

“The Bus Is Young and Honest”

Transportation Politics, Technical Choice, and the Motorization of Manhattan Surface Transit, 1919–1936

ZACHARY M. SCHRAG

In 1979, the New York City Planning Commission proposed a new vision for mass transit on the streets of Manhattan. The commission proposed to replace sixty-eight crosstown buses on Forty-second Street with twelve electric streetcars, which, asserted the commission, would run twice as fast with lower operating costs, and without noxious exhaust fumes.¹ Ironically, streetcars had in fact rolled along Forty-second Street until 1946, and city officials had hailed as progress the replacement of Manhattan’s trolleys with diesel or gasoline buses. Moreover, the 1979 commission proposed to replace the buses of the New York City Transit Authority with a light rail system operated by a private company, whereas several New York City administrations in the 1920s and 1930s had worked to substitute municipally operated for privately owned transit.

It is no coincidence that vehicle type and operating authority were debated simultaneously in both cases. A fight over vehicle type often represents just the top layer of a deep conflict over who is to provide urban transit under what terms. Though transit executives, politicians, and other players boasted of the technical advantages of bus or streetcar, many cared more about regulation, taxation, and ownership than the merits of rubber tires

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1. Maurice Carroll, “Is Clang of the Trolley 42d Street-Bound?” *New York Times*, 23 January 1979; Tony Hiss, “Light Rail,” *New Yorker*, 6 March 1989, 70–90. As of 1999 the plan is still alive, but only on paper. See, for example, Robert D. Yaro and Tony Hiss, *A Region at Risk: The Third Regional Plan for the New York–New Jersey–Connecticut Metropolitan Area* (Washington, D.C., 1996), 120–21.

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or steel rails. Their decisions to abandon streetcars, in New York and in other cities throughout the United States, cannot be explained either by inherent technical advantages of buses or the conspiracies of bus manufacturers. Rather, the bitter antagonism between transit companies and local politicians moved both the companies and the politicians toward support of the bus as a means to rewrite old rules. They understood that the eight decades of tradition, custom, and regulation fettering the street railway had not yet gripped the new machine. As one upstart bus company put it, “the bus is young and honest.”²

The current historical debate over the motorization of mass transit in the United States began in earnest in 1974 with the publication and presentation to the United States Senate of *American Ground Transport* by Bradford Snell.³ Snell charged that General Motors had destroyed mass transit in the United States by purchasing controlling shares of electric railways and converting them to diesel bus operation, not only to sell more GM buses but to weaken mass transit, forcing Americans into GM cars. In his report, Snell disparages the bus. “Due to their high cost of operation and slow speed on congested streets . . . these buses ultimately contributed to the collapse of several hundred public transit systems and to the diversion of hundreds of thousands of patrons to automobiles.”⁴

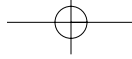
Snell’s thesis remains alive both in scholarly literature and in popular culture. Many books and journal articles uncritically cite *American Ground Transport*.⁵ David St. Clair’s *Motorization of American Cities* fills in Snell’s

2. “Bus Vs. Trolley Car,” *City Topics*, August 1921. If the bus was honest, *City Topics* was not. It is a four-page pamphlet imitating a newspaper—with headlines, a masthead, and the like—but a quick read reveals it to be a propaganda sheet for the City Transit Company, which was bidding for a citywide bus franchise. The statement that “the bus is young and honest” refers specifically in the pamphlet to the fact that the street railways’ finances were “water-logged [and] in the mire of financial filth,” but it nicely sums up what I consider to have been the bus’s chief advantage: its lack of a past. A copy of *City Topics* can be found at the New York Historical Society.

3. Bradford Snell, *American Ground Transport*, reproduced as an appendix to U.S. Senate Committee on the Judiciary, *The Industrial Reorganization Act: Hearings before a Subcommittee of the Senate Committee on the Judiciary on S. 1167*, 93rd Cong., 2d sess., 1974, pt. 4A. Snell submitted his report to the subcommittee on antitrust and monopoly, where he worked as a staff member. For an account of the hearings and the immediate reactions of the popular press, see Timothy P. O’Hanlon, “General Motors, Nazis, and the Demise of Urban Rail Transit,” *Government Publications Review* 11 (1984): 211–32.

4. Snell, A-29.

5. See, for example, Delbert A. Taebel and James V. Cornehl, *The Political Economy of Urban Transportation* (Port Washington, N.Y., 1977), 72; Robert Barry Carson, *What Ever Happened to the Trolley? A Micro Historical and Economic Study of the Rise and Decline of Street Railroads in Syracuse, New York, 1860–1941* (Washington, D.C., 1977), 77 and 92–94; Glenn Yago, *The Decline of Transit: Urban Transportation in German and U.S. Cities, 1900–1970* (Cambridge, 1984), 58–69, 245 n. 12; Russell Mokhiber, *Corporate Crime and Violence: Big Business Power and the Abuse of the Public Trust* (San Francisco, 1988),



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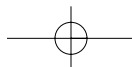
sketchy arguments with additional evidence.⁶ Using aggregated data for the years 1935–50, St. Clair compares streetcars, trolley coaches (rubber-tired buses powered by electricity drawn from overhead wires), and motor buses and finds “the streetcar was more economical than the motor bus, at least on the more heavily patronized lines,” and that only an intent to weaken public transit can explain motorization.⁷

Snell has his critics. General Motors defended itself in 1974 by noting that the decision to abandon streetcars preceded GM’s investment in transit companies and citing early movement toward buses in both Los Angeles and New York. Historian Sy Adler bluntly complains that “everything Bradford Snell wrote in *American Ground Transport* about transit in Los Angeles is wrong,” attributing the abandonment of passenger interurbans there to a desire to use their rails for freight service. In their studies of Los Angeles and Chicago, respectively, Scott Bottles and Paul Barrett blame a transit industry characterized in 1900 by monopolistic practices, unsavory “traction barons,” and crowded, decrepit streetcars. They argue that buses slowed, rather than hastened, the decline of mass transit. Donald F. Davis adds that many riders preferred buses to streetcars, and the short life span

221–28; Stephen Goddard, *Getting There: The Epic Struggle Between Road and Rail in the American Century* (New York, 1994), esp. 126–27; Moshe Safdie, *The City after the Automobile: An Architect’s Vision* (Boulder, Colo., 1997), 126. Jonathan Kwitny, “The Great Transportation Conspiracy,” *Harper’s*, February 1981, 14–21, seems to have been particularly effective in bringing Snell’s thesis to the general public. James Klein and Martha Olson brought Snell’s argument (and Snell himself) to the screen in *Taken for a Ride* (Hohokus, N.J.: New Day Films, 1996), which aired on PBS in 1996. In Robert Zemeckis’s Academy Award–winning film *Who Framed Roger Rabbit?* (Touchstone Pictures and Amblin Entertainment, 1988), Cloverleaf Industries (sole shareholder, Judge Doom) purchases the Pacific Electric (the Los Angeles–area interurban) with the intent to scrap the “red cars” and replace them with freeways. For an update of O’Hanlon’s work tracing popular images of streetcars and their demise, see Robert C. Post, “The Myth Behind Streetcar Revival,” *American Heritage*, May/June 1998, 95–100, and “Images of the Pacific Electric: Why Memories Matter,” *Railroad History* 179 (autumn 1998): 7–44. Post argues that the romanticization of prewar streetcar systems is largely responsible for the present popularity of light-rail systems. At the annual meeting of the Transportation Review Board in Washington, D.C., January 1999, Post and fellow panelists Martha Bianco, Jim Graebner, and Clay McShane described both the flaws and endurance of Snell’s thesis to a large room filled to capacity with transportation professionals, suggesting the resonance of the conspiracy thesis even after a quarter of a century and even among experts in the field. Post noted that the vast majority of today’s trolley fans are male, a theme he also mentions in “No Mere Technicalities: How Things Work and Why It Matters,” *Technology and Culture* 40 (1999): 607–22.

6. David J. St. Clair, *The Motorization of American Cities* (New York, 1986). The dissertation on which the book is based was completed in 1979, suggesting that St. Clair began his project only a few years after Snell had testified.

