Hudson Tubes, twin tunnels under the Hudson River.

The second New York subway was the Interborough Rapid Transit. It opened in 1904 and was carrying capacity rush hour ridership within six months. New York's famous rush hours have been there since the beginning. Philadelphia and Chicago followed not long after, but subway projects in other cities failed to materialize—the tremendous number of consultants' reports and plans were never acted upon. Cleveland's "rapid" was finished in the 1950's, and Los Angeles had its short "subway" from 1923-1941, but Cincinnati's interurban tunnel remained unused.

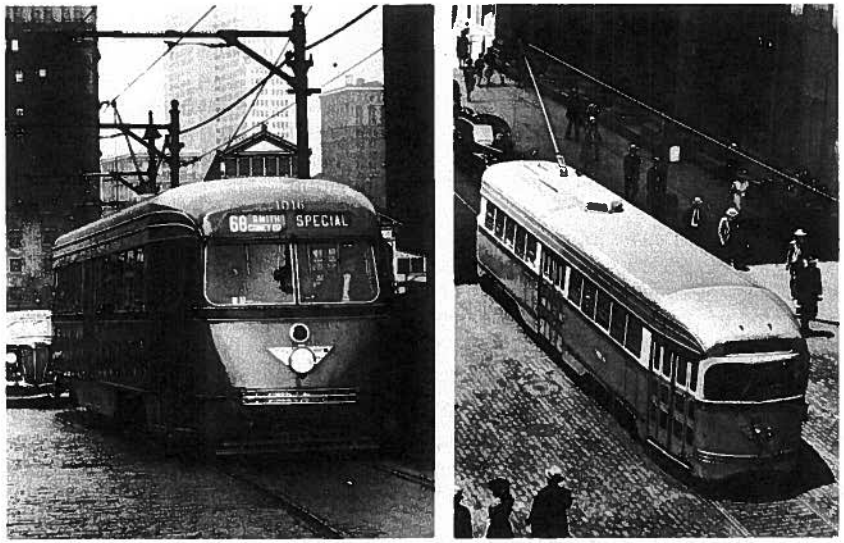
BART, which is more a commuter railroad than an urban subway, opened in 1973; San Francisco's Muni Metro also will operate through this newest underground right of way. Washington's subway is under construction—but comparatively few cities have seen anything of this magnitude.

For most of us, transit means the motorized reincarnation of an old friend—the omnibus. Getting away from tracks in the streets was desirable because of traffic and costs. Transit companies couldn't afford to build, operate and maintain the capital investment in track, overhead, and cars: the motor bus—or in better circles, motor coach—is less expensive. It was better able to follow urban development, which began to sprawl, thanks to the automobile.

The rubber-tired coach also meant excape from street railway franchise provisions: requiring the transit company to pay for paving all or part of the street. In

Contemporary trolley coaches similar to this one operating in Canada have been ordered from Flyer Industries by the Miami Valley Regional Transit Authority, Dayton, Ohio; the Massachusetts Bay Transportation Authority, Boston, Massachusetts; and the San Francisco Municipal Railway, San Francisco, California. These modern vehicles are the first new trolley coaches, other than demonstrators, ordered by U.S. transit systems since 1955.

Electric rubber-tired trolley coaches (trackless trolleys) solved a common problem of many street railway companies which desired to remove deteriorated, expensive-to-maintain tracks while retaining inexpensive electricity to power vehicles. San Francisco Municipal Railway Coach No. 521 was delivered in 1947 by the St. Louis Car Co. during the peak period of trolley coach construction; between 1930 and 1952 over 8,000 trolley coaches were delivered to U.S. transit systems.



The Electric Railway Presidents' Conference Committee (PCC) streetcar, developed by a special committee of the American Electric Railway Association—a predecessor of the American Public Transit Association, was a bold attempt to bring passengers back to street railways. Two early PCC cars are pictured above, a Brooklyn & Queens Transit Corporation car (left) from the first PCC order delivered in 1936 and a Philadelphia Transportation Company car (right). So successful were its technical innovations that, through 1976, over 16,000 cars based on the PCC design had been produced in the United States, Belgium, Czechoslovakia, Poland, and many other countries.

Ridership increases prior to and during World War II translated into more intensified use of transit vehicles and forced transit systems to actively seek employees from a war-depleted labor force. The Los Angeles Railway recruited "Trolley Pilots" with a PCC car dubbed the "Flying Tiger Trolley." Between 1940 and 1946 transit ridership in the U.S. doubled to over 23 billion passengers per year.

the past, city governments exacted large monetary tributes from the railways for the privilege to operate. As the companies' financial health deteriorated, they could no longer cope with these rising costs. The bus allowed competition with the auto on its own terms.

The Cleveland Railway was the first street railway to operate motor buses, in 1912. In many other cities, jitneys began operating—private auto owners stealing the cream of transit ridership.

As early as the American Electric Railway Association convention of 1922, the new topic was coordination of rail and bus modes to provide full transit service. In 1922, some 50 companies were operating about 400 coaches. By 1930, there were more than 13,000 motor coaches in operation. San Antonio became the first large American city to completely convert to buses, in 1933.

A hybrid vehicle also made its appearance in the 1930's—the trackless trolley, or trolley coach. About 1930, the idea of trolleys without tracks caught on in Salt Lake City, Chicago and Newark. Trolley coaches ultimately operated in about 30 cities.

In the United States, five cities still use trolley coaches—Philadelphia, Boston, Dayton, San Francisco and Seattle.

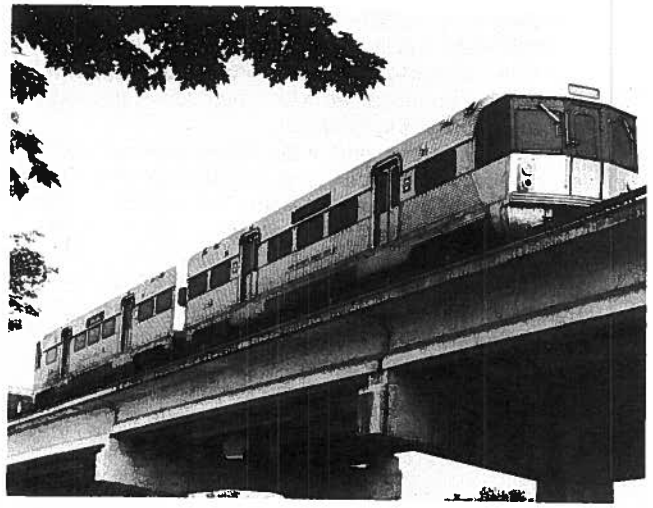
Almost all of the technological advances in transit were caused by a desire to reduce costs. One project, however, was specifically undertaken to recapture some ridership; the goal was nothing less than a revolutionary street car. Leadership by the industry came through the American Electric Railway Association. In 1929 the meetings began—the Electric Railway Presidents' Conference Committee (PCC) was formed. A sample car was completed by 1934, and the first production line models were bought by Brooklyn, New York, in 1935. This was the "million dollar street car," the PCC car, and it did cause some upswing in ridership.

The innovations of the PCC are still included in railcars all over the world. PCC's long since retired in United States cities are still running elsewhere, notably in Toronto and Mexico City.

The PCC arrived just in time for World War II. With gasoline rationed and no new automobiles being manufactured, people turned to transit in droves. The war effort was a time of hard work for transit people as ridership mushroomed.

But from 1946 through the sixties, the transit industry was a downhill ride. People took to their autos—the carriages they could now afford—in greater

The Port Authority Transit Corporation "Hi-Speed Line," opened in 1969, has 75-mph speeds over ten miles of track permitting trains to operate the 14.4-mile route in 22½ minutes, an average speed of nearly 40 mph overall including ten intermediate station stops. Heading eastbound toward Lindenwold, a PATCO local train is pictured here leaving Collingswood, New Jersey, seven stations and 14½ minutes from downtown Philadelphia.



The San Francisco Bay Area Rapid Transit, second entirely new post-World War II United States heavy rail transit system, was completed in 1974 (Cleveland, Ohio, began full rapid transit operation in 1955) and provides levels of passenger comfort, speed, and safety famous throughout the world. BART trains, such as this one en route to downtown Oakland, California, connect East Bay communities with downtown San Francisco. New heavy rail rapid transit systems are now under construction in three U.S. cities: Washington, D.C. (opening scheduled during 1976); Baltimore, Maryland; and Atlanta, Georgia.

numbers. We really didn't need transit, did we? Oh, except for those social unfortunates who somehow couldn't share in the American automotive dream.

There was and is only one flaw in that argument: more and more autos means lowered quality of life for people. Our living space, our energy resources, our atmosphere—all are consumed by the auto.

Faced with declining ridership and increasing costs, private investment capital withdrew from transit, leaving behind the remnants of once-extensive systems. The private companies had no other choice—the return on investment wasn't there. It's no coincidence that the termination days coincided with expiration of a then current union contract. If public transit was to be maintained, something would have to be done . . . and that something was public ownership.

