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MASS TRANSIT AND PRIVATE OWNERSHIP: AN ALTERNATIVE PERSPECTIVE ON THE CASE OF TORONTO

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Donald F. Davis

For more than thirty years Toronto has been renowned for the quality and efficiency of its public transportation. Studies have repeatedly described the Toronto Transit Commission or TTC as "probably the finest mass transportation system in the new world." One statistic alone establishes its uniqueness: it was the only North American transit system to increase its total patronage between 1946 and 1971. While not quite as successful as the TTC, mass transit systems elsewhere in Canada have generally out-performed their American counterparts. As a result, analysts have credited them with an important role in making Canadian cities more viable and livable than those of the United States. Yet urban transportation has received scant attention from Canadian historians. But the era of neglect now seems to be passing for a recent article by Michael Doucet in the Urban History Review has attempted to put Toronto's unique development in historical perspective.[1]

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1. J. Alex Murray, ed., Mass Transit: The Urban Crisis of North America, Proceedings of 17th Annual University of Windsor Seminar on Canadian-American Relations, November 13-14, 1975 (Windsor, 1976), 33; Michael J. Doucet, "Mass Transit and the Failure of Private Ownership: The Case of Toronto in the Early Twentieth Century," Urban History Review, No. 3-77, 3-33; John Sewell, "Public Transit in Canada: A Primer," City Magazine, 3 (May-June, 1978), 51. See also E. L. Tennyson, "Mass Transit -- Panacea for Urban Problems," New Approaches to Urban Transportation Needs, Proceedings of the Specialty Conference, March 30-31, 1971 in Philadelphia (New York, 1971), 48; Jacob Spelt, Toronto (Don Mills, 1973), 98; and N. D. Lea & Associates, Urban Transportation Developments in Eleven Canadian Metropolitan Areas (Toronto, 1966), 12-15, 76.

Doucet attributes Toronto's success to the 1921 municipal takeover and the formation of the TTC. He argues that mass transit fared best in countries where it was strictly regulated or municipally owned and most poorly in the United States where "essentially laissez faire conditions" prevailed. As for Toronto -- and presumably Canada -- "the history of mass transit operations" reveals "a rather interesting intermixture of the attitudes toward ownership ... evolving elsewhere." He therefore depicts Toronto as a half-way house between British municipal socialism and American free enterprise. While it experimented with private ownership, it eventually realized its error and opted for municipalization. Toronto thus muddled through, Doucet implies, to a peculiarly Canadian solution to its transit difficulties. As a result, its public transportation, while not as healthy as that of Great Britain, at least avoided the wholesale dismemberment that befell American private systems after 1945.[2]

The argument, though persuasive, has a problem: municipal ownership of mass public transit is now as widespread in the United States as in either Great Britain or Canada. Perhaps to circumvent this difficulty Doucet emphasizes the timing of Toronto's municipal takeover. It came in 1921 when it still made economic sense to invest in street railways. Consequently, the TTC spent $50 million -- most of it by 1923 -- to acquire, modernize, and extend the private system. As a result, Toronto developed a "stake in public transit ... too high" to abandon. Doucet further contends that, "since most of the money had been expended on the street railway network, the trolley was also assured of a place in the mass transit future of Toronto." Its survival was in fact vital as in "many cities" the scrapping of the local street railway "marked the beginning of the end for mass transit since they received almost nothing for what had once been very expensive capital plants." Doucet thus posits a casual relationship between the "persistence of streetcars and the vitality of ... mass transit" in Toronto and ascribes both to the timing

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2. Doucet, "Mass Transit and the Failure of Private Ownership," 3-4.

of municipalization.[3]

Doucet's thesis has obvious appeal. It reaffirms Canada's distinctiveness while bolstering the current widespread belief in the superiority of both streetcars and municipal ownership. How tempting it is to credit Toronto's transit success to its early enlistment in two of today's leading crusades: the environmentalist and public ownership. Moreover, the automotive industry is now in such disfavour that the connections Doucet makes between streetcars, municipal ownership and the vitality of mass transit in Toronto seem quite natural, if not self-evident.

Yet this paper takes the contrary position that streetcars in Toronto are an historical accident with little bearing on the city's transit triumphs. It also contends that private ownership -- specifically the thirty-year reign of the Toronto Railway Company between 1891 and 1921 -- is the root cause of Toronto's success. That is, the company's greedy and short-sighted scramble for profits made the long-run health of mass transit in Toronto possible. More generally, this paper maintains that it has been some of the least admirable characteristics of Canadian society and life that have made its public transportation more viable than that of the United States. Not superior virtue but rather Canada's relative poverty, conservatism, and technological backwardness lie at the heart of the TTC's accomplishments.

I

Municipal ownership played at most a minor role in preserving Toronto's streetcars and in keeping its transit system viable. Evidence from other cities indicates that municipalization was no panacea for transportation ills, even if undertaken in 1921. Certainly it worked no wonders in Seattle, Detroit, and Windsor, the three cities that took over their street railways at approximately the same time as Toronto did.

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3. Ibid., 32.

Seattle in 1918 "paid a vast sum for a fleet of outmoded cars and a set of deteriorating tracks." Its transportation system by the 1960s counted among the continent's most anemic. Public transit in Detroit has been no healthier even though a city department has owned and operated it since 1922. As for mass transit across the river in Windsor, it has suffered the financial complaints endemic to small city systems since the municipal takeover in 1920.[4]

The example of Detroit suggests, moreover, that the $50 million spent by the TTC between 1921 and 1923 had little future bearing on either the vitality of mass transit or the survival of streetcars in Toronto. Detroit also had a large investment to protect after 1922: $22 million paid for the property of the local traction monopoly and a further $18 million spent improving and extending it during the first three years of municipal ownership. By 1931 Detroit's street railway had added 104 miles of track or just 25 fewer miles than Toronto built in the same period. Moreover, Detroit's Department of Street Railways was if anything more committed than the Toronto Transportation Commission (note the different emphasis in their names) to streetcars, as it waited an additional four years to introduce its first motor-buses. Yet the system produced nothing but deficits as total ridership fell steadily after 1925. By 1955, the year Detroit retired its last streetcar, annual losses had reached the $5 million mark. Thereafter the city's transportation department trimmed its deficit by reducing service. By 1962 its buses were carrying only 115 million passengers a year. The TTC, in contrast, transported 288 million passengers in 1965 even though it served a population less than two-thirds that of metropolitan Detroit.[5]

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4. Roger Sale, Seattle: Past to Present (Seattle, 1976), 89; Maurice A. Campbell, Four Cities: Studies in Urban and Regional Planning (Toronto, 1971), 15.

5. Graeme O'Geran, A History of the Detroit Street Railways (Detroit, 1931), 353-361; Public Business 3 (June 15, 1925), published by the Detroit Bureau of Governmental Research; Accumulated Social and Economic Statistics for Detroit, School of Public Affairs and Social Work, Wayne University, report no. 10 (Detroit 1937), 17; Robert Conot, American Odyssey (New York, 1974), 799; Doucet, "Mass Transit and the Failure of Private Ownership," 33; Lewis M. Schneider, Marketing Urban Mass Transit (Boston, 1965), 22; Lea & Associates, Urban Transportation, 76-77.

Neither municipal ownership nor the "stake" of $40 million saved Detroit's public system from dismemberment. The original investment after all was not large enough to justify losses of $5 million a year in the mid-1950s. Toronto would probably have sold its streetcars too if they had contributed to similar deficits. But streetcars, routes, and frequent headways survived in Toronto because they paid for themselves. The street railway system continued to be regarded as an asset because it remained an asset.