7. St. Clair, 53, 68, 77. St. Clair does not consider the preferences of riders, city governments, or civic groups.



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of individual buses may actually have been an advantage since it gave passengers more chances to ride new vehicles.⁸

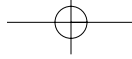
Martha Bianco's study of Portland, Oregon, takes a middle ground. Bianco agrees with Snell and St. Clair that the motor bus was inferior to the trolley coach, which was cheaper to operate, quieter, and free of fumes, and therefore more popular with riders. Like Snell, she sees suppliers' "high-pressure tactics" as the key determinant of choice, but she holds the Portland city council complicit for forcing the transit company to borrow so heavily that Mack Truck could dictate vehicle selection.⁹ David Gurin's 1977 study of the motorization of New York likewise emphasizes the role of city government. He observes that some officials called for motorization out of habit rather than close attention to the issues, becoming mired in what he terms "dogma."¹⁰

Why did transit companies replace their streetcars with buses? The Manhattan story reveals a key part of the answer. In the most densely populated area of the United States, Manhattanites were deeply committed to

8. General Motors, "The Truth About 'American Ground Transport,'" printed as an appendix to U.S. Senate Committee on the Judiciary, *The Industrial Reorganization Act* (n. 3 above), A-114, A-118 to A-120. Sy Adler, "The Transformation of the Pacific Electric Railway: Bradford Snell, Roger Rabbit, and the Politics of Transportation in Los Angeles," *Urban Affairs Quarterly* 27 (September 1991), 58, 61. Scott L. Bottles, *Los Angeles and the Automobile: The Making of the Modern City* (Berkeley, Calif., 1987), 229–30. Paul Barrett, *The Automobile and Urban Transit: The Formation of Public Policy in Chicago, 1900–1930* (Philadelphia, 1983), 174. Cliff Slater agrees with this view, arguing that "if local regulation had not intervened, buses would have replaced streetcars earlier than they actually did, as seen from the New Jersey example"; see "General Motors and the Demise of Streetcars," *Transportation Quarterly* 51 (summer 1997), 61. Donald F. Davis, "North American Urban Mass Transit, 1890–1950: What If We Thought About It as a Type of Technology?" *History and Technology* 12 (1995): 309–26. Mark S. Foster writes that Snell's "charges are largely irrelevant. The point to remember is that street railway patronage was in steady decline for more than a decade before the creation of National City Lines, and that GM's 'plot' probably did little to speed up the collapse of trolley systems across America"; *Streetcar to Superhighway: American City Planners and Urban Transportation, 1900–1940* (Philadelphia, 1981), 219 n. 41.

9. Martha J. Bianco, "Private Profit versus Public Service: Competing Demands in Urban Transportation History and Policy, Portland, Oregon, 1872–1970" (Ph.D. diss., Portland State University, 1994), 355, 417, 450, 454–55.

10. David Gurin, "Trolley Transit in New York," parts 1 and 2, *National Railway Bulletin* 42, no. 1 (1977): 5; no. 2 (1977): 18–19. Gurin views automobile companies as only minor players in the switch to buses, noting that the Third Avenue system, which ran mainly in the Bronx, motorized in 1946 without ties to any bus manufacturer. He argues that the city government first turned to buses as "a means to achieving the goals of municipal ownership and unification of transit, as well as maintenance of the five-cent fare." I agree with Gurin's analysis, which is based largely on *New York Times* articles, and hope that my account adds detail, and the perspective of the transit companies, to his brief narrative. Brian J. Cudahy, *Cash, Tokens, and Transfers: A History of Urban Mass Transit in North America* (New York, 1990), 190–91, criticizes the conspiracy thesis of postwar motorization, and he includes city governments' wish to get rid of streetcars among the causes of the streetcar's decline.



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both rapid (subway and elevated) and surface transit. If St. Clair's calculations are correct, Manhattan's density should have favored rail over rubber.¹¹ The periodical *Bus Transportation* argued that the motorization of Manhattan showed that "no city is too large to join the all-bus parade."¹² New York was, in a sense, the principal test for buses; if they could make it there, they'd make it anywhere.

Manhattan was also a trendsetter. It had been home to the nation's first horse railways, in 1832, and its first motor buses, in 1905. The 1935–36 motorization of Manhattan was a triumph for the bus and may have influenced cities around the country. According to Richard J. Solomon and Arthur Saltzman, New York Omnibus's "massive, successful conversion to buses . . . within a period of only 18 months has generally been recognized as the turning point in the electric railway industry in the United States. . . ."¹³

General Motors hoped that Manhattan would start a trend, describing the motorization of the Fourth and Madison line as "the most important and epochal event in the history of community transportation."¹⁴ Yellow Coach, GM's bus-making subsidiary, along with the various component manufacturers, took out a thirty-eight-page advertisement in a 1935 issue of *Bus Transportation*, trumpeting the achievement (fig. 1). "Ten years ago," wrote the company, "motorization of surface transportation in New York City would have been considered visionary. Today it is an established fact . . . a pattern for other operators in their modernization plans."¹⁵

11. St. Clair follows the writers of the 1920s and 1930s in arguing that the bus would be particularly suited to more sparsely populated areas. A streetcar route with only enough traffic to justify one vehicle per hour, for example, would leave expensive rails and electric conduits idle most of the day, but a bus on that route would share the road with automobiles and trucks, making the service more efficient. If dense Manhattan was suitable for the bus, then every place less dense—i.e., pretty much the entire world—would be as well.

12. "They're Switching from Rails to Rubber," *Bus Transportation*, February 1935, 57. McGraw-Hill spun off *Bus Transportation* from the *Electric Railway Journal* in 1922, marking a milestone in the spread of the bus and dismaying some trolley executives, who felt betrayed by the publishers of their trade journal; *Bus Transportation*, 11 February 1922, 115.

13. Richard J. Solomon and Arthur Saltzman, *History of Transit and Innovative Systems* (Washington, D.C., 1971), 1–20. Solomon and Saltzman wrote their report as members of the Massachusetts Institute of Technology's Urban Systems Laboratory, which was researching the history of urban transit as a means of judging the potential for then-new technologies, especially computer-dispatched minibuses. They describe buses as "a major innovation" and streetcars as "essentially ancient, obsolete equipment," deploring streetcar companies' failure to embrace buses more rapidly and to use them more innovatively; 1–26, 3–1. Snell (n. 3 above) cites this study (A-30), and is in turn cited by St. Clair (58). San Antonio, population 200,000, replaced all of its streetcars with buses in 1932 and 1933, but as of 1936 streetcars still dominated America's major cities. John Anderson Miller, *Fares, Please! A Popular History of Trolleys, Horsecars, Streetcars, Buses, Elevateds, and Subways* (New York, 1941), 163.

14. *Taken for a Ride* (n. 5 above).

15. *Bus Transportation*, September 1935, n.p.; ellipsis in original.

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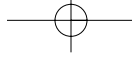
YELLOW TRANSIT 718—40 PASSENGERS—The outstanding success of the 95 Yellow 40-passenger coaches on the Fourth & Madison line was largely responsible for the city-wide movement to substitute buses for trolleys. Embodying every feature for rider appeal and mechanical excellence these coaches in eight months' operation have established themselves as the outstanding coach for mass transportation.

FIG. 1 Yellow Coach advertisement, 1935, boasting of Manhattan's switch from trolleys to buses. (*Bus Transportation*, September 1935, 26. Courtesy of the Columbia University Library.)

New York's experience is not easily explained by either the conspiracy or the technical superiority theses. Motorization was not the work of a few shady financiers, but a policy openly advocated by many of New York's city officials and civic groups. On the other hand, New York transit companies were hardly in a position to make calm, reasoned choices about what technology would best serve passengers. Motorization occurred in a turbulent context of aggravated conflict between city administrations and private transit companies, for whom technical efficiency was only one of many factors to be considered in choosing a vehicle type. It also took place at a time when the street railways were fighting for survival. The relative power of local politicians and the weakness of the transit companies encouraged the adoption of the bus.

The Transit Industry in Crisis

On 26 November 1832, a team of horses launched local rail transit in Manhattan, pulling the streetcar "John Mason" north along Fourth Avenue for the New York and Harlem Railroad Company, the nation's first street railway. The line prospered, encouraging other companies to seek franchises. In the boom years of the 1850s, eager applicants were happy to agree



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to detailed requirements in their contracts. They agreed, for example, to pave and maintain the street between their tracks and eight additional feet on either side. Contracts specified the fare, frequency of service, and type of vehicle and power to be used. Companies also offered cash payments to the city, in the form of a portion of their gross revenues or flat payments per car or per year. Some officials felt that the city should hold out for better terms, but the applicants bribed the board of aldermen and walked away with what seemed to be generous contracts.¹⁶ Many were valid for 999 years, to guarantee that if the city chose to revoke the contracts it would have to condemn the railways and compensate their owners.¹⁷

In 1872, when equine distemper disabled eighteen thousand horses, the street railway companies began thinking about other means of power.¹⁸ New steam-driven cable cars were speedy, but efficiencies of scale demanded that they run on a large network of lines rather than on the small area covered by an individual franchise. With this in mind, a group of businessmen began purchasing horse railways or leasing their franchises in the early 1880s. By 1896 their Metropolitan Traction Company dominated street transit in Manhattan. In 1895 the company began to convert from cable power to electricity, though a strong local tradition against overhead wires forced it to invest in a more expensive system of electric conduits between the rails.¹⁹

By the time the capstone was placed on the Metropolitan's edifice, the foundation was already crumbling. The company's owners had watered its stock and invested millions in electrification, counting on continually rising patronage to pull it out of debt. But the rise of the automobile and the city's decision to build a subway undercut that assumption. In 1905 the Interborough Rapid Transit Company (IRT), builder of New York's first subway, swallowed the Metropolitan.

Floored by the depression of 1907, the merged company went into receivership and was reorganized into several separate transit companies, including the IRT subway and New York Railways, which inherited the bulk of the Metropolitan's Manhattan streetcar lines. Almost immediately the new surface companies found themselves in financial trouble. In the early 1910s some automobile owners began offering "jitney" service, skimming customers during peak periods and cutting into the transit companies' profits.²⁰ In 1916 transit workers throughout the city struck over wages and

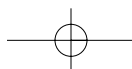
16. Harry J. Carman, *The Street Surface Railway Franchises of New York City* (New York, 1919), 17–23, 25–26, 41–50, 78–91.