Some transit systems had been municipally owned for many years, but the real transition came during the late 1960's and early '70's. The private transit company is today all but extinct.

What made this large scale transition possible was the Urban Mass Transportation Act of 1964 . . . and its amendments, which provide financial assistance to the local communities which purchased the assets of the private companies and modernized the systems.

Public ownership and public funds were not by themselves the solution, however. What has happened is a realization that public transit is necessary to a better quality of urban life—and the revitalized transit systems are once again becoming more attractive as an alternative to the less affordable "carriages."

The word "alternative" is important here: the rebirth of transit has come by consciously attracting passengers who have a choice—improving and selling transit service to a point where people prefer to use it. Ridership has begun to increase again, in 1974 and 1975, a welcome turnaround. The industry is now bending its efforts to continuing that up trend.

Transit is emerging from the stepchild status into which it had fallen. Abraham Brower's 1827 idea is an even better one today.

The United States Transit Industry in 1975

Number of Operating Transit Systems (December 31, 1975)

Combined Heavy Rail, Light Rail, Trolley Coach, and Motor Bus	2
Combined Heavy Rail, Light Rail, and Motor Bus	1
Combined Light Rail, Trolley Coach, Cable Car, and Motor Bus	1
Combined Light Rail, Inclined Plane, and Motor Bus	1
Combined Heavy Rail and Motor Bus	2
Combined Light Rail and Motor Bus	2
Combined Trolley Coach and Motor Bus	2
Combined Inclined Plane and Motor Bus	1
Combined Ferry Boat and Motor Bus	1
Heavy Rail Only	4
Light Rail Only	1
Personal Rapid Transit (PRT) Only	1
Motor Bus Only	928
Total Operating Transit Systems	947

Passenger Vehicles Owned and Leased (First Week of September, 1975)

Heavy Rail Cars	9,608
Light Rail Cars	1,061
Trolley Coaches	703
Cable Cars	39
Inclined Plane Cars	4
Personal Rapid Transit (PRT) Cars	45
Motor Buses	50,811
Total Passenger Vehicles Owned and Leased	62,271

Passenger Revenue (Millions) — 1975

Heavy Rail	$ 504.3
Light Rail	28.1
Trolley Coach	15.4
Motor Bus	1,310.1
Total Passenger Revenue (a)	$1,860.5

Total Operating Revenue (Millions) — 1975

Heavy Rail	$ 517.1
Light Rail	28.9
Trolley Coach	15.9
Motor Bus	1,437.7
Total Operating Revenue (a)	$2,002.4

Revenue Passengers (Millions) — 1975

Heavy Rail	1,384.7
Light Rail	93.7
Trolley Coach	55.8
Motor Bus	4,080.9
Total Revenue Passengers (a)	5,625.8

Total Passengers (Millions) — 1975

Heavy Rail	1,668.0
Light Rail	123.0
Trolley Coach	78.0
Motor Bus	5,068.0
Total Passengers (a)	6,950.0

Vehicle Miles Operated (Millions) — 1975

Heavy Rail	423.1
Light Rail	23.8
Trolley Coach	14.3
Motor Buses	1,528.0
Total Vehicle Miles Operated (a)	1,989.7

Energy Consumed (Millions) — 1975

Diesel Fuel (Gallons)	365.1
Gasoline (Gallons)	5.0
Propane (Gallons)	2.6
Electricity (Kilowatt Hours)	2,646.0

(a) Includes Cable Car and Inclined Plane

TABLE 1

Transit Systems Classified by Vehicle Type and Population Group

POPULATION OF URBANIZED AREA	ALL-RAIL SYSTEMS (a)	MULTI-MODE SYSTEMS (b)	ALL-BUS SYSTEMS	TOTAL SYSTEMS
500,000 and greater	5	12	367	384
250,000 to 500,000	0	0	60	60
100,000 to 250,000	0	1	114	115
50,000 to 100,000	0	0	69	69
Less than 50,000 (b)	1	0	318	319
Total U.S. Transit Systems	6	13	928	947

(a) Includes transit systems operating one of the following modes exclusively: heavy rail, light rail, or personal rapid transit (PRT).

(b) Includes transit systems operating two or more of the following modes: heavy rail, light rail, trolley coach, motor bus, cable car, inclined plane, and ferry boat.

(c) Population of urban place with less than 50,000 population outside an urbanized area.

TABLE 2

Publicly Owned Transit Systems

	CALENDAR YEAR 1975 (P)	PERCENT OF INDUSTRY TOTAL
Number of Systems (December 31, 1975)	333	35%
Operating Revenue (Millions)	$1,729	86
Vehicle Miles Operated (Millions)	1,706	86
Revenue Passengers Carried (Millions)	5,090	90
Number of Employees	138,212	86
Passenger Vehicles Operated (Total)	51,964	83
Motor Buses	40,583	80
Heavy Rail Cars	9,608	100
Light Rail Cars	982	93
Trolley Coaches	703	100

P = Preliminary

TABLE 3

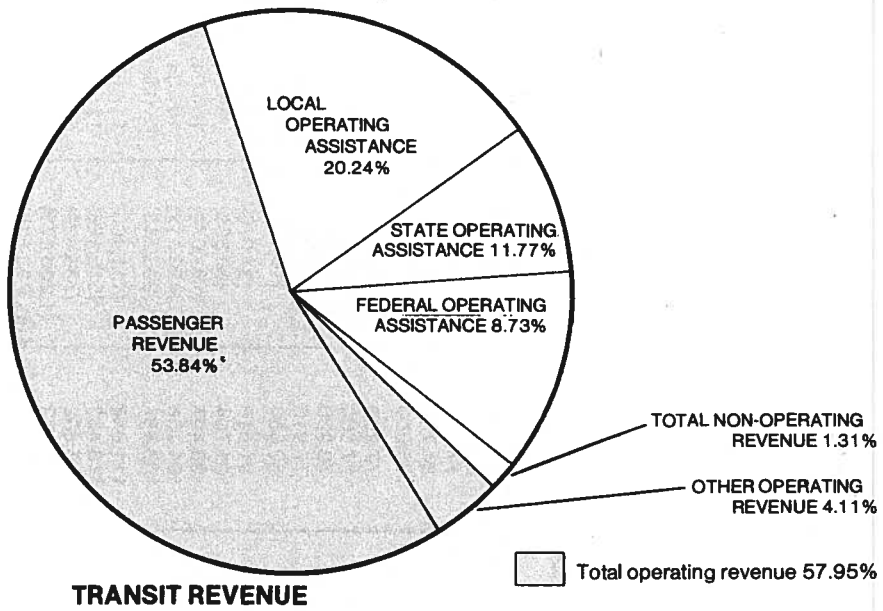
Transit Industry Income Statement for 1975 (P)

Passenger Revenue	$ 1,860,492,000
Other Operating Revenue	141,878,000
Total Operating Revenue	$ 2,002,370,000
Maintenance and Garage Expense	$ 775,014,000
Transportation Expense (Including Station and Fuel Expense)	1,785,792,000
Traffic, Solicitation, and Advertising Expense	66,026,000
Administrative and General Expense (Including Insurance and Safety Expense)	739,455,000
Depreciation and Amortization	120,977,000
Operating Taxes and Licenses	171,022,000
Net Operating Rents	47,604,000
Total Operating Expense	$ 3,705,896,000
Net Operating Revenue (Loss)	$ (1,703,526,000)
Net Auxiliary Operating Revenue	$ 1,006,000
Non-Operating Income	39,558,000
Gross Income (Deficit)	$ (1,662,962,000)
Total Income Deductions	$ 51,676,000
Income Taxes	(5,050,000)
Ordinary Income (Deficit)	$ (1,709,588,000)
Local Operating Assistance	$ 699,438,000
State Operating Assistance	409,625,000
Federal Operating Assistance	301,753,000
Total Operating Assistance	$ 1,407,816,000
Income (Deficit) Including Operating Assistance	$ (301,772,000)