Doucet's argument about Toronto's stake in streetcars and mass transit has a further difficulty; it ignores technological obsolesence. The 1921 decision was not permanently binding on the city. Indeed, by 1938 the TTC's system was badly out-dated; both its rolling stock and its track had to be replaced in their entirety if the system were to stay abreast of innovations in automotive engineering. Other cities, faced with the motor vehicle's challenge, junked their street railways, opting instead for buses. Their "stake" in electric rail transit thus proved illusory. Toronto, however, decided to rejuvenate its trolley system. Why? The reason becomes clear when Toronto's transportation history is paired with the chronology of technological change within the industry.

When the TTC upgraded its system between 1921 and 1923, streetcars still held a clear edge over their gasoline-powered rivals. Although several cities had experimented with motor-buses before 1910 few communities found motor-buses a practical option before 1920, as the bus industry was still in its infancy. But several companies began specializing in motor-bus design and production in the early 1920s. By 1930 the most advanced models offered a superior ride to streetcars, a fact not unnoticed by commuters who were generally willing to pay a premium to ride a motor-bus. In 1926 in Hamilton "people were prepared to ride a bus at least twice as far as they were an interurban car, and to pay more for the privilege." In 1931 Calgarians proved so enthusiastic -- or curious -- about the city's first municipally-owned buses that the transit authority was "forced ... to charge an extra fare to ride on them, a practice that

continued until June 1938."[6]

The public wanted buses but street railway companies were reluctant to furnish them. Traction experts dominated most transit companies; they understandably resisted a technological change that made their skills and knowledge outdated. They had as well a certain passion, an emotional commitment to rail traffic that surpassed cold business logic. Moreover, street railways had an investment to protect or rather to depreciate. "In several cities," A.W. Currie has remarked, "street cars were continued primarily because urban transit companies had large amounts of capital in their power plants, transmission systems, street cars, and track." The companies had made their original investment assuming depreciation over twenty to thirty years; it would have been prohibitively expensive to junk streetcars prematurely. If rolling stock and track survived beyond their normal life expectancy, they offered the company -- barring heavy repair bills -- a free ride. Moreover, streetcars in 1929 still enjoyed a relative cost advantage over buses at most urban densities because of their superior load capacity and lower maintenance costs per car-mile.[7]

The streetcar's superiority faded, however, as its tracks headed into the suburbs. Most cities, especially in the United States, extended their lines in the early twentieth century well past the point where streetcars could run profitably. The trolley needed high-density use and full loads to cover its heavy fixed costs. In the United States buses gradually replaced streetcars on peripheral routes in the 1920s since they had much smaller seating capacities, greater fuel economy, and lower labor costs

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6. J.M. Mills, Cataract Traction: The Railways of Hamilton (Toronto, 1971), 42; Colin K. Hatcher, Stampede City Streetcars: The Story of the Calgary Municipal Railway (Montreal, 1975), 9, 63; John Anderson Miller, Fares, Please! (New York, 1941, 1960), ch. 10.

7. A.W. Currie, Canadian Transportation Economics (Toronto, 1967), 523; and Donald N. Dewees, "The Decline of the American Street Railways," Traffic Quarterly, 24 (October, 1970), 570.

(most streetcars still required both a conductor and a driver). Moreover, the flexibility of buses -- the freedom from tracks and overhead wires -- enabled them to follow commuters into the suburbs. They therefore increased the transit offerings of most cities even where street railway operations contracted.

In the 1920s smaller cities like Bay City, Michigan and Everett, Washington switched entirely to buses; their transit receipts had never been large enough to pay the fixed costs of rail transportation. As well, several dozen American cities found that they could, thanks to the motor bus, afford public transit for the first time. Buses therefore spread rapidly in the United States: by 1929 they represented 68 per cent of the total urban transit mileage and carried 15 per cent of the passengers. Meanwhile the country's street railways lost 13 per cent of their track between 1922 and 1929. After peaking in 1917, tram rides per capita in the United States fell steadily during the 1920s and 1930s. Total patronage, rising fitfully during the early 1920s as the urban population increased, also dropped off after 1923. Public transportation as a whole showed, however, modest gains during the decade as buses picked up the slack in ridership. It was nonetheless self-evident that street railways were in trouble in the United States by 1929. Even then it appeared that they were destined to share the fate of the Model "T" Ford.[8]

Canadian street railways had a better record in the 1920s, in part because of the slowness of Canadian cities to adopt the new motor-bus technology. Most Canadian cities added track that decade with Halifax, Hamilton, Montreal, and Ottawa almost doubling their systems. Yet even here there were disquieting signs: for one thing, the growth rate of both ridership and revenue was levelling off. Moreover, some systems were experiencing financial difficulties. Especially ominous was the collapse of Canada's interurban industry. Intercity electric railways had never generated sufficient traffic to earn a respectable profit and in the 1920s competition from motor vehicles and steam railroads reduced their rate of return on investment to a paltry 1.9 per cent. As buses had lower operating costs at intercity densities and could charge higher fares because of

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8. Dewees, "Decline," 564-565; Miller, Fares, 156-163.

their popularity with commuters, they began replacing interurban railways in the mid-1920s. Thirteen of Canada's sixty-four electric railways disappeared during the decade, with the country consequently suffering a net loss -- despite the urban additions -- of 128 miles of electric railway track by 1930.[9]

The TTC observed the downward trend in Canada and the United States. It noted that its own ridership was, despite its construction programme, levelling off. In 1922 its city lines had carried 187.1 million revenue passengers. Over the next five years the system gained only 700,000 fares. The Commission decided that its antiquated streetcars were driving away potential customers. Even its newest trams, those purchased between 1921 and 1923, lacked the acceleration, braking power, speed and maneuverability of the modern automobile. Several American transit companies, their problems even more compelling and immediate, reached the same conclusion as the TTC: the streetcar to survive needed drastic improvement. In 1929, twenty-five systems, including Toronto, created the Electric Railway Presidents' Conference Committee to fund development of the so-called Presidents' Conference Committee (PCC) car -- the first "modern streamliner." A major advance over existing street railway technology, the PCC car offered a ride comparable to that of an automobile. But it came too late to save streetcars in most cities.[10]

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9. Doucet, "Mass Transit and the Failure of Private Ownership," 33; Norman D. Wilson, "Some Problems of Urban Transportation," in H.A. Innis, ed., Essays in Transportation (Toronto, 1941), 89-97; John F. Due, The Intercity Electric Railway Industry in Canada (Toronto, 1966), ch. 6; Mills, Cataract Traction, 40-42.

10. Toronto Transportation Commission, Wheels of Progress (Toronto, 1942), 73, 105; Miller, Fares, 181-182; S.I. Westland, "The P.C.C. Story," Upper Canada Railway Society Newsletter, No. 214 (November, 1963), 163. I wish to thank Robert Tennant for drawing my attention to Westland's article and to other street railway materials.

Unveiled at a 1934 transit convention, ready for quantity production late the following year, the PCC found few buyers. American street railways, in trouble even in prosperity, were prostrated by the Depression. Most were tearing up track and storing surplus trams in backyard sheds and lots. They did not need new stock. Between 1929 and 1940 urban railway track in the United States shrank by 40 per cent as electric railways, including the interurbans, lost half their riders. Orders for the PCC were understandably rare, with only Pittsburgh and Chicago placing major orders before the war.[11]

Canada's street railways suffered even greater losses during the Depression. The 1930s witnessed the net abandonment of 488 miles of electric track and the disappearance of eighteen systems ranging in size from Brandon to London. Larger centres still generated sufficient traffic to justify continued street railway operations but even they suffered track abandonments and service cutbacks as patronage plummeted. Canadian street railways consequently showed even less interest in the PCC than their American counterparts. Apart from Toronto, the British Columbia Electric Railway was the only Canadian system to place an order before the war and it bought a single demonstration model for testing. Toronto, in sharp contrast, ordered 140 PCC cars in April 1938, "the largest first order for PCC's ever placed by any transit system." The TTC felt it had little alternative to the purchase. In 1929 it had, despite its pressing need for new trams, elected to wait for the PCC car. As a result, its rolling stock by 1938 was at least fifteen years old, much of it desperately in need of replacement. Other cities -- for example, Montreal, Calgary, and Halifax -- had revamped their streetcar fleets during the late 1920s; they therefore had no use for the PCC before the war. But Toronto, trapped by its 1929 decision, now had to replenish its system. During the war the TTC purchased an additional 150 cars, thereby obtaining for itself the most modern, efficient streetcar fleet in Canada, if not the continent.[12]

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11. Dewees, "Decline," 564-565; Miller, Fares, 183.