17. Charles W. Cheape, *Moving the Masses: Urban Public Transit in New York, Boston, and Philadelphia, 1880–1912* (Cambridge, Mass., 1980), 42.

18. Goddard (n. 5 above), 66; K. H. Schaeffer and Elliott Sclar, *Access for All: Transportation and Urban Growth* (New York, 1980), 22.

19. Cheape, 48–49, 56, 61–62.

20. Gurin (n. 10 above), 6.



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collective bargaining. Although the transit companies won the strike, it cost them both money and workplace harmony.²¹ Wartime inflation reduced the value of a nickel by December 1919 to only 42 percent of its 1913 value, but under their franchises the companies could not raise fares to compensate.²² On 30 March 1919, New York Railways Company went into receivership. The Eighth Avenue Railway Company split off in July, and the Ninth Avenue Railway Company followed.

Much of the streetcar companies' financial distress resulted from continued loss of riders to subways and automobiles. Between 1915 and 1927 the number of automobiles registered in New York City rose at the rate of 20 percent per year from 39,280 to 612,588. Subway ridership on the IRT, which mostly served Manhattan, increased from 586 million in 1920 to 932 million in 1929. But ridership on Manhattan streetcar lines dropped from a peak of 388 million in 1922 to 293 million in 1929. Nevertheless, no transportation planner could deem surface transit unnecessary, for no rival system could absorb its riders easily.²³

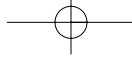
Transit companies throughout New York State suffered similar fates, and in the early 1920s they sought to regain profitability. Recognizing the erosion of the nickel fare by wartime inflation, the state public service commission allowed cities to permit fare increases, and by 10 December 1919 Albany, Syracuse, Utica, and Troy had allowed their traction companies to charge six cents. But New York City rejected any increase. Charles E. Chalmers, receiver of the bankrupt Second Avenue Railroad, despaired of gaining relief. "The five-cent street car fare has become an American institution, and, as railroad operators, we must realize that this question of fare will be constantly with us. It will be a stumbling block as long as street cars run, and in New York City our people are wedded to the five-cent fare."²⁴

21. Joshua B. Freeman, *In Transit: The Transport Workers Union in New York City, 1933–1966* (New York, 1989), 19–21.

22. Delos F. Wilcox, *Analysis of the Electric Railway Problem* (New York, 1921), 120. Had the heavily indebted street railways been able to raise their fares, they might in fact have benefited from the inflation by paying off their bonds with inflated dollars. But with a fixed fare and rising costs, they were generally unable to pay anything at all to their bondholders. By 1921 deflation had restored the nickel, but the traction companies never regained financial stability.

23. E. W. Estes, "Does Manhattan Need the Surface Cars?" *Harlem Magazine*, January 1929, 13–14; "City Transit Load Up 33% in 10 Years," *New York Times*, 18 November 1929; LeRoy T. Harkness, "A Review of New York's Transit Situation," *Electric Railway Journal*, 6 October 1923, 553–57.

24. New York Electric Railways Association (NYERA), *Thirty-Seventh-Eighth-Ninth Annual Reports* (Schenectady, N.Y., 1921), 154–55, 373. The only exception was the seven-cent fare charged by the uptown branch of the Hudson and Manhattan Railroad, which served New Jersey and therefore was regulated by the Interstate Commerce Commission. Wilcox, 204; NYERA, *Thirty-Seventh-Eighth-Ninth Annual Reports*, 162.



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Companies also reduced labor costs by combining the jobs of motor-man and conductor. As David Jones has pointed out, “handling horses and collecting fares was a job for two men in the era of horsepower; it continued by custom and contract guarantee in the period of electric traction.”²⁵ By the 1920s this custom was a luxury that the traction companies could not afford, and they began experimenting with one-man cars.²⁶

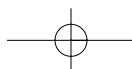
The traction companies pleaded for reduced taxes. In the rosy days of the nineteenth century, street railway companies had happily promised payments that their twentieth-century descendants found difficult to meet. In addition to the general taxes paid by any corporation doing business in the city and state, franchises specified that the companies pay a certain percentage of gross revenues, usually five percent. Because these payments were made from gross, not net, revenues, payments continued even when the companies were losing money. New York’s street railways then paid a special franchise tax on property in the streets, including not only the physical rails and conduits but also a tax on their rights of way. For New York Railways and the Second Avenue Railroad, this tax alone consumed more than ten percent of operating revenues.²⁷ Finally, the street railways’ franchises stipulated that the companies would pave the streets on which their tracks ran and remove snow on those streets (fig. 2).

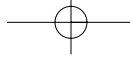
Alfred T. Davidson of the Third Avenue Railway System of New York City made the companies’ case against “Tax and Paving Requirements Now Imposed on Street Railroads and the Resulting Unfairness and Discrimination.” He argued that one branch of government, the state public service commission, regulated rates and service, while other branches imposed taxes. Without communication between these branches to keep taxes proportionate to income, “the street surface railroads are being ground between the upper millstone of service and rate regulation and the nether millstone of taxation burdens.” Davidson complained that the nickel fare was archaic, and that if city and state governments would not increase fares to reflect improved service, they could at least reduce taxes: “When a passenger now pays a street car fare on a double truck, electrically heated street car, he is, because of the reduced purchasing power of the dollar, paying to the railroad company only one-half in purchasing power of what he paid under conditions years ago when the five-cent fare was first established for a ride in single truck, unheated horse cars. Since the municipalities have been so insistent in keeping down street railroad fares, the state in fairness should reduce the grievous tax burdens now imposed on street surface rail-

25. David Jones, *Urban Transit Policy: An Economic and Political History* (Englewood Cliffs, N.J., 1985), 30.

26. NYERA, *Thirty-Seventh-Eighth-Ninth Annual Reports*, 377. I use the term “men” advisedly; female transit workers were extremely rare in this period.

27. Wilcox, 85–86.



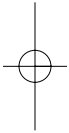


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FIG. 2 Broadway and 176th Street, 1919, with a streetcar and pavement paid for by the transit companies. (United States History, Local History and Genealogy Division, The New York Public Library, Astor, Lenox and Tilden Foundations. Reproduced with permission.)

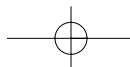


roads.” He particularly resented the paving obligation, which, like the nickel fare, seemed an obsolete vestige of the nineteenth century:

The paving obligations now imposed on street railroads is a relic of the days of horse cars, when the horses traveled between the rails and outside of the rails, and did cause more or less wear and tear of the pavement. It is important, however, to also note that this paving obligation is a relic of the time when the nature of the pavement was very simple—cobblestone or granite block pavement on sand foundation or macadam—and the obligation thereby imposed upon street railroads merely contemplated the relaying of cobblestones or granite block pavement on sand foundation or the filling in of macadam pavement, and not such an obligation as now exists, with the improved types of pavements involving the enormous expenditures reflected in the figures to which we shall refer.²⁸

Those figures were impressive. “During the ten years from 1911 to 1920, the street railroads of New York State each year expended for paving alone

28. NYERA, *Fortieth and Forty-First Annual Reports* (Schenectady, N.Y., 1923), 86–104.





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an amount equal to an average of 23.4% of their net income, or to put it another way, the paving expense has amounted to approximately 5% of the total operating expenses of street railroads during that time.” In New York City, street railroads maintained 35 percent of total paved area. (Snow removal also ate revenues; New York Railways estimated that a typical winter’s snowstorms cost the company two hundred thousand dollars.)²⁹

To add insult to injury, the ailing street railways were being bled to nourish their rubber-tired rivals. For while an electric streetcar ran entirely on rails, and thus (according to Davidson) did not wear out the pavement at all, the automobile and the bus, which paid no paving fees, wore down the paved surface. J. C. Thirwall, of General Electric’s railway engineering department, seconded this point: “So long as municipalities offer the use of smooth pavements free of charge to all commercial vehicles and compel the railway company to pay not only for its own tracks but for much of the paving as well, a considerable bonus is offered to users of buses.”³⁰ The New York Electric Railway Association formed a paving committee, which unsuccessfully lobbied the state legislature for relief.³¹

Mayor Hylan’s War against the Transit Companies

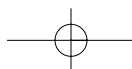
The real battle would be fought at city hall, not at the statehouse. In cities throughout the United States, street railways faced antagonistic elected urban officials. Their monopolistic profits in the 1890s had stained transit companies as greedy, dangerous menaces.³² Politicians saw them as handy villains, and none more so than the mayor of New York, John F. Hylan, a Tammany Hall Democrat. An obscure Brooklyn judge until he was chosen for the 1917 Democratic mayoral nomination by newspaper magnate William Randolph Hearst, Hylan remained loyal to Hearst throughout his time in office and obeyed Hearst’s orders. Though he seems to have had a personal reason to dislike the traction companies (in 1897, at the age of twenty-nine, he had been fired from his job as engineer on the Kings County Elevated), most of his animosity toward them probably reflected Hearst’s more sweeping campaign against what he called “the Traction Trust,” which had begun in the 1890s. For both men, the attack on private ownership of mass transit seems to have mixed a sincere and Progressive hostility toward monopolies with a demagogic willingness to oversimplify

29. “Plan Fight on Higher Fares,” *New York Times*, 21 July 1919.