P = Preliminary

FIGURE I

Transit Industry Revenue and Expense in 1975



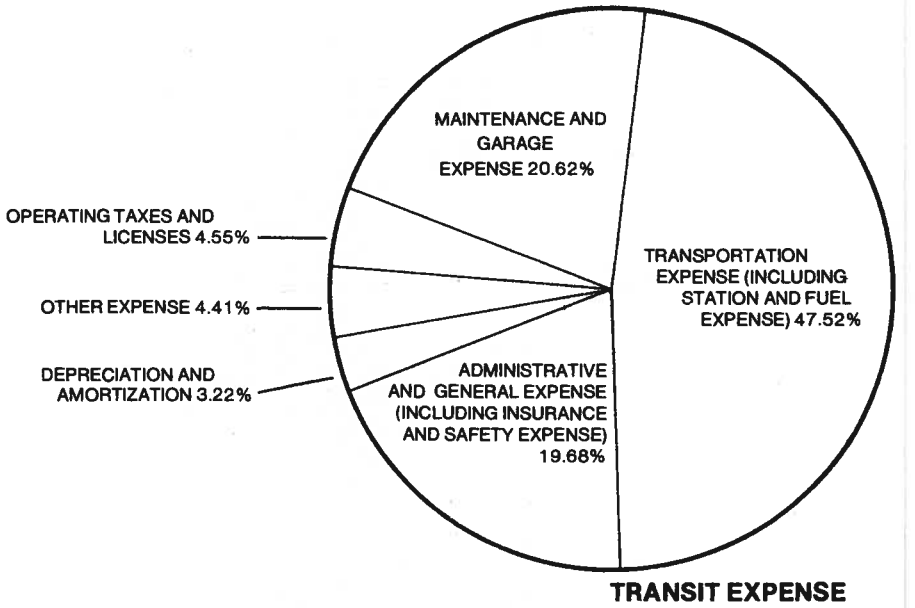


TABLE 4

Trend of Transit Operations

CALENDAR YEAR	OPERATING REVENUE	OPERATING EXPENSE Excluding Taxes	NET OPERATING REVENUE (LOSS) Before Taxes	ALL TAXES	NET OPERATING REVENUE (LOSS) After Taxes	PERCENT OF OPERATING REVENUE	
						OPERATING EXPENSE Excluding Taxes	ALL TAXES
	(THOUSANDS)	(THOUSANDS)	(THOUSANDS)	(THOUSANDS)	(THOUSANDS)		
1940	$ 737,000	$ 598,030	$ 138,970	$ 62,690	$ 76,280	81.14%	8.51%
1945	1,380,400	1,067,140	313,260	164,530	148,730	77.31	11.92
1950	1,452,100	1,296,690	155,410	89,040	66,370	89.30	6.13
1955	1,426,400	1,277,370	149,030	.93,320	55,710	89.55	6.54
1956	1,416,100	1,271,360	144,740	89,050	55,690	89.78	6.29
1957	1,385,600	1,261,560	124,040	87,430	36,610	91.05	6.31
1958	1,349,500	1,265,850	83,650	77,060	6,590	93.80	5.71
1959	1,376,400	1,266,080	110,320	84,700	25,620	91.99	6.15
1960	1,407,200	1,289,850	117,350	86,660	30,690	91.66	6.16
1961	1,389,700	1,295,770	93,930	77,200	16,730	93.24	5.56
1962	1,403,500	1,306,000	97,500	77,800	19,700	93.05	5.54
1963	1,390,600	1,312,560	78,040	78,920	(880)	94.39	5.68
1964	1,408,100	1,342,580	65,520	77,910	(12,390)	95.35	5.53
1965	1,443,800	1,373,760	70,040	80,650	(10,610)	95.15	5.59
1966	1,478,500	1,423,760	54,740	91,810	(37,070)	96.30	6.21
1967	1,556,000	1,530,864	25,136	91,704	(66,568)	98.38	5.89
1968	1,562,739	1,625,314	(62,575)	98,497	(161,072)	104.04	6.37
1969	1,625,633	1,744,989	(119,356)	101,156	(220,512)	107.34	6.22
1970	1,707,418	1,891,743	(184,325)	103,887	(288,212)	110.80	6.08
1971	1,740,700	2,040,453	(299,753)	111,647	(411,400)	117.20	6.42
1972	1,728,500	2,128,193	(399,693)	113,433	(513,126)	123.12	6.56
1973	1,797,640	2,419,837	(622,197)	116,302	(738,499)	134.61	6.47
1974	1,939,700	3,102,411	(1,162,711)	136,962	(1,299,673)	159.94	7.06
P 1975	2,002,370	3,534,874	(1,532,504)	171,022	(1,703,526)	179.54	8.54

P = Preliminary

FIGURE II

Results of Transit Operations 1940-1975

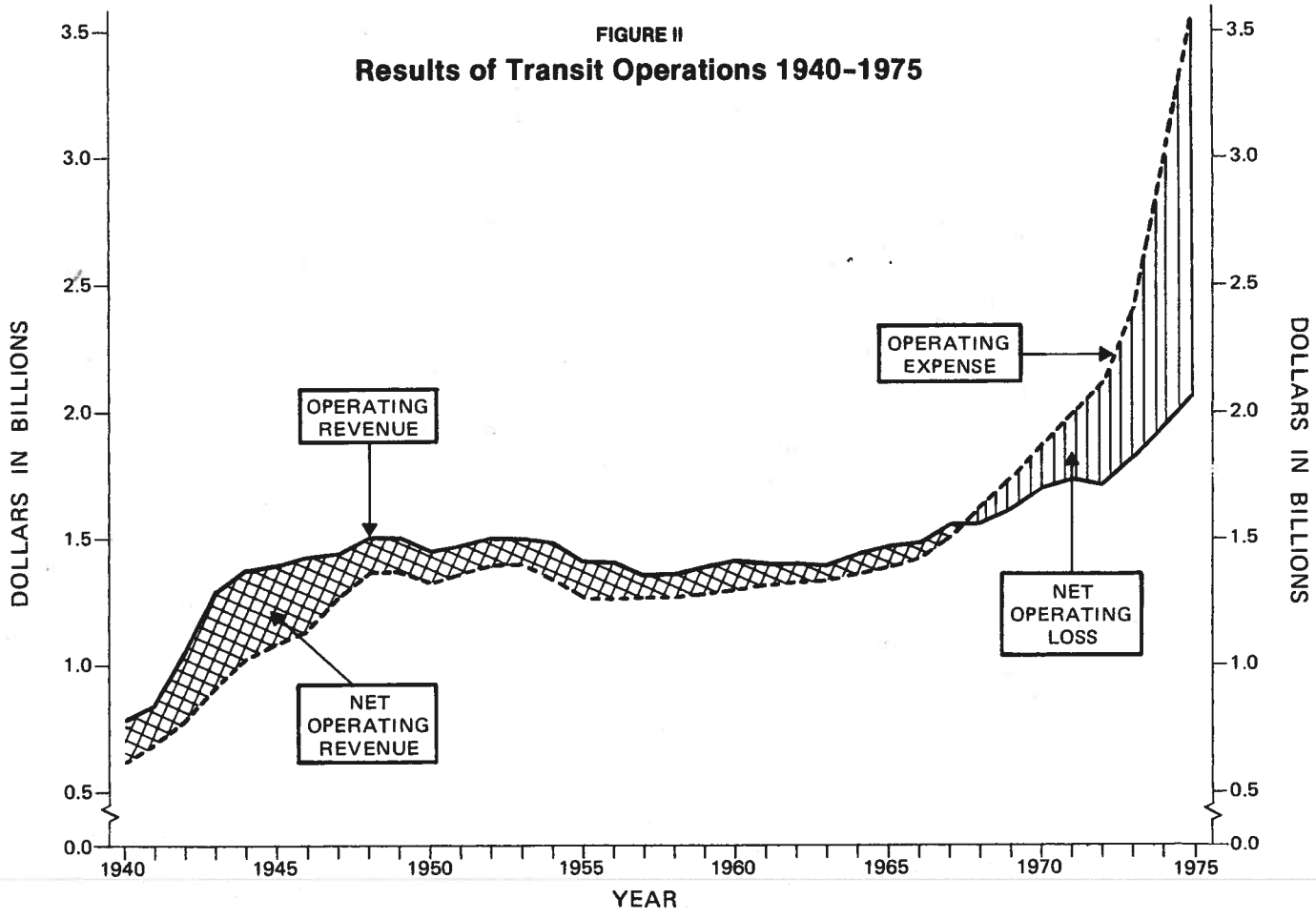


TABLE 5

Revenue Passengers Classified by Population Groups

CALENDAR YEAR	HEAVY RAIL	SURFACE LINES						TOTAL REVENUE PASSENGERS
		500,000 AND OVER	250,000-500,000	100,000-250,000	50,000-100,000	LESS THAN 50,000	SUBURBAN AND OTHER	
	(MILLIONS)	(MILLIONS)	(MILLIONS)	(MILLIONS)	(MILLIONS)	(MILLIONS)	(MILLIONS)	(MILLIONS)
1940	2,282	4,305	1,312	1,020	742	291	552	10,504
1945	2,555	6,969	2,920	2,359	1,899	932	1,348	18,982
1950	2,113	5,207	2,007	1,585	1,323	728	882	13,845
1955 (a)	1,741	3,478	1,286	953	786	360	585	9,189
1956 (a)	1,749	3,368	1,179	866	715	324	555	8,756
1957 (a)	1,706	3,274	1,078	811	655	285	529	8,338
1958 (a)	1,635	3,095	984	720	596	254	494	7,778
1959 (a)	1,647	3,057	956	696	582	240	472	7,650
1960 (a)	1,670	2,997	911	691	554	230	468	7,521
1961 (b)	1,680	3,089	701	523	554	217	478	7,242
1962 (b)	1,704	3,029	680	496	533	212	468	7,122
1963 (b)	1,661	2,990	642	462	504	205	451	6,915
1964 (b)	1,698	2,991	612	432	486	194	441	6,854
1965 (b)	1,678	3,000	606	416	474	192	432	6,798
1966 (b)	1,584	3,003	608	413	483	194	386	6,671
1967 (b)	1,632	2,945	597	409	469	190	374	6,616
1968 (b)	1,627	2,886	581	396	455	171	375	6,491
1969 (b)	1,656	2,787	565	365	422	150	365	6,310
1970 (b)	1,574	2,610	529	342	395	140	342	5,932
1971 (c)	1,494	2,399	739	234	196	107	328	5,497
1972 (c)	1,446	2,330	681	220	182	97	297	5,253
1973 (c)	1,424	2,386	682	229	175	104	294	5,294
1974 (d)	1,435	3,544	269	231	49	77	(d)	5,606
P 1975 (d)	1,385	3,560	284	225	72	100	(d)	5,626