12. Westland, "P.C.C. Story," 163; John F. Bromley, TTC '28: The Electric Railway Services of the Toronto Transportation Commission in 1928 (Toronto, 1968), 6; Richard M. Binns, Montreal's Electric Streetcars: An Illustrated

The TTC was therefore better equipped than most Canadian transit systems to cope with the wartime emergency. Street railways, long used to declining traffic, suddenly found themselves deluged with customers as both Canada and the United States officially discouraged motoring in order to conserve rubber and steel for the military. By 1942 North America's automotive factories had converted to war production and the flow of new cars ceased. Motor vehicle registrations in both countries dropped as vintage automobiles, nursed through the Depression, finally headed for the junkyards. With the motor car temporarily in retreat, mass transit quickly recouped its Depression era losses. At war's end, when the automobile industry was slow to reconvert to peacetime production, urban transportation systems throughout North America did record business. In both 1946 and 1947 American transit companies carried 23.4 billion passengers, fifty per cent more than in 1926, the best prewar year. The Canadian peak apparently came later -- in 1950 -- but many systems including those in Toronto, Regina, and Ottawa reached their all-time highs in 1946, as in the United States.[13]

Paradoxically, the wartime surge in traffic hastened the demise of North America's street railways as systems already prematurely aged by the neglect of hard times degenerated even more rapidly under the stress of war. So extreme was the equipment shortage in most cities that streetcars "could not be removed from service to make even normal overhauls, due to the incessant demands upon" them. It was ironic: street railways were making large profits but their systems were disintegrating. The Canadian government did not help matters, furthermore, by siphoning off the industry's first profits in more than a decade through a wartime excess profits tax.

(12 - continued) History of the Tramway Era: 1892-1959 (Montreal, 1973), 91; Hatcher, Stampede Streetcars, 60; Robert R. Brown, "Halifax: Birney Stronghold," Canadian Railroad Association Bulletin 17 (Montreal, April 15, 1954), 13.

13. Dewees, "Decline," 564-565, 573; Lea & Associates, Urban Transportation, 15; Colin K. Hatcher, Saskatchewan's Pioneer Streetcars: The Story of the Regina Municipal Railway (Montreal, 1971), 48; R.D. Tennant, "Capital Traction: An Outline History of the Street Railway System of Ottawa," Upper Canada Railway Society Newsletter, No. 273 (Ottawa, 1968), 122; Boyce Richardson, The Future of Canadian Cities (Toronto, 1972), 131.

In both Canada and the United States street railway trackage declined during the war as city systems, desperately scrounging for additional trams for the principal arteries, abandoned marginal routes. As well, many systems were totally incapable of handling the wartime loads, so weak had they become in the 1930s. The outbreak of war therefore brought the speedy conversion of Oshawa, Brantford, and Quebec City to buses. Several other cities, including Ottawa and Edmonton, purchased their first buses. North America's street railways, despite expanding business, lost ground during the war in their fight for survival. Track mileage in the United States continued its downward course throughout as buses increased their share of urban transit ridership from 30 to 43 per cent between 1940 and 1945.[14]

The war heightened the public's disdain for streetcars. Commuters, many of them accustomed only to the solitary comforts of their automobile, were now forced to ride streetcars under the worst possible conditions. Trams of the mid-1940s were noisy, slow, dilapidated, and overcrowded. Companies were operating anything that moved including, in the case of Montreal, former sight-seeing cars clumsily winterized with Masonite and wooden boards. According to Richard Hatcher, Calgarians treated the wartime trolleys as "objects of scorn" and "looked forward to the arrival of buses to replace them." This attitude was widespread: people regarded streetcars as old-fashioned relics, their survival evidence of a city's backwardness. With the war ending and mid-century approaching, urbanites demanded modernity and social progress. They wanted the motor-bus, a twentieth-century invention, to replace the antiquated vehicles of the Victorian era. The elimination of unsightly streetcar tracks and overhead wires they considered an auspicious sign of better times ahead.[15]

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14. Currie, Transportation, 530; Norman D. Wilson, Report on Halifax Transit, manuscript dated September 5, 1946, Public Archives of Nova Scotia, 8-11; Dewees, "Decline," 564-565, 576; Wilson, "Some Problems," 97; Tennant, "Capital Traction," 11; J.G. MacGregor, Edmonton: A History (Edmonton, 1975), 281-282.

15. Hatcher, Stampede Streetcars, 75; Binns, Montreal's Streetcars, 100-101.

Transit companies also agreed that street railways had outlived their usefulness. By war's end rail systems were worn out in most cities; to continue they needed massive infusions of capital -- far more in fact than most cities could afford. Regina, for example, decided in September 1944 to switch to trolley-buses when it realized the costs of converting to the PCC car, the only tram still in general production. The PCC, designed with the great American metropolises in mind, was too expensive and cumbersome for small cities to operate. At twenty tons it weighed so much that Regina would have had to lay new track throughout its entire system to accommodate it. Similarly, Halifax found the PCC too large to negotiate the "sharp track-curves standard" on its lines.[16]

Every transit system, regardless of size, found the PCC prohibitively expensive as a result of the refinements added to make it competitive with the motor vehicle. In 1946, to use Chicago's figures, a PCC car cost 40 per cent more than a large diesel bus. Edmonton calculated that same year that a PCC required an investment per seat 58 per cent higher than for a comparable motor-bus. Buses also enjoyed a significant advantage in operating costs per car-mile. "The streetcar," Donald Dewees has concluded, "was more expensive in every respect." Halifax in fact discovered that it could purchase a "completely new ultra-modern trolley coach system" for little more than the cost of rehabilitating its street railway.[17]

Even had the PCC been less expensive it would have found few takers in 1946, for it required traffic loads greater than most cities expected to have after the war. No one could predict postwar traffic trends but most systems assumed or feared the worst. They did not want to be stuck with an investment that took twenty years to mature. They wanted to keep their options open, their positions flexible, and buses had "the outstanding advantage of presenting fewest hostages to fortune."[18]

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16. Hatcher, Saskatchewan's Streetcars, 48; Wilson, Report on Halifax, 5-6.