30. “A.I.E.E. [American Institute of Electrical Engineers] Discusses Cars and Buses,” *Electric Railway Journal*, 28 October 1922, 715. For individual companies, the charge could be much worse. In 1924, the city demanded from the New York and Queens County Railway \$340,000 in paving charges, roughly 52 percent of its gross revenues; “Transportation vs. Paving,” *Electric Railway Journal*, 17 May 1924, 762.

31. NYERA, *Fortieth and Forty-First Annual Reports*, 182.

32. See Bianco (n. 9 above), Bottles, and Barrett (n. 8 above).



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economics for the sake of getting votes. With the support of Hearst's newspapers and a platform centered on municipal ownership of transit—whether through the purchase of existing privately operated systems or the construction of competing systems—Hylan won the mayor's office.³³

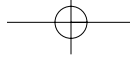
Once elected, Hylan fought his main battles against the two private companies that operated the city's subways: Interborough Rapid Transit (IRT) and Brooklyn Rapid Transit (BRT, later BMT). But like Hearst, he did not always distinguish between the subway and surface lines when he railed against "the traction interests." This conflation could produce strange results. For example, in a 1919 speech, Hylan claimed that the subways were profitable, and therefore did not need an increased fare, while the surface lines were steadily losing traffic and therefore did not merit an increased fare.³⁴

The first battle in the surface campaign was fought over fares. In July 1918, New York Railways went straight to its passengers, distributing flyers describing its plight. The company argued that rising wages and costs for metals and electricity threatened it with bankruptcy, and it appealed to its riders to petition the city and state to allow fare increases during the war. "The situation is the inadequacy of peace provisions to meet the unforeseen exigencies of war," pleaded the company. "Is there a patriotic citizen who is unwilling to do his share in the general business readjustment that the war necessitates? BEAR YOUR SHARE! PAY FAIR FARE!"³⁵ Though dozens of riders wrote to Hylan stressing the unfairness of fixed prices for streetcars when all other prices were rising, Hylan refused to permit increases. Instead, he formed the "Mayor's Vigilance Committee of One Thousand, Formed for the Purpose of Fighting the Traction Interests in Their Endeavor to Obtain an Increased Fare," a group designed to pressure assembly candidates to pledge to vote against any fare increase for subways or streetcars. Hylan told the committee that "an arbitrary increase of fares is an imposition upon the people. It is illegal because it breaks a contract. It is inexcusable. And as long as I am Mayor I shall continue to oppose it in the interest of every class—the poor that should not be taxed illegally, and

33. Michael W. Brooks, *Subway City: Riding the Trains, Reading New York* (New Brunswick, N.J., 1997), 74–105; Joel Fischer, "Urban Transportation: Home Rule and the Independent Subway System in New York City, 1917–1925" (Ph.D. diss., St. John's University, 1978), 38, 86–87, 90; and Clifton Hood, *722 Miles: The Building of the Subways and How They Transformed New York* (Baltimore, 1993); 185–197. All three of these accounts focus on the Hearst/Hylan battle against the private companies running underground railroads, rather than the parallel campaign against the surface lines. Hearst's hostility to transportation monopolies can be traced back to the coal strike of 1902. Roy Everett Littlefield III, *William Randolph Hearst: His Role in American Progressivism* (Lanham, Md., 1980), 91.

34. John F. Hylan, typescript of a speech given 8 October 1919, John Francis Hylan Papers, New York Municipal Archives (hereinafter Hylan Papers), box 198.

35. New York Railways Company, *Facts! and Fare Fare*, July 1918.



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the rich, to whom the price of a car fare makes no difference, but to whom public peace is most important.” Here he alluded to riots that had broken out in Camden, New Jersey, after the trolley system there instituted a zone fare system.³⁶

Rebuffed on fares, the street railways took a different tack. In July 1919, Job Hedges, the receiver of the New York Railways, gained court permission to abandon four unprofitable crosstown lines on Manhattan’s Lower East Side. Hedges claimed that though they carried over a million passengers a month, these lines lost four hundred thousand dollars a year, and that they had to be sacrificed in order to protect the more important longitudinal routes. According to the *New York Times*, “he hoped the responsibility for the cutting off of the crosstown service would rest with the municipal authorities.”³⁷

Hylan called Hedges’s bluff. He blamed the action on a callousness worthy of Marie Antoinette, quoting Hedges as saying, “Let the east-side walk.”³⁸ Then he reached for a new weapon: the motor bus. In his campaign against the subway companies, Hylan faced the difficulty of creating any sort of rapid transit to compete with the privately operated lines; building an independent subway would take years. But with a handful of rundown buses he could compete against the surface lines almost overnight. In September 1919 he began to do just that, commissioning small entrepreneurs to run buses on the abandoned routes.³⁹

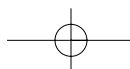
Hylan’s “emergency” buses (as they would be known throughout the 1920s) were small, twenty-seat affairs (fig. 3), which a motor bus company seeking a citywide contract called “shabby, worn, unsanitary, low and overcrowded ‘coops.’” The *Electric Railway Journal* (written for and largely by streetcar men, and therefore a somewhat biased source) called them “totally unreliable so far as schedules are concerned and wholly inadequate to meet traffic demands.” After a Queens bus caught fire, the state transit commission investigated buses throughout the city and called them firetraps. The *New York Times* called them “tawdry transportation.” Nevertheless, the

36. For letters supporting a fare increase, see Hylan Papers, box 198. On Hylan’s committee, see “Says City Can Run Subways,” *New York Times*, 9 October 1919, and Hylan, speech, 8 October 1919. On Camden, see “Militia to Guard Camden Car Lines,” *New York Times*, 18 September 1919.

37. “East Side Loses Four Surface Lines,” *New York Times*, 12 September 1919. These lines were expensive in part because they lacked electrical conduits in the street and instead were powered by inefficient storage batteries.

38. Hylan to John E. Weier, 30 September 1919, Hylan papers, box 198.

39. Though painted with the words “Department of Plant and Structures,” the buses were all privately owned and operated. The city had run similar buses during streetcar strikes in Manhattan and Brooklyn, but only for a short time. If the motor bus was for Hylan a means to an end, one could say that Hylan himself was a means by which Hearst pursued his agenda. The very language of urban politics suggests such a technological relationship: Hylan was a tool of Hearst and a machine politician.



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FIG. 3 An "emergency bus," 1928, boldly painted with the words "City of New York Department of Plant & Structures," though in fact privately owned and operated. The five-cent fare is proclaimed near the door. (Motor Bus Society, San Jose, Calif. Reproduced with permission.)

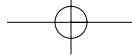
buses did one thing Hedges said New York Railways could not do: they offered crosstown service on a five-cent fare.⁴⁰

The emergency buses operated with several key advantages. They did not make the crushing interest payments faced by the streetcar companies. Not required to issue or accept transfers, they took in 5.5 cents per passenger mile, compared to only 3.5 cents for the streetcars.⁴¹ What really galled the streetcar's defenders were the subsidies Hylan gave the buses. Whereas the streetcar companies paid millions in taxes, the buses paid no taxes or paving charges.⁴² The *Electric Railway Journal*, a keen observer of unfair treatment, noted that "under the illegal [bus] operation that has been carried on the city has not received a cent, and in addition has spent consider-

40. John A. Beeler, "Coach and Bus Operation in New York," *Electric Railway Journal*, 9 August 1924, 197; "N. Y. City's Transit Problem and the Hylan Administration," *City Topics*, August 1921, 1; "Inquiry Into Bus Operation Proves Lively," *Electric Railway Journal*, 28 October 1922, 722; "Wildcat Buses in New York a Menace," *Electric Railway Journal*, 29 November 1924, 936. "Bus Franchises" (editorial), *New York Times*, 8 January 1932. By embarrassing the established transit companies, the upstarts served as a "yardstick," a demonstration that a service could be provided at a lower cost than the minimum claimed by public utility or other companies. Thomas K. McCraw, *TVA and the Power Fight, 1933–1939* (Philadelphia, 1971), 30.

41. Beeler, 198; "Street Railway Not Inherently Faulty in New York Situation," *Electric Railway Journal*, 8 November 1924, 794.

42. Beeler, 198.



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able money for salaries of starters, superintendents and the like.”⁴³ Moreover, according to the journal, “on account of [bus operators’] lack of financial responsibility a total of more than \$1,000,000 in potential damage claims has piled up against the city.”⁴⁴

A million dollars gained or lost by the city treasury hardly mattered to Mayor Hylan. His emergency buses had two functions. First, they were meant to control the transit companies by making it difficult for them to demand increased fares. “The Board of Estimate and Apportionment . . . will not be swerved from its sworn duty to protect the people’s interests by the demands of the companies for increased fares, whether these demands are made through the medium of controlled newspapers, hired editors and agitators, threats, appeals to courts for appointment of receivers, favorable decision from legal tribunals, legislative lobbying and slush funds, and the deliberate attempts to obstruct the city in its efforts to meet transit emergencies through the operation of modern buses.”⁴⁵ Hylan spoke less about a second function of buses: to divert money to his relatives and Tammany cronies. Clarence J. Shearn, the special counsel of the state transit commission, declared in October 1922 that the crosstown bus arrangement “smelled to heaven.” He cited several means by which the ownership of the bus companies had been disguised, and city officials and Hylan’s son-in-law had received kickbacks in the form of inflated garage rentals, insurance payments, and bus purchases.⁴⁶

The street railways fought back, suing the city for infringing their monopolies. But whereas the long history of powered street railways—first cable, then electric—had clarified the laws of street railways, the motor bus was new and therefore less stringently regulated, and for every injunction there came a stay. The legality of the emergency buses would be debated into the 1930s.⁴⁷

After the 1920 election swept Republicans into national and state office, New York City’s transit became a pawn in the perennial chess game between upstate Republicans and city Democrats. Hylan won reelection in 1921 largely on the linked issues of home rule, transit improvements, and the five-cent fare.⁴⁸ Though both the state and city governments favored municipal ownership of New York City’s transit, they disagreed on how much the city should pay for privately owned underground, elevated, and surface rail-

43. LeRoy T. Harkness, “A Review of New York’s Transit Situation,” *Electric Railway Journal*, 6 October 1923, 558. Harkness was a member of the New York Transit Commission.