(a) 1950 U.S. Census of Population; transit systems assigned by population of headquarters city.
(b) 1960 U.S. Census of Population; transit systems assigned by population of headquarters city.
(c) 1970 U.S. Census of Population; transit systems assigned by population of headquarters city.
(d) 1970 U.S. Census of Population; transit systems assigned by population of urbanized area excepting urban places of less than 50,000 population outside urbanized areas.

P = Preliminary

FIGURE III

Transit Ridership 1940–1975

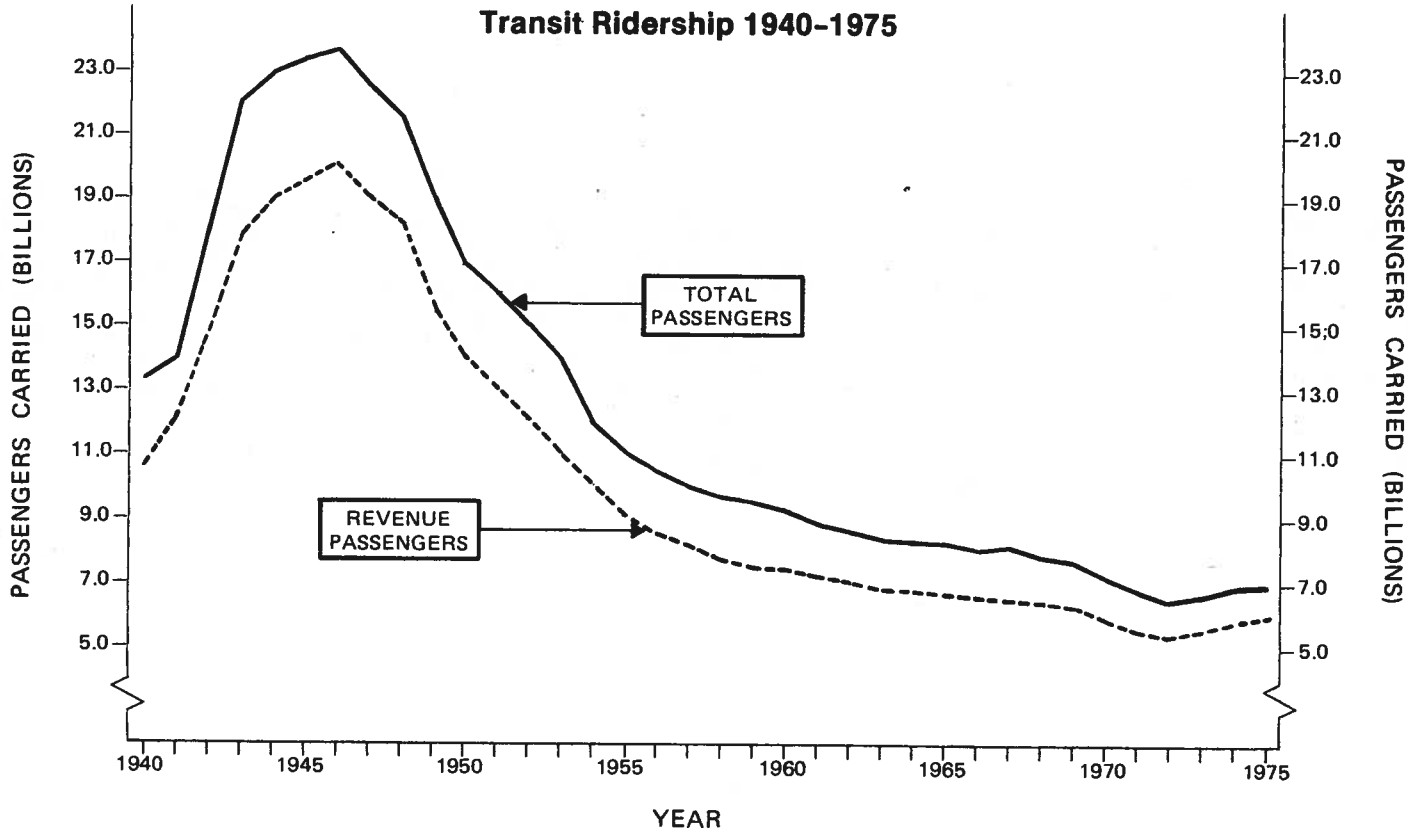


TABLE 6

Trend of Total Passengers

CALENDAR YEAR	RAILWAY			TROLLEY COACH	MOTOR BUS	TOTAL PASSENGERS
	LIGHT RAIL	HEAVY RAIL	TOTAL RAIL			
	(MILLIONS)	(MILLIONS)	(MILLIONS)	(MILLIONS)	(MILLIONS)	(MILLIONS)
1940	5,943	2,382	8,325	534	4,239	13,098
1945	9,426	2,698	12,124	1,244	9,886	23,254
1950	3,904	2,264	6,168	1,658	9,420	17,246
1955	1,207	1,870	3,077	1,202	7,250	11,529
1956	876	1,880	2,756	1,142	7,043	10,941
1957	679	1,843	2,522	993	6,874	10,389
1958	572	1,815	2,387	843	6,502	9,732
1959	521	1,828	2,349	749	6,459	9,557
1960	463	1,850	2,313	657	6,425	9,395
1961	434	1,855	2,289	601	5,993	8,883
1962	393	1,890	2,283	547	5,865	8,695
1963	329	1,836	2,165	413	5,822	8,400
1964	289	1,877	2,166	349	5,813	8,328
1965	276	1,858	2,134	305	5,814	8,253
1966	282	1,753	2,035	284	5,764	8,083
1967	263	1,938	2,201	248	5,723	8,172
1968	253	1,928	2,181	228	5,610	8,019
1969	249	1,980	2,229	199	5,375	7,803
1970	235	1,881	2,116	182	5,034	7,332
1971	222	1,778	2,000	148	4,699	6,847
1972	211	1,731	1,942	130	4,495	6,567
1973	207	1,714	1,921	97	4,642	6,660
1974	150	1,726	1,876	83	4,976	6,935
P 1975	123	1,668	1,804 (a)	78	5,068	6,950

P = Preliminary
(a) Includes cable car and inclined plane

TABLE 7

Trend of Revenue Passengers

CALENDAR YEAR	RAILWAY			TROLLEY COACH	MOTOR BUS	TOTAL REVENUE PASSENGERS
	LIGHT RAIL	HEAVY RAIL	TOTAL RAIL			
	(MILLIONS)	(MILLIONS)	(MILLIONS)	(MILLIONS)	(MILLIONS)	(MILLIONS)
1940	4,182.5	2,281.9	5,464.4	419.2	3,620.1	10,503.7
1945	7,080.9	2,555.1	9,636.0	1,001.2	8,344.7	18,981.9
1950	2,790.0	2,113.0	4,903.0	1,261.0	7,681.0	13,845.0
1955	845.0	1,741.0	2,586.0	869.0	5,734.0	9,189.0
1956	625.0	1,749.0	2,374.0	814.0	5,568.0	8,756.0
1957	491.0	1,706.0	2,197.0	703.0	5,438.0	8,338.0
1958	415.0	1,635.0	2,050.0	593.0	5,135.0	7,778.0
1959	378.0	1,647.0	2,025.0	517.0	5,108.0	7,650.0
1960	335.0	1,670.0	2,005.0	447.0	5,069.0	7,521.0
1961	323.0	1,680.0	2,003.0	405.0	4,834.0	7,242.0
1962	284.0	1,704.0	1,988.0	361.0	4,773.0	7,122.0
1963	238.0	1,661.0	1,899.0	264.0	4,752.0	6,915.0
1964	213.0	1,698.0	1,911.0	214.0	4,729.0	6,854.0
1965	204.0	1,678.0	1,882.0	186.0	4,730.0	6,798.0
1966	211.0	1,584.0	1,795.0	174.0	4,702.0	6,671.0
1967	196.0	1,632.0	1,828.0	155.0	4,633.0	6,616.0
1968	187.3	1,627.0	1,814.3	152.2	4,524.5	6,491.0
1969	183.4	1,656.3	1,839.7	135.3	4,335.3	6,310.3
1970	172.4	1,573.5	1,745.9	127.5	4,058.3	5,931.7
1971	155.1	1,494.0	1,649.1	113.1	3,734.8	5,497.0
1972	147.3	1,445.7	1,593.0	99.5	3,560.8	5,253.3
1973	143.5	1,423.7	1,567.2	73.6	3,652.8	5,293.9
1974	113.7	1,435.1	1,548.8	59.5	3,997.6	5,605.9
P 1975	93.7	1,384.7	1,489.1 (a)	55.8	4,080.9	5,625.8