17. Wilson, Report on Halifax, 6; Dewees, "Decline," 575-577; Currie, Transportation, 702.

18. Wilson, "Some Problems," 109.

Motor-buses were also less burdened by the dead weight of tradition. No city required as much from a bus company as from a street railway in terms of snow removal, paving, bridge maintenance, free passes, and safety standards. Rail franchises still bore the imprint of the horsecar era when cities, too poor to maintain the streets properly, shifted much of the financial burden to the street railways, the paved area between their tracks often providing the only passable thoroughfares in the city. By 1945 these archaic requirements served only to subsidize automotive competition. To escape them transit companies had yet another incentive to convert to buses. Most of North America's street railways accordingly disappeared shortly after the war. By 1960 only ten American lines still operated, generally on private rights-of-way affording a semblance of rapid transit. Canadian cities abandoned the streetcar with even greater celerity: by 1952 only five major urban systems remained -- in Toronto, Montreal, Vancouver, Winnipeg, and Ottawa. Large, dense populations kept their electric railways temporarily alive but Toronto by late 1959 ranked as the lone Canadian survivor.[19]

Except among rail buffs, the demise of North America's street railways occasioned little mourning. A carnival atmosphere attended the last runs in many Canadian cities. Transportation experts generally applauded their passing, for they agreed with Lewis Schneider that "the abandonment of streetcars prevented the financial collapse of the [urban transportation] industry" by reducing its overhead. Since the 1940s costs and attitudes have changed dramatically and streetcars have returned to favour. The TTC's postwar decision to enlarge its street railway fleet now seems less quixotic than it did in May 1946 when it placed its first

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19. Clay McShane, Technology and Reform: Street Railways and the Growth of Milwaukee, 1887-1900 (Madison, Wisc., 1974), 52-53; George M. Smerk, "Urban Mass Transport at the Ebb," in George M. Smerk, ed., Readings in Urban Transportation (Bloomington, Indiana, 1968), 4-9. Both Ottawa and Montreal abandoned streetcars in 1959; Vancouver in 1955; Winnipeg in 1954; Edmonton and Hamilton in 1951; Saskatoon, Regina, and Calgary in 1950; Halifax in 1949; Thunder Bay in 1946-1947; and Kitchener in 1946.

postwar order for PCC cars.[20]

What now seems far-sighted probably struck most observors in the late 1940s as conservative and backward. Other systems were embracing the new transportation technology while the TTC, more set in its ways, stuck with streetcars. Once again it had little alternative, for 290 of its trams were less than eight years old. To pay for themselves, these cars had to run for a decade more. But their continued operation was contingent on modernizing the rest of the rail fleet. Between 1946 and 1950 the TTC accordingly purchased 250 PCC cars; then, deciding that a new PCC had become too expensive even for it, the Commission switched to the second-hand market, preying on the discards from American transit systems converting to all-bus service. By 1957

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20. Schneider, Marketing Transit, 17. See also Robert T. Howe, "Public Ownership of Mass Transit in Cincinnati," Traffic Quarterly 30 (January, 1976), 125. The streetcar's prowess has recently taken on legendary proportions. So superior do some transportation critics presume it to be that they must, like Bradford Snell, weave elaborate plot theories to explain its demise. See his submission to the Subcommittee on Antitrust and Monopoly of the Committee on the Judiciary, United States Senate, February 26, 1974 entitled American Ground Transport. Snell accuses General Motors of killing off the streetcar after World War II in order to boost -- ultimately -- its passenger car sales. The most effective retort -- that the streetcar industry was moribund in the United States well before the war -- is effectively presented in chapter 1 of Andrew Marshall Hamer's The Selling of Rail Rapid Transit: A Critical Look at Urban Transportation Planning (Lexington, Mass., 1976). Two other insightful critiques of the myth of streetcar invincibility are John B. Rae's "The Mythology of Urban Transportation," Traffic Quarterly, 26 (January, 1972), 85-98; and Kenneth R. Yunker and Kumares C. Sinha, "Energy Considerations in Urban Transportation Planning," Traffic Quarterly, 29 (October, 1975), 571-582. Yunker and Sinha explode the greatest myth of all -- that the streetcar is more energy-efficient than its rubber-wheeled competition. Writing in 1975, they conclude that "transportation systems utilizing full and medium sized diesel-powered buses have the highest energy-use efficiency for all ... intra-urban travel modes." They included surface, elevated, and underground rail lines and trolley-buses in their study.

the TTC's purchases ceased; it was evidently contemplating phasing out its street railway system. Yet it hesitated long enough for streetcars to come back into vogue and Toronto's system survived to the relief of traditionalists, ecologists, and rail fans everywhere.[21]

II

Timing, as Doucet suggests, was crucial to the survival of Toronto's streetcars but the timing lacked the elegant simplicity implied by his article. Rather it was as intricate, sophisticated, and whimsical as that of a bedroom farce. Of the many turnabouts the 1921 municipal takeover does not seem the most critical, at least not for the "persistence of streetcars" in Toronto. More decisive was the 1938 purchase of PCC cars, surely the most extraordinary moment in the city's transit history. The order proved that Toronto had already departed radically from the course that other cities were following to transit bankruptcy. While most systems were floundering, the TTC found the money to undertake an $11 million modernization programme without increasing its long-term debt.

What made this accomplishment possible was the TTC's remarkable efficiency, as measured by its low operating ratio (operating expenses/operating revenues). Toronto's ratio of 60.2 in 1939 compared very favorably with the American average of 79.1 in 1937. It even surpassed the performance of American street railways in 1917, a peak year for ridership in the United States. Toronto's transit system was also unusually well laid out, its routes closely conforming to the needs of the population. In 1934 Professor Albert S. Richey observed that in no "comparable" North American city was "the entire population ... so well reached by local transportation services." He calculated that more than 99 per cent of the city's inhabitants lived within two thousand feet of

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21. Westland, "P.C.C. Story," 167-172.

a TTC line.[22]

Superior management possibly explained the TTC's unusual efficiency. Harold Kaplan relates that, "For almost thirty years, until his death in 1954, William C. McBrien served as chairman of the board as well as the undisputed leader" of the TTC. Public transit in Toronto thus had the advantage of exceptional continuity of management. Moreover, McBrien was adept at rallying neighborhood and civic groups behind the TTC's conception of the public good: "... The transportation commission was the only City administrative agency that had its own independent sources of political support." It also enjoyed, as long as it remained financially sound, fiscal autonomy. The TTC was therefore relatively free to manipulate its environment to its own satisfaction. It could, for example, resist pressure from city planners and commuters to extend its lines unprofitably.[23]

Yet the TTC was not a miracle worker. Whatever its skills of legerdemain, it could not have mastered an environment as hostile to public transit as, for example, that of Southern California. The viability of any transportation system ultimately rests on the "totality of significant physical, social, and economic relationships" peculiar to the community served. Toronto has provided an unusually hospitable environment for mass transit operations. Granted its location is not ideal: fronting on Lake Ontario, it has a semi-circular shape that "requires much more transit service than if the same population were distributed in a full circle around the downtown." Yet Toronto's topography has probably posed no greater difficulties for mass transit than have the hills and inlets of Halifax and Vancouver or the "mountain" in Hamilton or Montreal. Moreover, while Toronto superficially resembles the American lake ports, its transit system has not had to cope with a bottle neck comparable to the Cuyahoga in Cleveland, the Menominee in Milwaukee, the Loop in Chicago, or Cadillac Square in

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22. TTC Wheels, 41, 93; Dewees, "Decline," 567.

23. Harold Kaplan, Urban Political Systems: A Functional Analysis of Metro Toronto (New York, 1967), 131-133. See also Tennyson, "Mass Transit -- Panacea," 48-49; and Murray, Mass Transit, 33-34.