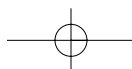
44. “Inquiry Into Bus Operation Proves Lively.”

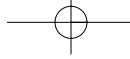
45. Hylan, speech (n. 34 above).

46. “Political Favoritism a Factor in Securing Bus Permits,” *Electric Railway Journal*, 4 November 1922, 759.

47. “More Delay for Buses” (editorial), *New York Times*, 30 March 1932.

48. Fischer (n. 33 above), 146.





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ways. The state transit commission's valuation committee based its calculations on the cost of replacing the street railways, and valued the major systems at tens of millions of dollars. But Hylan did not want to pay that much.

Hylan was willing to pay for transit—his own proposal, which included much new subway construction, would cost at least six hundred million dollars. But Hylan had no desire to bail out his sworn enemies, the traction interests. To challenge the transit commission's valuations, Hylan again turned to the motor bus. By contending that the motor bus had made the electric streetcar obsolete, he could argue that the street railways were essentially valueless, and could be acquired for a pittance.⁴⁹

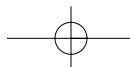
To make this case, Hylan turned to William A. DeFord, a fellow lawyer and ally of William Randolph Hearst. DeFord in turn sought help from John Bauer, an expert in the regulation of public utilities who had previously worked for the city. Bauer was no Tammany hack; in fact, he called for politically appointed regulatory commissions to be replaced with panels of technical experts. But he did firmly believe that technical obsolescence must be factored into depreciation in evaluating assets, and though he had no particular expertise in transportation, he believed that "a large number of people" preferred buses over streetcars "due to their more rapid operation and the greater flexibility of the service." These beliefs made Bauer a potent weapon in Hylan's hands.⁵⁰

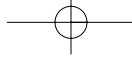
DeFord and Bauer provided their own accounting and concluded that the state bureau had been generous with the street railways. Given the deterioration of tracks and rolling stock, they argued, depreciation was greater, and the cost of replacement correspondingly less. Thus, while the state had judged the replacement cost of New York Railways to be \$29.9 million, the city pegged it at \$25.5 million. For the Third and Second Avenue systems, the state valuations were \$34 million and \$4.8 million, and the city estimates \$18 million and \$3.1 million.⁵¹ Cutting down the valuations by 15

49. In the overall realm of public utility law, conflicting judicial opinions made valuation, and therefore rate setting, an ambiguous procedure, subject to political wrestling; McCraw (n. 40 above), 14, 29.

50. "City Names De Ford to Analyze Transit," *New York Times*, 23 December 1921. John Bauer, *Effective Regulation of Public Utilities* (New York, 1925), 140–41, 352. This book is as much concerned with other utilities as with street railways, and the statement about popular preferences appears only as an offhand example illustrating the importance of considering obsolescence, not as a supported argument. Bauer later coauthored a book arguing that "in general street railways in all the cities should be replaced as rapidly as practicable with modern buses"; John Bauer and Peter Costello, *Transit Modernization and Street Traffic Control: A Program of Municipal Responsibility and Administration* (Chicago, 1950), 52.

51. *Report of William A. DeFord, Special Counsel, designated to direct the City's Survey of the Transit Commission's Proposed Plan of Readjustment of Transit Facilities, its Valuation of Street Railway Properties, and Related Matters*, 26 February 1923, app. D, 10, Hylan Papers, box 199.



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percent to 47 percent would be dramatic enough, but Bauer went further. He proposed an entirely different method of calculating a fair price for the railways: future earning power. If Bauer could show that street railways were obsolete, then the companies' property would be essentially worthless, and the city could name its price. So he argued that two new technologies—the subway and the bus—had superseded the street railways.

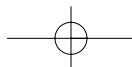
Examining the subways, Bauer argued that “as the new [rapid] transit lines were placed into service, gradually a larger and larger portion of the long distance and moderate distance passengers left the surface lines and went to the rapid transit, at the present time, therefore, the surface lines have left practically only the short distance traffic, which is not sufficient to pay a return on the physical valuation as ordinarily determined, and at the same time would not stand a higher fare than 5 cents, even if the franchise permitted.”⁵² This argument failed to note that short-haul traffic was the most profitable service under a fixed fare regime, for more fares could be collected for the same outlay of equipment and labor. Moreover, if the city were so confident that market forces would maintain a five-cent fare, then why had Hylan worked so strenuously for five years to legally prevent any increases?

Bauer hesitated to promote buses, a newer technology with much less history in Manhattan. Though he believed that “many of the lines might better be replaced by buses,” he counseled that “the practical procedure would be to prove out the practical operation of buses gradually, without committing the City to a huge bus investment before the advantages of bus operation has been definitely established.” Yet he argued that the street railways were indeed obsolete and therefore had minimal future earning potential. And based on his assumptions, he recommended drastically lower valuations for Manhattan's street railways. For the Third Avenue system, including elevated rapid transit, he recommended an \$18.1 million valuation, slightly higher than his figure based on replacement costs. But for the New York Railways system, which had cost \$45 million to build, he suggested a tiny \$5 million. For the money-losing Second Avenue Railway, he recommended a valuation of nothing at all.

Not only could buses lower the price the city would offer the transit companies for their properties; in Bauer's view, they could force the companies to accept that lowered price. As Bauer put it:

The City . . . should negotiate for the acquisition of all the existing surface lines. This could be done through direct negotiation and by bidding at foreclosure sales in the course of reorganization. If the properties can be purchased at a satisfactory price, it would be desirable to have them all under complete control [of] the City. If, how-

52. Memorandum, Bauer to DeFord, 15 August 1922, 15, Hylan Papers, box 199.





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ever, the companies are not willing to take a reasonable price, they should be permitted to keep their properties and be compelled, as previously stated, to furnish proper service at the rate fixed by franchise or contract. Then, however, the City through The Corporation would bring to bear all possible competition pressure, particularly the extension of bus operation wherever feasible, so as to force the companies to the point where they will be willing to negotiate with the City at reasonable terms.⁵³

Here, in a nutshell, was Hylan's surface transit policy: to use buses to weaken the transit companies so that they would be forced to accept the city's low bid for their properties.

The Companies Surrender

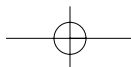
In the early 1920s, New York transit companies remained committed to the streetcar. Transportation engineer John A. Beeler reported to the New York State Transit Commission in 1923 that motor buses would not be able to replace streetcars in New York City. They were, indeed, cheaper to operate by some measures: Beeler calculated that the average American streetcar cost 45.7 cents per mile to operate, while "the total cost of service, averaged from the American companies operating two-man buses, is 41.5 cents per bus-mile, exclusive of wear and tear on paving." But buses were smaller, with fewer seats. And, argued Beeler, their "lurching and abrupt movements" made them unsuitable for carrying standing passengers. On a busy route, where streetcars could be packed with standees, "the cost of bus service [not including paving] is approximately 65 per cent greater than the average cost of the street railway service."⁵⁴

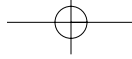
Beeler further argued that buses would aggravate traffic congestion in New York, where the number of automobiles had doubled between 1919 and 1923.⁵⁵ He noted that it took 1,002 streetcars to serve Manhattan during rush periods, and that to provide equivalent bus service with a seat for every passenger would take 2,538 buses. On busy streets, he hypothesized, seven buses per minute would be required, and that would result in "an

53. *Report of William A. DeFord*, app. D, 5, 10.

54. John A. Beeler, "Buses Could Not Fill Place of Street Cars in New York City," *Electric Railway Journal*, 13 January 1923, 87-89; the article is an abstract of Beeler's report, which I was not able to locate. Thirlwall of General Electric made similar calculations, claiming that "except for relatively short hauls on selected routes where no attempt is made by a bus company to provide the extra equipment demanded by rush-hour traffic, a railway could show materially better financial returns on its entire investment and be much more successful in handling mass transportation than a bus line"; "A.I.E.E. Discusses Cars and Buses" (n. 30 above), 715.

55. *Greater New York* (Bulletin of the Merchants' Association of New York), 11 February 1924, 8.