P = Preliminary
(a) Includes cable car and inclined plane

TABLE 8

Trend of Operating Revenue

CALENDAR YEAR	RAILWAY			TROLLEY COACH	MOTOR BUS	TOTAL OPERATING REVENUE
	LIGHT RAIL	HEAVY RAIL	TOTAL RAIL			
	(MILLIONS)	(MILLIONS)	(MILLIONS)	(MILLIONS)	(MILLIONS)	(MILLIONS)
1940	$ 327.8	$ 128.3	$ 456.1	$ 25.0	$ 255.9	$ 737.0
1945	560.1	149.4	709.5	68.4	602.5	1,380.4
1950	361.7	216.4	578.1	122.0	752.0	1,452.1
1955	175.5	264.3	439.8	130.8	855.8	1,426.4
1956	139.4	271.4	410.8	127.6	877.7	1,416.1
1957	115.3	267.6	382.9	116.4	886.3	1,385.6
1958	99.1	266.5	365.6	103.2	880.7	1,349.5
1959	93.0	272.2	365.2	91.0	920.2	1,376.4
1960	87.6	281.8	369.4	81.9	955.9	1,407.2
1961	79.9	285.7	365.6	78.7	945.4	1,389.7
1962	73.3	293.0	366.3	76.0	961.2	1,403.5
1963	61.2	287.4	348.6	56.2	985.8	1,390.6
1964	55.6	295.8	351.4	46.4	1,010.3	1,408.1
1965	55.7	310.1	365.8	41.7	1,036.3	1,443.8
1966	58.7	306.5	365.2	39.2	1,074.1	1,478.5
1967	52.5	352.0	404.5	35.6	1,115.9	1,556.0
1968	53.1	358.2	411.3	35.9	1,115.5	1,562.7
1969	54.8	380.4	435.2	32.5	1,157.9	1,625.6
1970	55.2	384.4	439.6	31.5	1,236.3	1,707.4
1971	48.8	379.4	428.2	32.3	1,280.2	1,740.7
1972	48.4	417.2	465.6	32.8	1,230.1	1,728.5
1973	48.5	461.0	509.5	25.2	1,262.9	1,797.6
1974	36.5	505.8	542.3	20.1	1,377.3	1,939.7
P 1975	28.9	517.1	548.8 (a)	15.9	1,437.7	2,002.4

P = Preliminary
(a) Includes cable car and inclined plane

TABLE 9

Trend of Passenger Revenue

CALENDAR YEAR	RAILWAY			TROLLEY COACH	MOTOR BUS	TOTAL PASSENGER REVENUE
	LIGHT RAIL	HEAVY RAIL	TOTAL RAIL			
	(MILLIONS)	(MILLIONS)	(MILLIONS)	(MILLIONS)	(MILLIONS)	(MILLIONS)
1940	$ 304.0	$ 123.8	$ 427.8	$ 24.9	$ 248.8	$ 701.5
1945	513.4	142.3	655.7	68.0	590.0	1,313.7
1950	322.4	209.6	532.0	120.6	734.2	1,386.8
1955	146.6	257.5	404.1	128.5	826.3	1,358.9
1956	117.1	264.2	381.3	124.5	845.3	1,351.1
1957	97.0	260.5	357.5	112.7	849.6	1,319.8
1958	83.5	259.4	342.9	100.1	839.2	1,282.2
1959	78.5	262.9	341.4	89.9	877.0	1,308.3
1960	74.0	269.6	343.6	81.0	910.3	1,334.9
1961	73.1	273.5	346.6	76.5	897.8	1,320.9
1962	66.3	280.1	346.4	73.7	910.1	1,330.2
1963	54.8	274.6	329.4	54.7	932.2	1,316.3
1964	48.3	282.3	330.6	45.0	950.4	1,326.0
1965	48.6	279.0	327.6	40.6	971.9	1,340.1
1966	51.8	297.0	348.8	38.5	998.1	1,385.4
1967	44.8	340.4	385.2	34.9	1,037.3	1,457.4
1968	44.0	341.7	385.7	34.8	1,049.7	1,470.2
1969	45.9	362.5	408.4	31.5	1,114.8	1,554.7
1970	46.6	368.5	415.1	30.4	1,193.6	1,639.1
1971	40.1	363.8	403.9	31.2	1,226.8	1,661.9
1972	39.6	401.9	441.5	31.4	1,177.8	1,650.7
1973	38.7	437.6	476.3	23.6	1,183.8	1,683.7
1974	31.7	486.7	518.4	17.2	1,269.6	1,805.2
P 1975	28.1	504.3	535.0 (a)	15.4	1,310.1	1,860.5

P = Preliminary
(a) Includes cable car and inclined plane

TABLE 10

Trend of Passenger Vehicle Miles Operated

CALENDAR YEAR	RAILWAY			TROLLEY COACH	MOTOR BUS	TOTAL VEHICLE MILES OPERATED
	LIGHT RAIL	HEAVY RAIL	TOTAL RAIL			
	(MILLIONS)	(MILLIONS)	(MILLIONS)	(MILLIONS)	(MILLIONS)	(MILLIONS)
1940	844.7	470.8	1,315.5	86.0	1,194.5	2,596.0
1945	939.8	458.4	1,398.2	133.3	1,722.3	3,253.8
1950	463.1	443.4	906.5	205.7	1,895.4	3,007.6
1955	178.3	382.8	561.1	176.5	1,709.9	2,447.5
1956	132.9	387.1	520.0	165.7	1,680.9	2,366.6
1957	106.6	388.0	494.6	146.5	1648.4	2,289.5
1958	89.9	386.5	476.4	131.0	1,593.6	2,201.0
1959	81.3	388.7	470.0	112.4	1,576.5	2,158.9
1960	74.8	390.9	465.7	100.7	1,576.4	2,142.8
1961	69.4	385.1	454.5	92.9	1,529.7	2,077.1
1962	61.5	386.7	448.2	84.0	1,515.2	2,047.4
1963	48.9	387.3	436.2	62.4	1,523.1	2,021.7
1964	42.9	395.8	438.7	49.2	1,527.9	2,015.8
1965	41.6	395.3	436.9	43.0	1,528.3	2,008.2
1966	42.9	378.9	421.8	40.1	1,521.7	1,983.6
1967	37.8	396.5	434.3	36.5	1,526.0	1,996.8
1968	37.5	406.8	444.3	36.2	1,508.2	1,988.7
1969	36.0	416.6	452.6	35.8	1,478.3	1,966.7
1970	33.7	407.1	440.8	33.0	1,409.3	1,883.1
1971	32.7	407.4	440.0	30.8	1,375.5	1,846.3
1972	31.6	386.2	417.8	29.8	1,308.0	1,755.6
1973	31.2	407.3	438.5	25.7	1,370.4	1,834.6
1974	26.9	431.9	458.8	17.6	1,431.0	1,907.4
P 1975	23.8	423.1	447.4 (a)	14.3	1,528.0	1,989.7

P = Preliminary
(a) Includes cable car and inclined plane

FIGURE IV

Transit Operating Revenue and Operating Expense per Passenger Vehicle Mile 1940-1975