Detroit.[24]

Nor has it confronted the social problems of the American cities. In the United States racial prejudice has cast its pall over virtually every aspect of urban life, with mass transit numbering among its victims. White commuters have been reluctant to take transit lines across black neighborhoods. Moreover, as the black ghettos coalesced and expanded after 1890, commuting and residential patterns shifted drastically, leaving many cities with geographically obsolete transportation systems. In Chicago, for example, the most fashionable neighborhoods in the early 1890s lay on the city's South Side, the area then blessed with the best transportation facilities. Few electric lines penetrated the crowded Near West Side, its foreign-born population effectively blockading suburban development in that direction. Chicago as a result acquired its distinctive "pinched-in-waist." After 1893, however, a new settlement pattern emerged. The immigrant ghetto dispersed, its erstwhile inhabitants joining the flight westward into the suburbs. On the other hand, the South Side was transformed into a gigantic black ghetto as first the wealthy and later the white middle class fled to newer, segregated neighborhoods. Chicago's economic orientation consequently tilted from a north-south to an east-west axis.[25]

Chicago's transit system, heavily dependent on fixed rail carriers, responded inadequately to the massive shifts in traffic flows. By 1937 its routes were so obsolete that 83 per cent of its riders had to transfer on each trip. In contrast, transfer passengers constituted only half of the TTC's week-day load in 1940. Since both systems offered free transfers, the TTC collected a higher average fare per passenger --

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24. Wilson, "Some Problems," 99. It might also be noted that Canadian winters are not the enemies of public transit people assume them to be. Ridership has traditionally increased with the onslaught of winter, especially before the closed automobile became standard. See K. H. Schaeffer and Elliott Sclar, Access for All: Transportation and Urban Growth (Markham, Ont., 1975), 146; and Mark S. Foster, "The Model-T, the Hard Sell, and Los Angeles's Urban Growth: The Decentralization of Los Angeles during the 1920s," Pacific Historical Review, 44 (November, 1975), 466.

25. Harold M. Mayer and Richard C. Wade, Chicago: Growth of a Metropolis (Chicago, 1969), ch. 3-4. The best study of the emergence of Chicago's black ghetto is Allan Spear, Black Chicago: The Making of a Negro Ghetto (Chicago, 1967).

an important consideration in balancing its books. Urban growth throughout the northern and western United States has approximated the Chicago pattern, with massive population shifts undermining the viability of public transit. Toronto's growth, however, has basically followed the course charted by developers in the late nineteenth century. As the city has expanded, the TTC has had to extend its lines but the Commission has not had to reorient their direction, for there has been no ghetto or forbidden district large enough to distort Toronto's development. The TTC, in sum, has not had to make the adjustments forced upon American transit systems by that country's racial problems.[26]

The TTC has also enjoyed the benefits of Canada's relative poverty, especially in the 1920s, the decisive decade for mass transit in most North American cities. Canadians were then -- and later -- unable to indulge their passion for automobiles to the same degree as could Americans. Poorer to start with, they also had to pay more for an automobile -- 41-54 per cent in 1926 depending on make -- because of high tariffs, freight charges, and sales taxes. As a result, Canadians in 1925 owned less than half as many motor cars per capita. Torontonians, wealthy by Canadian standards, more closely fitted the American mold, as Table I indicates. Still, automobile ownership there lagged behind most American cities in 1929, especially those with roughly comparable populations like Milwaukee, Cincinatti, and Cleveland. Moreover, many of Toronto's motor cars were recent arrivals, for the city had made considerable progress since 1920 when it had boasted only one automobile for every nineteen inhabitants, as opposed to the American national average of one for thirteen or Detroit's ratio in 1919 of one for eight.[27]

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26. Paul Barrett, "Public Policy and Private Choice: Mass Transit and the Automobile in Chicago between the Wars," Business History Review, 49 (Winter, 1975), 473-497; TTC, Wheels, 41, 104; Larry S. Bourne, Private Redevelopment of the Central City: Spatial Processes of Structural Change in the City of Toronto (Chicago, 1967), 58-60.

27. C. Howard Aikman, The Automobile Industry of Canada (Toronto, 1926), 18-19, 25-27; TTC, Wheels, 98; R.D. McKenzie, The Metropolitan Community (New York, 1933), 272; Detroit News, October 5, 1919.

TABLE I

Per Capita Riding and Automobile Ownership in Selected North American Cities, 1929.

City	Population Served (000's)	Annual Revenue Rides Per Capita	Automobiles per 1,000 population
New York	6,217	485	74.7
San Francisco	576	461	198.0
Chicago	3,103	376	128.9
TORONTO	596	331	137.2
St. Louis	832	324	170.0
Boston	1,220	301	125.0
Baltimore	855	265	185.8
Cincinnati	460	244	185.8
Milwaukee	589	241	227.6
Detroit	1,565	240	246.1
Kansas City	500	239	231.8
Cleveland	1,111	236	187.6
Atlanta	317	235	169.3
Richmond	192	221	78.1
Pittsburgh	1,290	205	138.9
Memphis	206	201	219.1
Winnipeg	305	197	80.8
Des Moines	149	192	217.0
Omaha	219	189	203.2
Portland, Ore.	355	168	223.0
Denver	327	162	216.5
Houston	259	159	200.0
Lexington, Ky.	60	105	177.1

Source: R.D. McKenzie, The Metropolitan Community (New York, 1933), 275.

Canadians, owning fewer automobiles, made greater use of mass transit. As Table I attests, there was a close inverse relationship between automobile registrations and riding habit in 1929, the correla-

tion being significant at $< .10$.[28] Since the automobile spread less rapidly in Canada, the country's street railways gained a vital six-year reprieve: total ridership in Canada climbed until 1929, while American street railway patronage curved downward after 1923. Consequently Canadian transit companies were economically better prepared to weather the Depression.

Automobiles did irreversible damage to mass transit where they proliferated most freely. The passengers they carried constituted only part of the loss. They also obstructed traffic. A stalled automobile posed an impassable barrier to a streetcar; en masse, automobiles were by 1920 the cause of what Atlanta's planning committee called "well-nigh unbearable" congestion in the downtown core of most American cities. The congestion hampered public transit, raising its costs per mile, slowing it down to the point where thousands of suburban commuters turned away from it in disgust. Increasingly they took their automobile downtown or limited their trips to outlying areas. The downtown core of the large American cities began withering.[29]

More disastrous for public transit, however, was the loss of the highly profitable short-haul traffic in the downtown area itself as congestion convinced people that they could walk faster than streetcars could crawl. The reduced use of mass transit in the urban core, coupled with the outward march of the city, so lengthened the average trip that American companies, even in the 1920s, were losing money on the bulk of their fares.[30]

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28. The correlation coefficient used is r with the standard test for significance for when $N<50$. See Dean J. Champion, Basic Statistics for Social Research (Scranton, Penn., 1970), 194ff.

29. Blaine A. Brownell, The Urban Ethos in the South 1920-1930 (Baton Rouge, 1975), 118-119; Robert Fogelson, The Fragmented Metropolis: Los Angeles 1850-1950 (Cambridge, Mass., 1967), 179-180.

30. Bion J. Arnold, "The Urban Transportation Problem: A General Discussion," The Annals of the American Academy of Political and Social Science, 37 (January, 1911), 10; Alan D. Anderson, The Origin and Resolution of an Urban Crisis, Baltimore, 1890-1930 (Baltimore, 1977), 96.

Traffic congestion further hurt transit companies by boosting their insurance and repair bills. As early as 1911 one American transportation expert was lamenting a 93.5 per cent increase in less than a decade in expenditures for damages. He noted that the "increase, in itself, ate up almost one-half of the total growth in net earnings from operation, less fixed charges, during the period."[31]

Finally, automobiles "deprived [street] railways of their cheap and remunerative casual business without relieving them of their expensive and unprofitable commuter service." Street railways needed to attract shoppers, holiday goers, and people out visiting their friends or taking in a show to narrow the gap between their off-peak and peak loads. But the automobile was above all else a "pleasure vehicle" and it was precisely these activities that it served best. The supreme irony came in cities where motor cars drew off the cream of the traffic heading for the amusement parks that street railways had built to boost their Sunday and evening business. With automobiles so destructive of mass transit, Canadians were perhaps fortunate in the 1920s -- and since -- in being unable to afford as many as could Americans. However, it would be wrong to make a virtue of economic necessity: it was after all the lack of alternatives rather than superior planning or insight that kept Torontonians and commuters in other Canadian urban centres on overcrowded trams and buses.[32]

III

In discussing the impact of automobiles, three variables have been identified that together determine the viability of a transit system: the riding habit, the short haul, and the relationship between peak and off-

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31. Thomas Conway, Jr., "The Decreasing Financial Returns Upon Urban Street Railway Properties," The Annals of the American Academy of Political and Social Science, 37 (January, 1911), 17.