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intolerable congestion. Indeed it is highly questionable if they could receive and discharge their passengers and move through the streets.”⁵⁶ Daniel L. Turner, a state transit commission engineer and a subway loyalist, concurred with Beeler. His figures showed that the single-deck, twenty-six-seat municipal buses then in operation in New York required 6.35 square feet of street space per seat, compared with 5.71 square feet for a typical one-man streetcar. More to the point, in peak periods the streetcar could hold as many standees as seated passengers, with a net requirement of only 2.86 square feet per passenger, while the bus, which could hold only half as many standing as seated passengers, required 4.14 square feet, 45 percent more than the streetcar. Turner did believe that buses had their role; in 1922 he had proposed using them to replace some trolley lines in outlying parts of Brooklyn. But he did not think they were the answer in crowded Manhattan. Some city merchants worried that buses had higher long-term costs and would increase congestion.⁵⁷

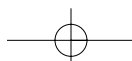
Bus advocates, many of them associated with the Hylan administration or aspiring transit companies, took issue with such claims. Grover Whalen, Hylan’s commissioner of plant and structures, pointed to the fact that “buses are operating at a comfortable profit at a five-cent fare on lines abandoned by trolley companies as unprofitable. This is not a carefully figured demonstration of the lower cost of transportation by gasoline buses, but it is more eloquent and more convincing than mere figures.” (Whalen did not mention that those buses were not paying any of the taxes their railborne predecessors had paid.) Whalen also disputed the streetcar’s greater capacity, claiming that “the motor bus has grown. The vehicle designed by this department will carry thirty-three seated passengers and twenty-seven standing—a total of sixty.”⁵⁸

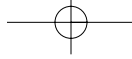
Bus advocates claimed that buses would reduce congestion. One hopeful bus company told the public that “the bus . . . passes around obstacles and obstructions. It is like the nimble deer, as it were, going here and there, from one current of traffic to another, eliminating danger and annihilating time. If one street be blocked,—well, the bus will make a detour and go by

56. Beeler, “Buses Could Not Fill Place of Street Cars,” 87–88.

57. “New York Merchants Urge Co-ordinate Transit,” *Electric Railway Journal*, 7 March 1925, 372; “Transit Plan Drops 26 Brooklyn Lines, 146 Miles of Track,” *New York Times*, 2 March 1922. On Turner’s career, see Hood (n. 33 above), 198. Air pollution, a major concern of transit analysts today, was not emphasized by streetcar advocates in the 1920s.

58. “A.I.E.E. Discusses Cars and Buses,” 716. Donald Davis’s work casts doubt on Whalen’s arguments. Davis states that “as of 1928, a 33-seat motor bus could only accommodate seven standees.” Moreover, the larger the bus, the less advantage it enjoyed over the streetcar. A larger vehicle would take longer to pick up and discharge passengers at each stop, and it would be less able to dart through heavy traffic. Donald Davis, “Technological Momentum, Motor Buses, and the Persistence of Canada’s Street Railways to 1940,” *Material History Review* 36 (fall 1992), 12–13.





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way of another street. If an automobile be stalled in front of it,—well, what of it?—the bus will go either to the right or to the left of it. . . .”⁵⁹ F. Van Z. Lane, an automotive transportation expert, claimed that “street traffic congestion will be lessened and consequently street traffic capacity will be increased by employing 5,000 flexible buses in place of 4,000 inflexible and larger streetcars.”⁶⁰ But elsewhere in the same report Lane also noted that at peak periods there were only twenty-five hundred streetcars operating in the city. Replacing them with five thousand buses would no doubt severely increase congestion. As for “flexibility,” Dugald Jackson testified to Congress that buses “would cause more than a proportionate addition to the traffic confusion because they would travel at will over the street, instead of being confined to certain definite channels like the street cars.”⁶¹

Technical arguments on either side had little weight. By 1924 a preference for motor buses had become official policy, and city officials no longer felt the need to go into great detail to justify their decision. In October 1924, the city board of transportation simply stated that the bus was cheaper, safer, more flexible, and less congestive than the streetcar, without offering any evidence. In the later 1920s and 1930s, these assertions would be repeated so often that the motor bus would seem the inevitable choice.⁶²

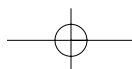
Nineteen twenty-four marked the turning point; streetcar companies began to see buses as the solution to their problems. The companies first tried to use the bus as a way to break the tyranny of the nickel fare. In 1905 the luxurious, and profitable, Fifth Avenue Coach company had successfully lobbied for a raise from five to ten cents as it converted from horse-

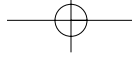
59. “Bus vs. Trolley Car” (n. 2 above), 3.

60. Lane was a lecturer on motor truck transportation at New York University and had been an engineer at Packard and at Locomobile; see F. Van Z. Lane, “Bus Substitution and Operation in place of Surface Car Lines in Greater New York,” October 1922, Hylan Papers, box 199, a report that Lane submitted to William A. DeFord, who had been appointed by the mayor to investigate transit. While I do not have any proof that Lane was paid, it seems pretty evident that DeFord commissioned the report. In it Lane advocated replacing all of New York City’s streetcars with single- and double-deck buses run at a five-cent fare. To show that bus service would be economically efficient, he starts with the double-deck buses of the Fifth Avenue Coach company, then running profitably at a ten-cent fare. Since the typical streetcar ride was shorter than the typical bus ride, he noted that streetcars had more passengers per mile (11.7 for Manhattan lines, 9.3 for New York City as a whole) than the Fifth Avenue coaches (5.6). Buses following streetcar routes with more passengers per mile would rake in profits, even on a nickel fare. Lane did not consider the havoc that would be caused by all of this getting on and off of a double-decker bus with its single spiral staircase or the disinclination of passengers to ride on the open upper deck in cold or wet weather. Nor did he factor in the likelihood that bus substitution would end the transit companies’ contribution to paving and snow removal.

61. Wilcox (n. 22 above), 296.

62. New York City Board of Transportation, *Report of Board of Transportation to the Board of Estimate and Apportionment on Petitions for Omnibus Franchises*, 15 October 1924.





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drawn to gasoline vehicles.⁶³ By 1924 the streetcar companies wondered if bus conversion would do the same for them.

In early 1924, engineer William P. Kennedy suggested a “de luxe type of bus service at a double rate of fare” to “incline . . . patrons to admit that under changing conditions [the bus operator] should receive more money for a satisfactory transportation service [and] would create a disposition to accept a graded rate of fare.”⁶⁴ J. A. Emery concurred, writing: “it is a great mistake for the public as well as for the railway to attempt co-ordinated bus service at the same rates of fare as the railway in every case for this seriously curtails the usefulness of the bus in the public service.” He too felt that one of the best uses of the bus would be to provide a deluxe service for those willing to pay for a guaranteed seat.⁶⁵

The Third Avenue Railway, which operated mainly in the Bronx but ran a handful of streetcar lines in Manhattan, acted first. On 19 January 1924, the company asked the city for permission to run a ten-cent bus line on the Bronx’s Grand Concourse, citing the failure of a five-cent bus line as justification for the higher fare.⁶⁶ Hylan was outraged: “You don’t need to make any proposal here. Neither the Third Avenue Railway, nor the I.R.T., nor the B.M.T. can put anything over on us. Even if you offered to let the Bronx people ride free, I should vote against your proposition, for I should be sure there was some trick in it. You can’t get anything here during my administration. Your plan of a universal transfer is just another scheme to fool the people. I will vote against your proposal on general principles.”⁶⁷ Those principles had nothing to do with fares or vehicles; Hylan favored the proposal of Fifth Avenue Coach to run similar buses for ten cents on the same routes. Hylan’s real loathing was for the streetcar companies, whatever vehicle they used. He scheduled hearings for September to consider franchises

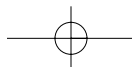
63. Cudahy (n. 10 above), 99.

64. William P. Kennedy, “The Motor Bus—Keynote of Expansion for Street Railways,” *Electric Railway Journal*, 26 January 1924, 145.

65. J. A. Emery, “Co-ordination of Bus and Trolley,” *Electric Railway Journal*, 9 February 1924, 213. Freight service was also split between a highly regulated rail sector and a largely unregulated truck sector. F. W. Watts, general express agent of an interurban based in Utica, argued that trucks enjoyed the unfair advantage of light regulation, and suggested that electric railways start using trucks to force the public service commissions to regulate trucking and even the playing field. “It is an old military axiom,” he wrote, “the best defense is an attack. I cannot but believe that carrying this war into the enemy’s territory will eventually result in the recapture of this great and growing business”; F. W. Watts, “Electric Railways Should Operate Trucks,” *Electric Railway Journal*, 2 February 1924, 184.

66. “Railway Wants to Run Concourse Buses,” *Electric Railway Journal*, 26 January 1924, 160. The Third Avenue system had not completely given up on streetcars. It introduced a new model in early 1925. “25,300-Lb. Single-Truck Car Seats 46,” *Electric Railway Journal*, 6 June 1925, 877.

67. “New York’s Mayor Suspicious of Railway’s Bus Proposal,” *Electric Railway Journal*, 24 May 1924, 825.



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for buses on streets without streetcar service, confronting the established companies with the threat of new rivals as dozens of investors applied.

New York Railways, just reorganized and enjoying more secure financing and a surer management team, replied with a drastic move. On 22 October 1924, the company offered to “rip up 46 miles of [streetcar] line at once and to substitute buses, with more possible abandonment ahead of more railway lines if events justified their replacement with buses. In general the officers are in agreement with the terms for operation set down by the City Transit Board.”⁶⁸ This offer went beyond the Third Avenue’s proposed use of the bus on an expansion line; New York Railways was sacrificing its most valuable bargaining chip—its trolley lines—a sign of surrender to Hylan’s demands.