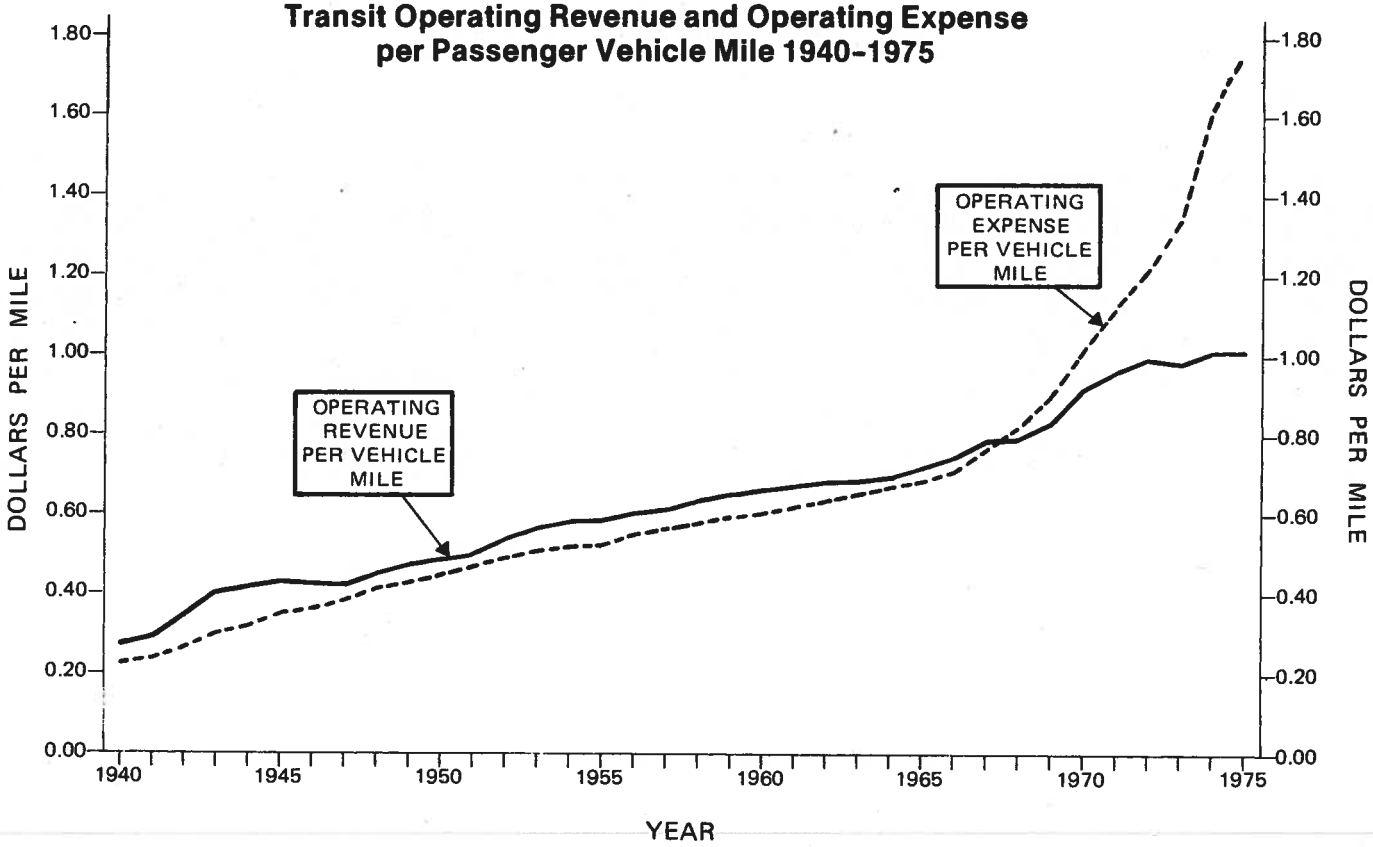


TABLE 11

Trend of Transit Employment, Compensation, and Labor Costs

CALENDAR YEAR	AVERAGE NUMBER OF EMPLOYEES	ANNUAL PAYROLL (THOUSANDS)	AVERAGE ANNUAL EARNINGS PER EMPLOYEE	EMPLOYER PAYROLL TAXES (THOUSANDS)	FRINGE BENEFIT COSTS (THOUSANDS)	TOTAL LABOR COSTS (THOUSANDS)
1940	203,000	$ 360,000	$ 1,773	(a)	(a)	(a)
1945	242,000	632,000	2,612	(a)	(a)	(a)
1950	240,000	835,000	3,479	(a)	(a)	(a)
1955	198,000	864,000	4,364	(a)	(a)	(a)
1956	186,000	852,000	4,581	(a)	(a)	(a)
1957	177,000	840,000	4,746	(a)	(a)	(a)
1958	165,000	831,000	5,036	(a)	(a)	(a)
1959	159,100	832,000	5,229	(a)	(a)	(a)
1960	156,400	857,300	5,481	(a)	(a)	(a)
1961	151,800	856,400	5,642	(a)	(a)	(a)
1962	149,100	878,100	5,889	(a)	(a)	(a)
1963	147,200	892,300	6,062	(a)	(a)	(a)
1964	144,800	916,900	6,332	(a)	(a)	(a)
1965	145,000	963,500	6,645	(a)	(a)	(a)
1966	144,300	994,900	6,895	(a)	(a)	(a)
1967	146,100	1,055,100	7,222	(a)	(a)	(a)
1968	143,590	1,109,500	7,727	(a)	(a)	(a)
1969	140,860	1,183,807	8,404	(a)	(a)	(a)
1970	138,040	1,274,109	9,230	(a)	(a)	(a)
1971	139,120	1,393,148	10,014	(a)	(a)	(a)
1972	138,420	1,455,486	10,515	(a)	(a)	(a)
1973	140,700	1,624,241	11,544	(a)	(a)	(a)
1974	153,100	1,967,100	12,849	(a)	(a)	(a)
P 1975	159,800	2,236,063	13,993	$ 146,952	$ 466,322	$ 2,849,337

P = Preliminary
(a) Data not available

FIGURE V

Comparison of Transit Payroll Expense and Operating Expense 1940-1975

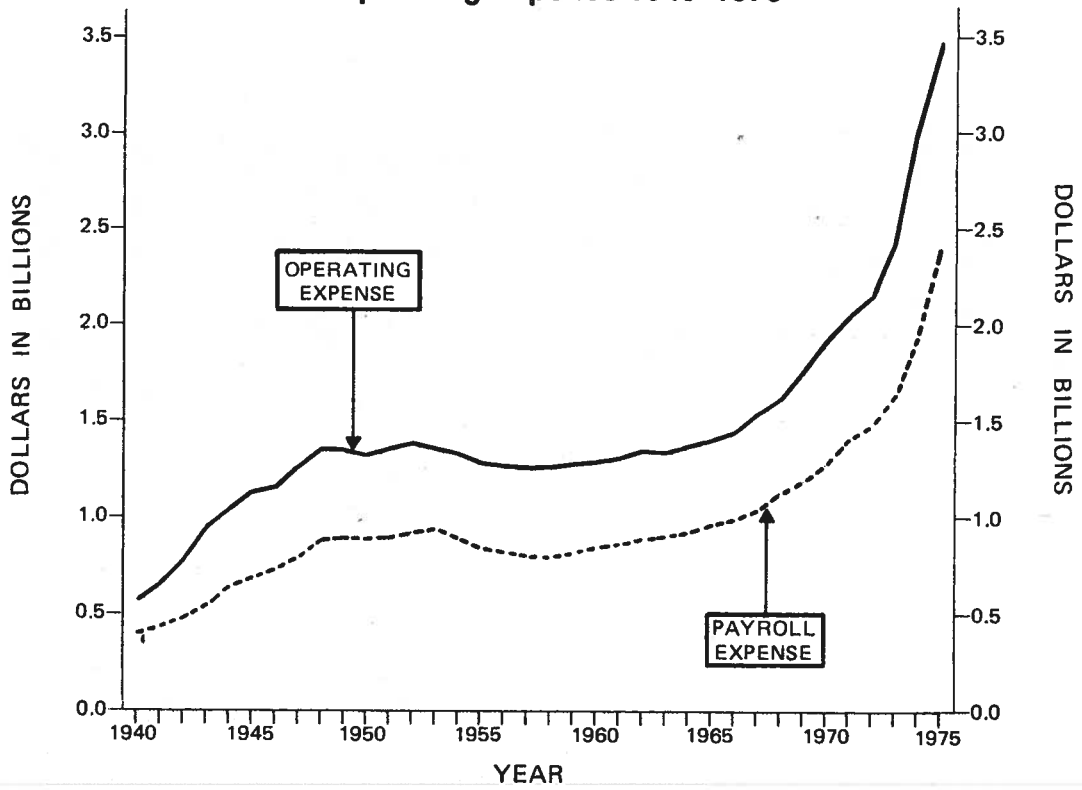


TABLE 12

Transit Passenger Vehicles Owned and Leased

CALENDAR YEAR	RAILWAY CARS			TROLLEY COACHES	MOTOR BUSES	TOTAL REVENUE VEHICLES
	LIGHT RAIL	HEAVY RAIL	TOTAL RAIL			
1940	26,630	11,032	37,662	2,802	35,000	75,464
1945	26,160	10,217	36,377	3,711	49,670	89,758
1950	13,228	9,758	22,986	6,504	56,820	86,310
1955	5,300	9,232	14,532	6,157	52,400	73,089
1956	3,970	9,255	13,225	5,748	51,400	70,373
1957	3,601	9,158	12,759	5,412	50,800	68,971
1958	3,108	9,093	12,201	4,848	50,100	67,149
1959	2,983	9,000	11,983	4,297	49,500	65,780
1960	2,856	9,010	11,866	3,826	49,600	65,292
1961	2,341	9,078	11,419	3,593	49,000	64,012
1962	2,219	8,865	11,084	3,161	48,800	63,045
1963	1,756	8,878	10,634	2,155	49,400	62,189
1964	1,553	9,061	10,614	1,865	49,200	61,679
1965	1,549	9,115	10,664	1,453	49,600	61,717
1966	1,407	9,273	10,680	1,326	50,130	62,136
1967	1,388	9,257	10,645	1,244	50,180	62,069
1968	1,355	9,390	10,745	1,185	50,000	61,930
1969	1,322	9,343	10,665	1,082	49,600	61,347
1970	1,262	9,338	10,600	1,050	49,700	61,350
1971	1,225	9,325	10,550	1,037	49,150	60,737
1972	1,176	9,423	10,599	1,030	49,075	60,704
1973	1,123	9,387	10,510	794	48,286	59,590
1974	1,068	9,403	10,471	718	48,700	59,889
P 1975	1,061	9,608	10,757 (a)	703	50,811	62,271