32. Fogelson, Fragmented Metropolis, 179; Wilson, "Some Problems," 101-105. Scarcity has been a powerful force in shaping the character of Canadian cities and needs more study by historians. For a discussion of its importance in American urban development see Zane L. Miller, "Scarcity, Abundance, and American Urban History," Journal of Urban History, 4 (February, 1978), 131-156.

peak loads. All three variables hinge to a great extent on urban population density. A compact city is more likely to have a high riding habit, numerous short hauls, and a low peak at rush hour. Its transit system will accordingly have a greater chance for survival than that of a sprawling, low-density city like Los Angeles or Dallas. Toronto had the second highest density of any major North American municipality in 1921 and several other cities in Eastern Canada also had extraordinarily high densities for communities their size. As Table II indicates, only Jersey City crammed more people into a square mile than did Toronto. Since 1921 the density of the latter has fluctuated but it has always remained exceptionally high. The national censuses in the early 1970s place it in the same category as New York and Montreal.

How then, has Toronto earned its reputation as the Los Angeles of the North? Its suburban sprawl since World War II is the probable explanation. But the suburbs played a minimal role in the development of mass transit by the TTC in the City of Toronto before 1954, for the TTC "limited itself to serving only Toronto proper. It operated a few suburban routes," Jacob Spelt has written, "but the municipality concerned assumed responsibility for financial deficits...." In general Toronto's suburbanites had to rely on the services of private bus lines until the formation of Metro. Only then did the TTC reluctantly agree to service the outer boroughs. Its profit picture thereafter deteriorated badly. However, until 1954 it was the City of Toronto that determined the fate of the TTC and it was that community's high population density that underwrote the Commission's triumphs.[33]

How is it that Toronto developed into the second most densely populated major city in North America as of 1921? Credit (or blame) can be partly assigned to the Toronto Railway Company, for its policies helped create the congested, compact city that has made mass transit in Toronto work. Beyond its own stockholders, few shared the company's objectives. To attain them it had to wage a thirty year war against Toronto's municipal politicians. Since a municipally-owned street rail-

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33. Spelt, Toronto, 98.

TABLE II

Population Density of Selected North American Cities: 1921, 1931, 1941, 1971*

City	Population 1921 (000's)	Area in Sq. miles 1921	Population per sq. mile (000's) 1921	1931	1941	1971
Jersey City	298	13.0	22.9	24.4	21.1	17.3
TORONTO	522	25.9	20.2	18.6	16.5	19.0
New York City	5,620	299.0	18.8	23.2	24.9	26.3
Milwaukee	457	25.9	17.7	14.1	13.5	7.6
Newark	415	23.5	17.6	18.8	18.2	16.3
Boston	748	43.8	17.1	17.8	16.7	13.9
Paterson, N.J.	136	8.1	16.8	17.2	17.2	17.2
Ottawa	108	6.4	16.7	15.3	16.1	7.1
Philadelphia	1,824	129.7	14.1	15.2	15.2	15.2
Cleveland	797	56.7	14.1	12.7	12.0	9.9
Pittsburgh	588	42.0	14.0	13.1	12.9	9.4
Chicago	2,702	199.4	13.5	16.7	16.4	15.1
Providence, R.I.	238	17.8	13.3	14.2	14.2	9.9
Buffalo	507	38.9	13.0	14.7	14.6	11.2
St. Louis	773	61.4	12.6	13.5	13.4	10.2
Detroit	994	79.6	12.5	11.4	11.8	11.0
Montreal	619	50.2	12.3	17.5	17.9	19.9
San Francisco	507	42.2	12.0	15.1	14.2	15.8
Verdun	25	2.2	11.3	27.2	30.2	----
Quebec City	95	8.8	10.8	14.5	16.8	6.8
Hamilton	114	12.1	9.4	10.3	11.0	6.5
Windsor	39	4.3	9.1	12.6	8.2	4.4
Winnipeg	179	23.2	7.7	9.1	9.3	8.1
Washington	438	60.0	7.3	7.9	10.8	12.3
Vancouver	117	16.9	6.7	5.6	6.4	9.8
Seattle	315	68.4	4.6	5.3	5.4	6.4
Los Angeles	577	364.1	1.6	2.8	3.4	6.1

Sources: Decennial Censuses, Canada and the United States for the central city only.

* Note: American figures are for 1920, 1930, 1940, and 1970.

way could not have won this battle -- to keep the transit system and the city small -- a premature municipal takeover would have had negative consequences for Toronto's transportation development. The city was therefore fortunate that the TRC clung so tenaciously to its franchise. As these assertions are not the standard view of the TRC's place in Toronto's history, the remainder of this paper is devoted to their explication.

Usually the company is indicted for its corruption and profiteering, and The Revenge of the Methodist Bicycle Company by Nelles and Armstrong certainly convicts it of the former charge. There now remains little doubt that it spent several thousand dollars in bribes to obtain its franchise in 1891. Did it, however, also earn exorbitant profits as Doucet has charged? Doucet's own figures give an ambiguous answer: he calculates that the company earned $21 million between 1911 and 1920, or just over $2 million a year on assets valued -- in 1912 -- at $30 million. Both figures -- profit and valuation -- presumably include the company's small electric generating plant, although Doucet skirts this question. Nevertheless, it can be assumed for the sake of argument that the Toronto Railway Company made about $3 million on properties worth, by mutual agreement of the company and the municipal government, $30 million. That works out to an annual rate of return of about 10 per cent. Was that exorbitant? It is significant that the company was prepared to sell its properties to the city. Presumably its owners believed they could more profitably invest the money elsewhere.[34]

Street railways by 1912 were high risk ventures -- the failures of major companies in Cleveland, Kansas City, Pittsburgh, and New York had seriously shaken the confidence of investors. They wanted much more than 10 per cent especially when industrial stocks were bringing such high rates of return. Automotive companies were of course making spectacular profits: Hudson, for example, paid a 900 per cent stock dividend in 1910 after its first year of production. Other industries, much less speculative, were also doing better than traction. Bethlehem Steel in 1902 released earnings of $2 million on assets with a sale price of $10 million. Even banks did almost

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34. Doucet, "Mass Transit and the Failure of Prive Ownership," 7-8, 17.

as well as the Toronto Railway Company: in 1920 both Dominion Bank and the Bank of Toronto made more than 7 per cent on their capital stock and accumulated surplus. Moreover, the TRC apparently earned less than Canada's retail lumbermen whose national association considered 10 per cent profit on turnover a reasonable return. On the other hand, the municipal governments of Boston, Detroit, and Chicago would have considered the TRC's profits excessive, for they deemed 5 or 6 per cent a more reasonable figure.[35]

It is unclear whether the Toronto Railway Company made exorbitant profits. Further comparative research is needed. Until it has been done, historians should be careful not to accept at face value the claims of municipal politicians, reformers, strap-hangers, and other interested parties. Still, the TRC did probably make considerably more money than the average electric railway as Doucet has argued. Certainly its 10 per cent return compared very favourably with the 4-5 per cent averaged by Canada's radials before World War I and the 2.8 per cent rate of return for American electric lines between 1909 and 1917 or the 3.5 per cent made by them in 1945, a boom year for the industry. Most street railways were not very profitable, especially in the smaller Canadian cities before 1900.[36]

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35. J.C. Long, Roy Chapin (Detroit, 1945), 97; Robert Hessen, "The Transformation of Bethlehem Steel, 1904-1909," Business History Review, 46 (Autumn, 1972), 345; Joseph Schull, 100 Years of Banking in Canada: A History of the Toronto-Dominion Bank (Toronto, 1958), 124,211-212; Michael Bliss, A Living Profit: Studies in the Social History of Canadian Business, 1883-1911 (Toronto, 1974), 49; O'Geran, Detroit Street Railways, 335-336; Schaeffer and Sclar, Access for All, 79; Ralph E. Heilman, "Chicago Traction," American Economic Association Quarterly, 9, 3rd Ser. (1908), 382.