Why this sudden switch? The design of buses had not radically improved, and prior to 1924, New York Railways had defended the streetcar against its gasoline rival.⁶⁹ The change may have reflected the arrival of the company’s new managers. Or it may have simply reflected an “if you can’t beat ’em, join ’em” approach after an exhausting five years of frustrating competition with the “emergency” buses. The company’s strategy suggests that its first offer to convert to buses expressed the hope that it could escape the onerous legacies of the nineteenth century: the nickel fare and paving duties. In its application for a bus franchise in early 1925, the company proposed a ten-cent fare on the longitudinal (north-south) bus routes. At the same time, it sought to abandon the railway lines on which it would run bus service. Doing so would save the company five hundred thousand dollars in repaving charges.⁷⁰ It was a conditional surrender; the companies would lose their investment in trolleys and the efficiency of the street railway, but would gain the regulatory advantages that buses had always enjoyed.

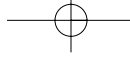
The Hylan administration celebrated the victory. As a 1924 board of transportation report on petitions for omnibus franchises put it, “in view of the aggressive opposition [to buses] displayed in the very recent past it was an interesting feature of this investigation that the representatives of every existing traction corporation who have appeared at the conferences have not only admitted but have asserted that the establishment of omnibus lines are necessary as an addition to the older methods of surface transportation.”⁷¹

68. “Lively Hearing in New York on Buses,” *Electric Railway Journal*, 25 October 1924, 744.

69. Some improvements were made to the bus in the 1920s, including moving the engine to the rear in 1927–28 (though even this advance did not become general until the 1930s); Barrett (n. 8 above), 177. But New York Railways’ offer to motorize in 1924, using front-engine buses like those being run by Fifth Avenue Coach and the emergency operators, suggests that engineering improvements were not the driving factor in Manhattan.

70. “Bus Report Presented in New York,” *Electric Railway Journal*, 28 February 1925, 350–51.

71. *Report of Board of Transportation* (n. 62 above), 5.



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The board wanted to make it perfectly clear that the companies had “admitted” the truth of the government’s position, that they had cried uncle.

The editors of the *Electric Railway Journal* were dismayed. Following the applications of New York Railways and Third Avenue to substitute buses for streetcars, they published an editorial defending the trolley. “With the many applicants fighting to obtain franchises for bus operation in New York City, the situation of the street railways is commonly looked upon as hopeless. Perhaps the situation is hopeless—if present politics and present operating methods are to continue. But this is so only if these conditions do continue, and not because of any inherent weakness in the electric rail system as compared to any newer form of transportation now available.” They blamed New York’s traffic regulation—“probably the worst in any large city in the United States, from the street railway standpoint”—and politics for crippling the streetcar and preventing modernization, and argued that “the fact that the existing system of surface transportation is not efficient is no reason to replace it by a system which is inherently unsuited to the conditions.”⁷² These industry representatives lamented the railway’s decision to violate sound engineering principles to pacify a hysterical mayor, but they were powerless to stop it.⁷³

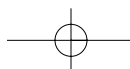
Motorization

Transit won Hylan two mayoral elections, but it also propelled him out of office. When Governor Al Smith, a Democrat, decided to consolidate his hold on Tammany Hall by replacing Hylan (allied with Smith’s rival, William Randolph Hearst) with a more pliant mayor, he appointed Justice John V. McAvoy to investigate the transit situation in New York City. McAvoy’s report focused primarily on subways, condemning Hylan for delaying construction. It also faulted his emergency bus program, noting that the buses were illegal and failed to pay taxes. The report deflated Hylan’s popularity, and Smith assured James John Walker the Democratic nomination for mayor in 1925.⁷⁴

72. “Street Railway Not Inherently Faulty in New York Situation,” *Electric Railway Journal*, 8 November 1924, 794.

73. One year after its first offer to motorize, New York Railways allied with Fifth Avenue Coach, and in May 1926 became its subsidiary. Since Fifth Avenue Coach was at that point interlocked with Yellow Coach, a bus manufacturing subsidiary of General Motors, Snell sees evidence that GM was behind the plan to motorize. Yet the fact that the railway’s first move toward conversion preceded purchase by a year suggests that the GM connection was a result, rather than a cause, of a change in policy. Snell (n. 3 above), A-30.

74. John V. McAvoy, *In the Matter of the Examination and Investigation of the Management of Affairs of The Transit Commission, Report of the Commissioner appointed under Section 8 of the Executive Law to Honorable Alfred E. Smith, Governor* (New York, 1925), 4–5; “Mayor Hylan Held Responsible for New York’s Subway Ills,” *Electric Railway Journal*, 14 February 1925, 253–56; Fischer (n. 33 above), 294, 304.



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Though Walker never devoted as much hostile attention to the transit companies as Hylan had, his overall attitude was much the same. For Walker, and for his successors, the question of motorization was no longer whether buses should replace streetcars in Manhattan but when, and the Walker administration continued Hylan's policy of using buses and time as weapons against the transit companies. In 1929 Walker explained his strategy of attrition. "Wait a little longer and they won't be around. Like those who opposed the Sanitary Commission Law. They think that the best way to dispose of garbage is to kick it around until it disappears. And of course, in the same way they might kick this company around until it disappears."⁷⁵ The *New York Times* editorialized that the "city holds a trump card in the simple fact that under existing franchises and present conditions the lines are being operated at a heavy loss."⁷⁶ So as the city stalled and threatened to give the franchises to competing firms, the railways set their sights lower and lower.

Meanwhile, Manhattan's merchants began clamoring for motorization. Once the Manhattan transit companies had pledged eventual replacement of their streetcars they had little reason to upgrade them, and city merchants complained of noise from aging cars and tracks. Though in the early 1920s business associations had been generally neutral between streetcars and buses, by 1929 they clearly favored the latter. They pointed to the bus's ability to pull over to the curb, allowing passengers to board or exit without fear of being hit by an automobile. But mostly they emphasized benefits to nonpassengers. Motorists would no longer have to drive along slippery trolley tracks, and, they hoped, would no longer find themselves stopped behind a line of transit vehicles. The crucial decision for motorization had been made years before, but the merchants' campaign helped ensure that there would be no turning back.⁷⁷

By 1934 Mayor Fiorello LaGuardia had persuaded the ailing companies to abandon any hope of a ten-cent fare, so motorization could proceed.⁷⁸ The first Manhattan line to switch from streetcar to bus was the twelve-

75. Minutes of the Board of Estimate Hearing, 18 March 1929, James John Walker Papers, New York Municipal Archives, box 277.

76. "More Trouble over Buses" (editorial), *New York Times*, 13 October 1931.

77. R. L. Duffus, "Trying to Unlock the Wheels of Traffic," *New York Times*, 20 January 1929; "Broadway and Madison Av. Fight Trolleys," *New York Times*, 6 October 1929; "Want Buses in Place of 23d St. Car Line," *New York Times*, 13 November 1929. E. W. Estes, letter to the editor, *New York Times*, 19 July 1930, and "Does Manhattan Need the Surface Cars?" (n. 23 above). This campaign against streetcars jibed with a broader concern about noise in the city. See Emily Thompson, "'Mysteries of the Acoustic': Architectural Acoustics in America, 1800–1932" (Ph.D. diss., Princeton University, 1992), 237–47.

78. The ten-year delay between New York Railways' offer to convert and the actual conversion to buses was more a result of corruption, competition among transit companies, and legal uncertainty than of any debate over the desirability of conversion.

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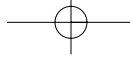
FIG. 4 Berenice Abbott, *Herald Square, Manhattan, West 34th Street and Broadway*, 16 July 1936. Federal Arts Project, "Changing New York," 49. 282.53. (Museum of the City of New York. Reproduced with permission.)

mile-long Second Avenue Railroad, which was bought up by the East Side Omnibus company and converted to buses in 1933. Lines on Staten Island and in Queens came next, in 1934.⁷⁹ Motorization of the New York Railways system began in 1935 with the Fourth and Madison line. On 29 January Mayor LaGuardia told his radio listeners that "trolleys are as dead as sailing ships" and that "within one year there should not be a single trolley line left in the Borough of Manhattan, and I hope that [the Third Avenue system] will see the light soon, as it has with respect to parts of its Bronx lines."⁸⁰

Three days later, a forty-seat, green and buff gasoline bus left the terminal at 135th Street and Madison Avenue, marking the first replacement of streetcars on a major longitudinal route. Other routes soon followed, many with bands, pageants, and ceremonies. The last New York Railways line converted in June 1936, less than eighteen months after the first (fig. 4). By then

79. "New York Rapidly Takes to Buses," *Bus Transportation*, February 1935, 58.

80. "Trolleys Doomed, Mayor Reveals," *New York Times*, 30 January 1935.



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buses accounted for 45 percent of the surface transit of the city as a whole.⁸¹ By October 1937, the Works Progress Administration had removed 125 miles of Manhattan track, some of it in excellent condition after decades of use.⁸² Only half a dozen short trolley routes, belonging to the Third Avenue Railway system, remained in Manhattan, and they eventually were motorized by 1946.