P = Preliminary

(a) Includes 45 PRT transit vehicles, 39 cable cars, and 4 inclined plane cars

FIGURE VI

Transit Employees per Passenger Vehicle and Total Passenger Vehicles 1940-1975

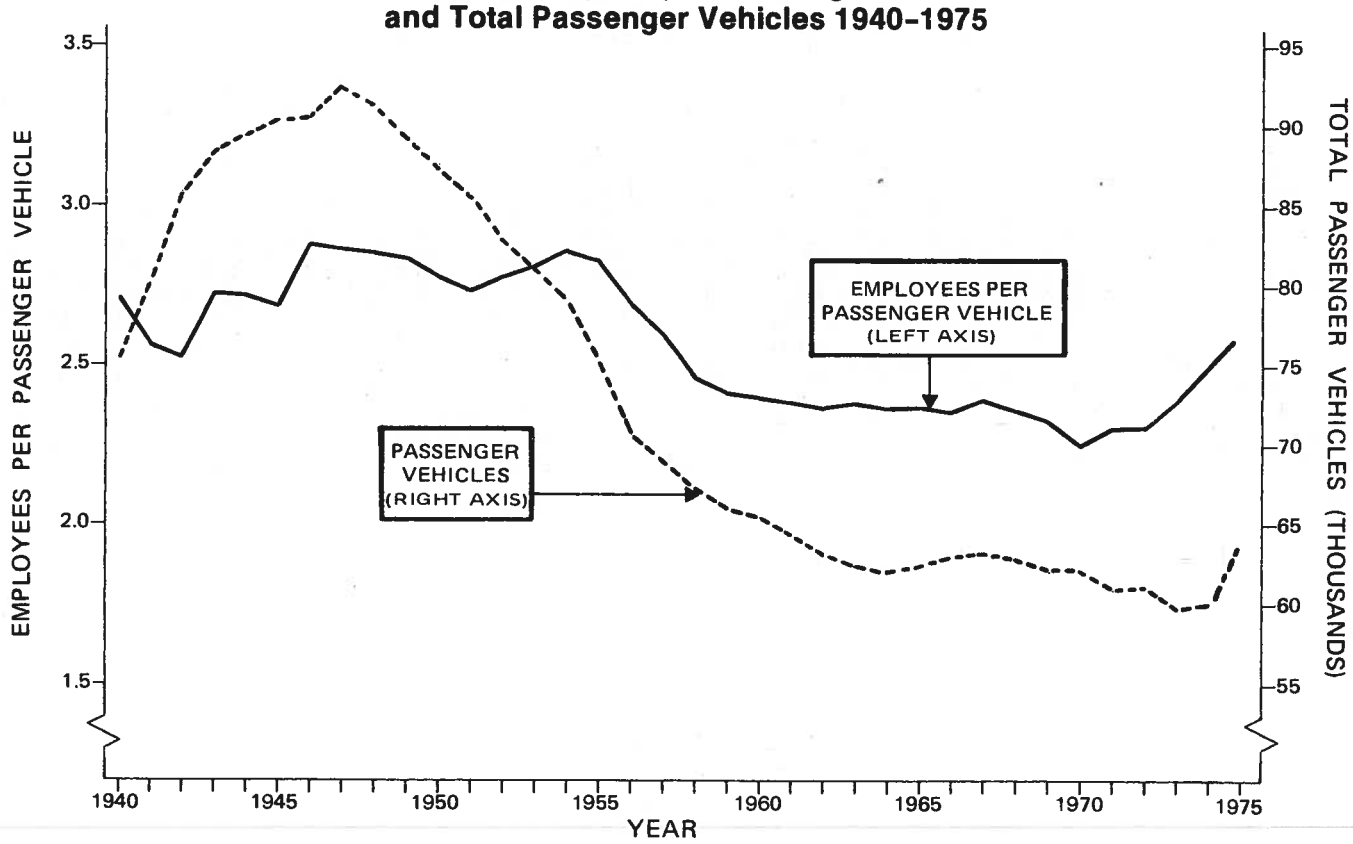


TABLE 13

Trend of Average Fare

CALENDAR YEAR	AVERAGE FARE					ADULT CASH FARE	
	LIGHT RAIL	HEAVY RAIL	TROLLEY COACH	MOTOR BUS	ALL MODES	HIGH	LOW
1940	7.27¢	5.43¢	5.94¢	6.87¢	6.68¢	10¢	5¢
1945	7.25	5.57	6.79	7.07	6.92	10	5
1950	11.56	9.92	9.56	9.56	10.02	17	5
1955	17.35	14.79	14.79	14.41	14.79	20	5
1956	18.74	15.11	15.29	15.18	15.43	20	7
1957	19.76	15.27	16.03	15.62	15.83	25	7
1958	20.12	15.87	16.88	16.34	16.48	25	7
1959	20.77	15.96	17.39	17.17	17.10	30	7
1960	22.09	16.14	18.12	17.96	17.75	30	7
1961	22.63	16.28	18.89	18.57	18.24	30	10
1962	23.35	16.44	20.42	19.07	18.68	30	10
1963	23.03	16.35	20.72	19.62	19.04	30	10
1964	22.68	16.63	21.03	20.10	19.35	35	10
1965	23.82	16.63	21.83	20.55	19.71	35	10
1966	24.55	18.75	22.13	21.23	20.77	35	10
1967	22.86	20.86	22.52	22.39	22.03	35	10
1968	23.49	21.00	22.86	23.20	22.65	35	10
1969	25.03	21.89	23.28	25.71	24.64	35	10
1970	27.03	23.42	23.84	29.41	27.63	50	10
1971	25.85	24.17	27.59	32.23	29.78	50	15
1972	26.88	27.80	31.55	33.07	31.42	50	15
1973	26.96	30.74	32.06	32.40	31.80	60	Free
1974	27.88	33.91	28.91	31.76	32.20	60	10
P 1975	29.99	36.41	27.60	32.10	33.07	75	15

P = Preliminary

TABLE 14

New Passenger Vehicles Delivered

CALENDAR YEAR	RAILWAY CARS			TROLLEY COACHES	MOTOR BUSES	TOTAL REVENUE VEHICLES
	LIGHT RAIL	HEAVY RAIL	TOTAL RAIL			
1940	463	189	652	618	3,984	5,254
1941	462	0	462	227	5,600	6,289
1942	284	0	284	356	7,200	7,840
1943	32	0	32	116	1,251	1,399
1944	284	0	284	60	3,807	4,151
1945	332	0	332	161	4,441	4,934
1946	421	0	421	266	6,463	7,150
1947	626	2	628	955	12,029	13,612
1948	478	248	726	1,430	7,009	9,165
1949	273	415	688	680	3,358	4,726
1950	4	199	203	179	2,668	3,050
1951	56	140	196	600	4,552	5,348
1952	19	0	19	224	1,749	1,992
1953	0	0	0	0	2,246	2,246
1954	0	260	260	0	2,225	2,485
1955	0	288	288	43	2,098	2,429
1956	0	376	376	0	2,759	3,135
1957	0	469	469	0	1,946	2,415
1958	0	428	428	0	1,698	2,126
1959	0	210	210	0	1,537	1,747
1960	0	416	416	0	2,806	3,222
1961	0	468	468	0	2,415	2,883
1962	0	406	406	0	2,000	2,406
1963	0	658	658	0	3,200	3,858
1964	0	640	640	0	2,500	3,140
1965	0	580	580	0	3,000	3,580
1966	0	179	179	0	3,100	3,279
1967	0	85	85	0	2,500	2,585
1968	0	384	384	0	2,228	2,612
1969	0	650	650	0	2,230	2,880
1970	0	308	308	0	1,442	1,750
1971	0	250	250	1	2,514	2,764
1972	0	360	360	1	2,904	3,265
1973	0	238	238	1	3,200	3,439
1974	0	92	92	0	4,818	4,910
P 1975	0	127	127	1	5,261	5,389