36. Due, Intercity Electric Railways, 40; Report of the Federal Railway Commission 1920, reprinted in Smerk, Readings in Urban Transportation; Schneider, Marketing Mass Transit, 18. For information on the difficulties of systems in Moncton, Halifax, Vancouver, Hamilton, and Ottawa before 1900 see Lloyd Machum, A History of Moncton, Town and City 1855-1965 (Moncton, 1965), 181; Brown, "Birney Stronghold," 2-8; Alan Morley, Vancouver: From Milltown to Metropolis (Vancouver, 1961), 116; Mills, Cataract Traction, 75; Tennant, "Capital Traction," 118.

Yet the public believed them fabulously lucrative. Countless newspaper editorials and articles had convinced them that street railways were unusually profitable. The companies knew better but had to be careful in what they said, lest they alarm potential bondholders. Like most myths, the belief in a street railway El Dorado had some basis in fact -- namely, the large profits accumulated by systems in the larger metropolises during the last few years of horsecar operations in the late 1880s and early 1890s when the combination of a fixed fare -- five cents in most North American cities -- and a secular decline in prices made street railways in places like Detroit, Chicago, Toronto, and even Hamilton, excellent investments. But the profitability of most systems declined or ended with electrification.[37]

First of all, many cities saw the switchover in motive power as an opportunity to rewrite and toughen street railway franchises. Hamilton, in fact, set terms so severe in 1892 that they had to be relaxed only four years later when the street railway complained that it could no longer attract capital. Even then the line remained "remarkably unprofitable," missing dividends from 1900 through 1911. Winnipeg, on the other hand, simply refused to grant the existing horsecar company an electric railway franchise, letting the contract instead to a syndicate headed by William Mackenzie and James Ross, the principals in the Toronto Railway Company, who promised to provide service to any area with a specified population density -- a formula that ensured overbuilding of the system.[38]

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37. Melvin C. Holli, Reform in Detroit: Hazen S. Pingree and Urban Politics (New York, 1969), 35; Ralph Heilman, "Chicago Traction," 359; Armstrong and Nelles, The Revenge of the Methodist Bicycle Company: Sunday Streetcars and Municipal Reform in Toronto, 1888-1897 (Toronto, 1977), 27-34; Mills, Cataract Traction, 75.

38. Mills, Cataract Traction, 81, 97; Herbert W. Blake, The Era of Streetcars in Winnipeg 1881-1955 (Winnipeg, 1971); Miller, Fares, 99-103; William Osgood Morgan, "The Indeterminate Permit as a Satisfactory Franchise," The Annals of the American Academy of Political and Social Science, 37 (January, 1911), 146-147.

Toronto, like Winnipeg, used electrification to ease an unpopular horsecar company out of the civic picture. The new franchiseholder, Toronto Railway Company, had to agree to strict new terms including free transfers (for the first time in Toronto), reduced fares at rush hour, all-night service, an annual rental fee of $800 per mile of single track to cover paving costs, and a percentage of the gross receipts. Most onerous, however, was the requirement of immediate electrification. Toronto, like other North American cities, was in a rush to electrify its street railways in order to ease over-crowding in the urban core by opening up new land for development. Also, it did not want to fall behind its rivals in the trappings of modernity and progress. Yet it paid a city to wait a few years for competition between Westinghouse and General Electric to drive down the cost of equipping an electric railway. The price of a set of two electric motors fell $3,800 between 1889 and 1895. But Toronto was in too much of a hurry to shop for bargains and it pressured its street railway promoters into premature electrification.[39]

Most promoters were of course happy to oblige, both because of the profits they expected to make from real estate speculation and stock jobbing and because they misunderstood the economics of operating an electric street railway. From their experience with horsecars they drew the erroneous conclusion that passenger volume and operating costs were the key elements in determining profit and loss. Horsecar systems had low fixed costs -- it was not expensive to buy a team of horses, a light car, and a barn. It was, however, costly feeding and caring for horses. An electric system had the opposite problem - it had lower operating costs and consequently reduced the operating ratio of American street railways by 22 per cent between 1890 and 1902, but it also had much higher fixed costs because it needed a power plant, overhead lines, and heavier rails

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39. Edwin C. Guillet, Toronto From Trading Post to Great City (Toronto, 1934), 142, 147; Christopher Armstrong and H.V. Nelles, Revenge, ch. 4; McShane, Technology and Reform, 16.

and equipment. Exaggerating the benefits of lower operating costs while underestimating the weight of the fixed charges to be carried, promoters had unrealistic expectations of profit.[40]

Similarly, they failed to consider the relationship between profit and distance. Electrification soon doubled the size of most North American cities as street railways rushed outward in a radial pattern. Rides lengthened and costs per passenger mile rose. More power was used than anticipated as the greater distances demanded ever greater speeds. As the lines headed outward, the spaces between them widened, necessitating the construction of unprofitable crosstown lines. In addition, the number of transfer passengers increased. In cities like Toronto with free transfers, the average fare per passenger carried declined sharply. Street railways in New York, Chicago, Boston, and Philadelphia -- cities nominally on a five-cent basis -- thus saw their average fare drop one and a half to two cents below that level by 1907-1909. Inflation also cut into profits after 1897. Until then traction companies had benefitted from a general deflation, and seeing that the fixed five-cent fare brought them greater profits each year, had made it sacrosanct, writing it into their franchises. Unfortunately for the traction companies, the opposition got its revenge after 1897 when prices began mounting. Municipal politicians, urban reformers, commuters, and voters all now swore by the five-cent fare, relenting only at the end of World War I when inflation reached heights that made fare increases unavoidable.[41]

In general, electric railways in Canada and the United States shared common problems: heavy fixed charges, declining revenue per passenger mile, and rising operating costs as trolleys became faster, heavier, and more luxurious. Yet Canadian electric railways typically carried a lower debt burden and fewer unprofitable routes, for they did not have to finagle and build their way into a monopoly position.

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40. McShane, Technology and Reform, 18-20; United States Bureau of the Census, Street and Electric Railways 1902 (Washington, 1905), 10-11.

41. McShane, Technology and Reform, 5; Conway, "Decreasing Returns," 16-21.

Canadian cities awarded monopolies willingly. Franchises were occasionally lost or revoked, but freedom from intraurban competition was apparently universally assured. Perhaps these monopoly privileges reflected the economic realities in Canada where most cities counted themselves lucky to have anyone interested in building a rail system for them. Or it may simply have been a case of Canada's historic sympathy for monopoly.[42]

Although anti-trust legislation in the United States has often had only symbolic intent, that country has shown a greater commitment to competition than has Canada, especially in public transportation. The typical large American city once had several street railways often in direct competition on parallel streets. Manhattan had fifteen street railway companies in 1890; Milwaukee, five; Philadelphia, four in 1895; Chicago, six in 1898; and Washington, fifteen in 1895. Pittsburgh, an extreme case, had one hundred and fourteen street railways operating at one point or another before 1925.[43]

Electric railways found the competition intolerable: it forced them to duplicate service and to extend lines prematurely in order to pre-empt new streets and neighbourhoods. Further losses came when municipalities forced companies to accord free transfers to the customers of their rivals. Competition also led to the con-

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42. See Lloyd G. Reynolds, The Control of Competition in Canada (Cambridge, Mass., 1940), ch. 6-7; Michael Bliss, "Another Anti-Trust Tradition: Canadian Anti-Combines Policy, 1889-1910," Business History Review, 47 (Summer, 1973), 177-188; and Thomas D. Traves, "The Board of Commerce and the Canadian Sugar Refining Industry: A Speculation on the Role of the State in Canada," Canadian Historical Review, 55 (June, 1974), 159-175 for a discussion of the Canadian attitude towards monopoly.