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Most Manhattanites were delighted with the new buses. Rides on the Fourth and Madison rose from five million in the first four months of 1934 to 9.3 million in the first four months of 1935.⁸³ *Bus Transportation* quoted several compliments about the buses' modern appearances and their ability to pick up passengers at the curb. "A volume could easily be filled, or two for that matter, with enthusiastic comments resulting from interviews with realtors, investment house representatives and merchants, who are counting heavily on improved business under the bus substitutions."⁸⁴

Yet some riders pointed out that to say that the new buses were better than the old trolleys does not mean that they were the best choice. L. L. Gaillard Jr., preferred the roominess and "smooth ride" of streetcars, and wrote that "the answer to the surface transportation problem is not buses but new, modern street cars."⁸⁵ Robert Banks, who in 1932 had complained about the "rattletrap" emergency buses, complained that the new Madison buses were crowded and bumpy, and could only be preferred to trolleys if the comparison were uneven. "No one expects a trolley built in 1905 to be up-to-date as a brand new bus." Herman Rinke regretted that "no question was ever raised as to whether the need here was for new buses or new trolleys." He envied other cities, including Brooklyn, with their "practically noiseless, jerkless, and odorless" new streetcars.⁸⁶ But no such comparison could be made in Manhattan.

81. "Yellow Truck and Coach," *Fortune*, July 1936, 63. The buses, built by Yellow Coach, included several innovative mechanical features; Bernard Linder, "New York City Omnibus Corp.," *Motor Coach Age*, February 1969, 4–20, wrote that they "set the pace for transit bus design in the years that followed."

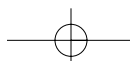
82. "City Gets \$427,241 for Old Car Rails," *New York Times*, 21 October 1937; "Car Track Removal Started on 7th Av.," *New York Times*, 16 July 1936.

83. "Buses Double Revenue of Madison Ave. Line," *Bus Transportation*, August 1935, 328.

84. "Manhattan's New Bus System," *Bus Transportation*, 15 December 1935, 537–40.

85. L. L. Gaillard Jr., "Buses Not Approved" (letter to the editor), *New York Times*, 8 February 1935.

86. Robert L. Banks, "New Buses Disliked" (letter to the editor), *New York Times*, 9 February 1935 (Banks went on to become a transportation expert and a defender of both rail transit and freight railroads; in the 1930s he was still a teenager); B. Russel Herts, "The East Side Buses" (letter to the editor), *New York Times*, 3 April 1936; Herman Rinke, "Trolleys Versus Buses" (letter to the editor), *New York Times*, 9 July 1936; W. W. M., "Engineering Data Sought" (letter to the editor), *New York Times*, 14 April 1936; Michael Flagg, "The Bus Peril" (letter to the editor), *New York Times*, 4 June 1936. Brooklyn's BMT was one of the pioneers in the development and testing of the famed PCC (President's





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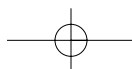
David St. Clair has noted that, nationwide, “motorization was often accompanied by fare increases, reductions in operating schedules, route changes, and a general rationalization of transit operations. These certainly augmented profits, but they are irrelevant to the question at hand, since most would have been warranted regardless of whether buses, trolley coaches, or streetcars had been used in the modernization program.”⁸⁷ In an ideal world, perhaps, transit companies could have chosen the vehicles best suited for their cities independently of considerations of fares, schedules, routes, taxes, and other conditions of operation. In real American cities, however, technical choice was inextricably bound up with decades of laws and customs that had grown up with the street railway. Such interplay between innovation and regulation occurs not only in transportation but in all industries deemed public utilities. Innovative technology may have a function apart from technical merits, acting as a hammer with which to shatter legal regimes established when a single technology was dominant and seemingly permanent. In some cases government uses this hammer to replace one private operator with another; at other times, the new technology provides an opening for direct government ownership.

This pattern can be seen in various utility sectors across the twentieth century. In Kansas City in 1906, the city government used the arrival of natural gas, rather than manufactured gas, to demand changes to the gas franchises. Not only did it drastically reduce the rates the gas company could charge, but it also insisted that the company serve less densely settled neighborhoods, resulting the company’s eventual bankruptcy and sale. In the 1930s and 1940s, the Roosevelt and Truman administrations used federal jurisdiction over river navigation to claim a mandate to generate hydroelectric power at a time when it would have been much more difficult to convince Congress that the federal government could constitutionally build steam generating plants. And in the 1990s, the Federal Communications Commission (FCC) used the arrival of personal communications services technology to introduce new competitors—including small businesses and firms owned by women and minorities—to the wireless telephony market. In these cases, government could have allowed the established utility operators to continue business as usual and reap the advantages of the new technology, but it instead seized the chance to make new rules.⁸⁸

Conference Committee) car, a great improvement over previous models of trolleys. Ironically, the nation’s first PCC car was put into regular service in Manhattan—at the Brooklyn Bridge terminus of the BMT’s Brooklyn and Queens Transit line—on 1 October 1936, only months after the removal of almost all of Manhattan’s own streetcars. Cudahy (n. 10 above), 171.

87. St. Clair (n. 6 above), 70.

88. Mark H. Rose, *Cities of Light and Heat: Domesticating Gas and Electricity in Urban America* (University Park, Pa., 1995), 58. McCraw (n. 40 above), 16–18. Phyllis Komaret de Luna, *Public versus Private Power during the Truman Administration: A Study of Fair*



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Alternatively, government may resist technical advances in order to maintain preferred economic relationships. In the regulated Texas oil industry of the 1950s, Texas courts rejected evidence produced by new engineering and geologic techniques in part because such evidence would favor large firms at the expense of ruggedly individualist Texans. In the same period, the FCC limited the use of microwaves for long-distance telephony lest the new technology impoverish AT&T stockholders. In the 1970s, when the FCC changed its policy to benefit the fledgling Microwave Communications, Inc. (MCI), its decision was essentially political, for the underlying technology had not changed.⁸⁹

However the regulatory state reacted to innovation, the rival technologies became, in large part, proxies for questions about who would provide the service in question and under what regulatory regime. The end product—gas heat, electricity, telephone service, oil, or local transit—might not change much, but on the producer level new technology threatened old relationships, leaving both governments and utility companies scrambling to maintain or improve their positions. In these regulated industries, local, state, and federal government actors manipulated the pace of adoption of new technologies as they tried to determine whether and how severely technical innovation would be allowed to upset existing arrangements.

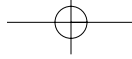
Because the new technologies served as proxies for other issues, their adoption did not necessarily satisfy their champions, as long as the underlying issues remained unresolved. In the war over Manhattan surface transit, neither side enjoyed a complete victory. Hylan had tried to define the bus as a transit vehicle operated by the city government, or at least by companies allied with Tammany Hall that could be portrayed as more civic-minded than the demonized traction interests. Motorization did weaken the established companies' positions somewhat—they had traded in their nearly immortal rail franchises for bus franchises guaranteed for only ten years. And in 1935 the city finally began operating some municipally owned buses on crosstown routes previously followed by Hylan's emergency buses.

But the city enjoyed incomplete success. With the combination of Fifth Avenue Coach and New York Railways, Manhattan surface transit was even more dominated by a single company than it had been under the Metropolitan monopoly of 1907.⁹⁰ To add to the irony, Democrats Hylan and

Deal Liberalism (New York, 1997), 1, 61–62. On personal communications services, see Sandra Sugawara, "FCC May Rethink PCS," *Washington Post*, 24 March 1994; Steve Alexander, "Calling for Competition," *Minneapolis Star Tribune*, 17 November 1996.

89. Edward W. Constant II, "Cause or Consequence: Science, Technology, and Regulatory Change in the Oil Business in Texas, 1930–1975," *Technology and Culture* 30 (1989), 446–47. Philip L. Cantelon, "The Origins of Microwave Telephony—Waves of Change," *Technology and Culture* 36 (1995), 572. Steve Coll, *The Deal of the Century: The Break Up of AT&T* (New York, 1986), 11–13, 48–52.

90. Fifth Avenue Coach continued to run most buses in Manhattan until 1962.

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Walker had worked for fifteen years for the municipalization of the subways and motorization of surface transit, only to see their efforts bear fruit during the administration of LaGuardia, a Republican.

The now motorized transit companies also had mixed success. Throughout the struggle they had tried to define the bus as a vehicle that could collect a higher fare than a streetcar, but that would not bring with it the high taxes associated with streetcar operation. After motorization, the companies no longer had to pave Manhattan's streets. Ridership went up and pretax expenses went down, though it is impossible to know what would have happened had new streetcars been installed.⁹¹ But the bus did not, as hoped, increase the fares they could collect; not until 1948 would most bus fares rise to seven cents.

Though Hylan had been quite forthright in his demands for municipally owned and operated transit, and the traction companies had been equally open in their quest for tax relief and higher fares, both antagonists had muddled the debate over these issues by adding to their public definitions of the motor bus and the streetcar such technical issues as capacity, maneuverability, comfort, and cost of operation. This confusion of definitions allowed both sides to get what they had publicly wished for—motor buses—without getting true satisfaction. For the most part, motorization left the city government and the transit companies where they had been in 1918: bickering and unhappy. Using technology as a proxy for politics could not resolve their political differences.

91. "How the New Gas Buses Have Improved Earnings," *Transit Journal*, 15 September 1936, 337–42. The city purchased the BMT in 1940, in the course of subway unification, so we do not know how a New York company committed to the latest streetcars would have fared.