P = Preliminary

TABLE 15

Seating Capacity of New Motor Buses Delivered

CALENDAR YEAR	29 SEATS OR FEWER	30-39 SEATS	40 SEATS OR MORE	TOTAL MOTOR BUSES
1943	847	179	225	1,251
1944	2,423	369	1,015	3,807
1945	1,757	1,183	1,501	4,441
1946	1,849	2,429	2,185	6,463
1947	1,951	3,717	6,361	12,029
1948	523	2,144	4,342	7,009
1949	289	1,344	1,725	3,358
1950	205	852	1,611	2,668
1951	148	1,711	2,693	4,552
1952	36	458	1,165	1,749
1953	30	499	1,717	2,246
1954	22	359	1,844	2,225
1955	8	229	1,861	2,098
1956	8	162	2,589	2,759
1957	0	129	1,817	1,946
1958	2	177	1,419	1,698
1959	1	157	1,379	1,537
1960	0	173	2,633	2,806
1961	0	105	2,310	2,415
1962	4	76	1,920	2,000
1963	18	97	3,085	3,200
1964	0	169	2,331	2,500
1965	6	225	2,769	3,000
1966	36	312	2,752	3,100
1967	32	260	2,208	2,500
1968	63	171	1,994	2,228
1969	65	163	2,002	2,230
1970	77	73	1,274	1,442
1971	95	70	2,349	2,514
1972	124	199	2,581	2,904
1973	182	317	2,701	3,200
1974	345	251	4,222	4,818
P 1975	419	128	4,714	5,261

P = Preliminary

TABLE 16

Trend of Energy Consumption by Transit Passenger Vehicles

CALENDAR YEAR	ELECTRIC POWER CONSUMED (KILOWATT HOURS IN MILLIONS)				FOSSIL FUELS CONSUMED (GALLONS IN THOUSANDS)		
	LIGHT RAIL	HEAVY RAIL	TROLLEY COACH	TOTAL	GASOLINE	DIESEL	PROPANE
1940	4,050	1,977	307	6,334	(a)	(a)	0
1945	4,547	1,966	520	7,033	510,000	11,800	0
1950	2,410	2,000	841	5,251	430,000 (b)	98,600	(b)
1955	910	1,900	720	3,530	246,000	172,600	30,300
1956	700	1,960	680	3,340	219,400	183,500	30,300
1957	560	1,980	600	3,140	198,400	190,000	34,200
1958	485	2,073	535	3,093	181,700	192,700	35,100
1959	431	2,067	464	2,962	167,800	196,600	36,600
1960	393	2,098	417	2,908	153,600	208,100	38,300
1961	362	2,108	381	2,851	125,900	217,500	35,700
1962	325	2,115	346	2,786	108,400	229,000	36,100
1963	255	2,125	262	2,642	102,500	235,300	35,900
1964	222	2,171	204	2,597	95,900	242,200	33,400
1965	218	2,165	181	2,584	91,500	248,400	32,700
1966	226	2,075	166	2,467	76,000	256,000	33,600
1967	180	2,194	157	2,531	57,800	270,300	33,000
1968	179	2,250	157	2,586	45,700	274,200	32,200
1969	173	2,291	154	2,618	40,000	273,800	31,600
1970	157	2,261	143	2,561	37,200	270,600	31,000
1971	153	2,262	141	2,556	29,400	256,800	26,500
1972	146	2,149	133	2,428	19,647	253,250	24,400
1973	140	2,098	93	2,331	12,333	282,620	15,152
1974	(a)	(a)	(a)	2,630	7,457	316,360	3,142
P 1975	(a)	(a)	(a)	2,646	5,017	365,060	2,559

P = Preliminary
(a) Data not available.
(b) Propane included with gasoline.

TABLE 17

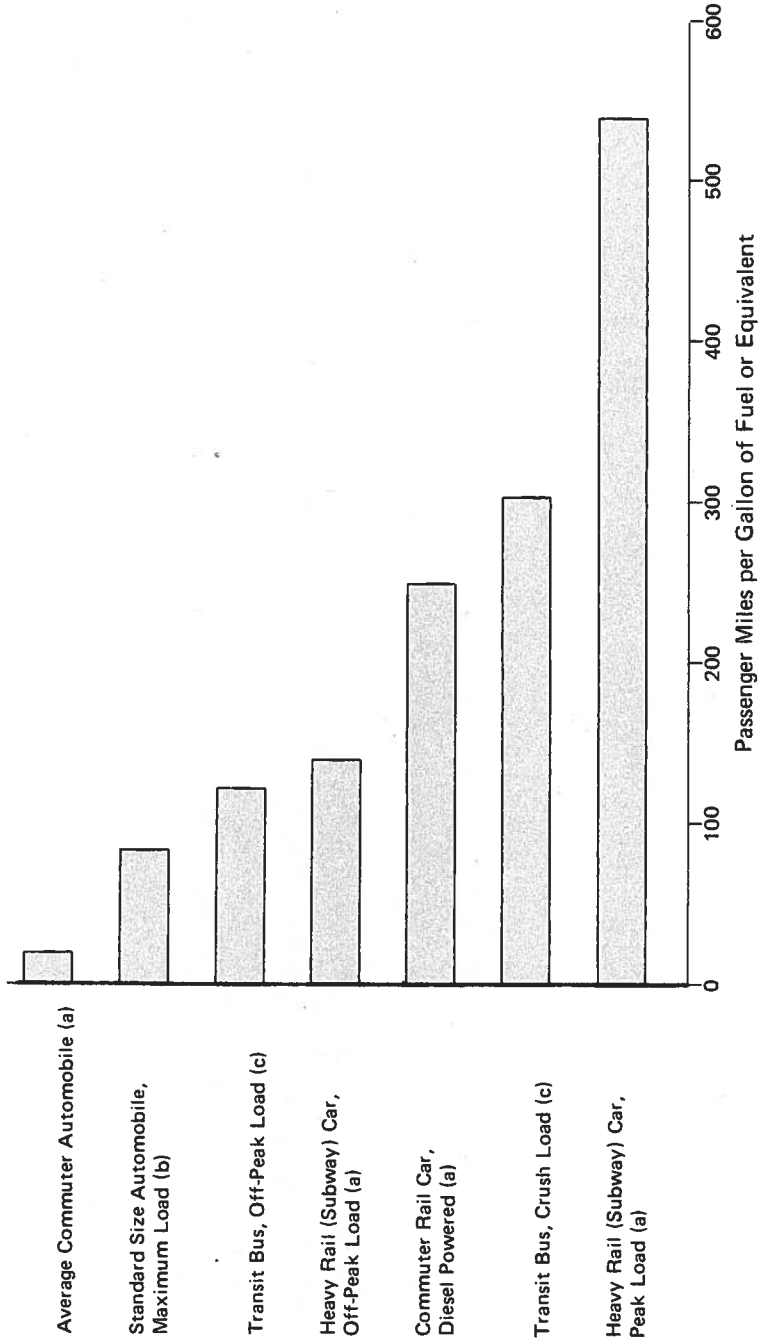
Energy Requirements of Passenger Transportation Modes

	ASSUMED PASSENGER LOADING	VEHICLE MILES PER GALLON OF FUEL OR EQUIVALENT	PASSENGER MILES PER GALLON OF FUEL OR EQUIVALENT
Heavy Rail Transit (Subway) Car, Peak Load (a)	135	4.00	540
Intercity Passenger Train (b)	540-720	0.50	270-360
Transit Bus, Peak Load (c)	75	4.10	307
Intercity Bus (d)	47	6.00	282
Commuter Rail Car, Diesel Powered (a)	125	2.00	250
Heavy Rail Transit (Subway) Car, Off-Peak Load (a)	35	4.00	140
Transit Bus, Off-Peak Load (c)	30	4.10	123
Rail Turbine Train (b)	320	0.33	110
Standard Size Automobile, Intercity, Maximum Load (e)	6	18.00	108
Standard Size Automobile, Urban, Maximum Load (e)	6	14.40	86
Wide-Body Commercial Jet Aircraft, 1,000 Mile Flight (f)	256-385	0.14-0.22	54-60
Twin Jet Commercial Aircraft, 500 Mile Flight (f)	68-106	0.44-0.54	37-47
Average Commuter Automobile (a)	1.4	13.5	19

Sources:
(a) Commonwealth of Pennsylvania, Department of Transportation
(b) National Railroad Passenger Corporation (Amtrak)
(c) Cleveland Transit System
(d) U.S. Department of Transportation, Transportation Systems Center
(e) U.S. Department of Transportation, Federal Highway Administration
(f) National Aeronautics and Space Administration

FIGURE VII

Energy Comparison of Urban Transportation Modes



Sources: (a) Commonwealth of Pennsylvania, Department of Transportation
(b) U.S. Department of Transportation, Federal Highway Administration
(c) Cleveland Transit System