43. Bureau of Census, Railways 1902, 123-124; Heilman, "Chicago Traction," 335; McShane, Technology and Reform, 62; Constance M. Green, Washington: Capital City, 1879-1950 (Princeton, 1963), 51; Wilson, "Some Problems," 87.

struction of redundant electric generating plants. Company bookkeepers therefore clamored for mergers, as did stock market insiders who realized that they could gain far more from promoting a street railway than from running it. As a result, a great merger movement swept the traction industry between 1895 and 1905. Numerous bankruptcies followed in its wake, for it generally took several different steps and layers of debt to fashion the final monopoly. Overcapitalized by a third on the average, American street railways had difficulty thereafter even paying their debt charges. They had crippled themselves trying to reach the same blissful state of monopoly bestowed so readily on Canadian operators.[44]

IV

The pressure of competition gave many American street railways a special incentive to build themselves into bankruptcy. But over-expansion was not simply the result of excessive competition for it was endemic throughout North America, with municipally-owned systems in western Canada as susceptible to it as was private enterprise in Pittsburgh or New York. Over-expansion was in part a function of speed. Few companies resisted the temptation to push their systems to their technological, as opposed to economic limits. Municipal governments also pressured street railways into over-building. Indeed, the price for ignoring the vested interest of city councils in expansion was often the loss of franchise, as in Toronto, or the loss of monopoly, as in the United States. Most municipal politicians in North America wanted rapid suburbanization, both to increase the property tax base and to relieve overcrowding. They also believed they owed their middle-class constituents a suburban life-style. More-

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44. Conway, "Decreasing Returns," 18; Bureau of Census, Railways 1902, ch. 3, 8; Holli, Reform in Detroit, 35.

over, city politicians often had close ties with suburban real estate developers who cultivated their friendship in order to get approval for the roads, sewers, water mains, and power hook-ups needed for subdividing. Influence at City Hall was a sine qua non for successful real estate promotion, for it brought not only governmental favours but also a more pliable attitude from public utilities holding municipal franchises.

Municipal ownership of public utilities, however, offered realtors even more leverage, and as John Weaver has documented, real estate interests often led the fight for municipal ownership of street railways in Canada. In Toronto, for example, it was a mayoralty candidate,E.A. Macdonald, who most energetically championed a municipal takeover of the Toronto Street Railway in 1890-1891. He not incidentally owned large development tracts in the city's east end that the private company refused to service. He apparently realized that municipal ownership was the land speculator's dream, as it later proved to be in Canada's Prairie cities. In Edmonton, Weaver informs us, "the streetcar department served realty interests" and so "ran deficits through most of its history...."[45]

Most North American electric railways functioned as loss leaders for the real estate industry. That was especially true of lines, many of them radials, built by the developers themselves to open up outlying lots. They generally found that profits from land speculation more than offset whatever deficits rail operations incurred. Often in Canada, and occasionally in the United States, speculators also used street railways as expendable pawns in elaborate power promotion schemes. Thus, William Mackenzie and James Ross used Winnipeg's street railway to gain a strangle-hold over the distribu-

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45. John C. Weaver,"Edmonton's Perilous Course, 1904-1929," Urban History Review, No. 2-77 (October 1977), 25. See also Weaver's "'Tomorrow's Metropolis' Revisited: A Critical Assessment of Urban Reform in Canada, 1890-1920," in Gilbert A. Stelter and Alan F.J. Artibise, eds., The Canadian City: Essays in Urban History (Toronto, 1977). For a discussion of Regina's and Calgary's problems with municipal ownership see the aforementioned works by Colin Hatcher.

tion of gas and hydro-electric power in the Winnipeg region. To obtain street railway service, suburban municipalities had to sign long-term contracts with the syndicate's gas and electric subsidiary.[46]

Mackenzie and Ross apparently had a similar scheme in mind for the Toronto Railway Company for they angled in the early 1900s to gain control of the power generated by Niagara Falls. Had they succeeded, then the Toronto Railway Company would perhaps have expanded rapidly as the centre of a radial network extending throughout Southern Ontario. But Ontario Hydro built the power grid instead and it was this government commission rather than the TRC's proprietors who "sponsored plans for a system of high-speed modern electric railways centring in Toronto...," after 1912.[47]

Thanks to the timely intervention of Ontario Hydro, the Toronto Railway Company never became integrated into any larger provincial or national promotion. To its dying day, it was the atypical street railway that served no greater end than its own profitability. Historians have not sufficiently emphasized how extraordinary its dedication to profit was in an era when real estate developers, stock jobbers, utility promoters, housing reformers, municipal politicians, and self-righteous commuters habitually forced street railways into acts of crippling self-abnegation. A 1912 survey of the TRC, comparing it to "U.S. cities of similar size" concluded that "Toronto had the lowest miles of track per capita and the highest receipts per mile of track." Doucet has further shown it to have

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46. J.E. Rea, "How Winnipeg was Nearly Won," in A.R. McCormack and Ian MacPherson, eds., Cities in the West: Papers of the Western Canada Urban History Conference (Ottawa, 1975), 74-86. See also Christopher Armstrong and H.V. Nelles, "Getting Your Way in Nova Scotia: 'Tweaking' Halifax, 1909-1917," Acadiensis, 5 (Spring, 1976), 105-131 for a discussion of the interrelationship between "power" politics and street railways in Halifax.

47. Due, Intercity Electric Railways, 33; H.V. Nelles, The Politics of Development: Forests, Mines & Hydro-Electric Power in Ontario, 1849-1941 (Toronto, 1974), ch. 7.

had considerably fewer miles of track per capita than other major Canadian centres in 1915. If not alone in its belief that small is beautiful, the TRC was at least unusually adamant in its refusal to expand past the point of maximum profitability. Those lines that shared its philosophy of smallness -- for example, those in Montreal and Halifax -- also enjoyed remarkably good years in the 1910s. Halifax Electric Tramway in 1915 converted more than one-third of its operating revenue into dividends. It was perhaps too profitable a line, for it soon became the target of a takeover bid.[48]

Why did the Toronto Railway Company reject expansion? Its historians have not answered this question. Perhaps its proprietors, William Mackenzie and associates, simply needed one assured profit-maker to provide a constant stream of fresh capital for their more speculative ventures like Canadian Northern Railway. Or it may simply have been the level at which the Mackenzie syndicate operated. Speculation in urban real estate was less important to them than railroad and utility promotions. Once the Niagara power scheme fell through the Toronto Railway Company probably receded to the back of their minds. The failure of the Toronto Belt Line Railway, an early suburban line, in 1892 also possibly dispelled whatever inclinations towards expansion the TRC once had by vividly demonstrating the pitfalls of low-density operations. Finally, the taxation policy of the city of Toronto discouraged extension of the TRC lines, for each mile built by the company added $800 to its annual taxes. It is suggestive that Ottawa -- another city with low track mileage per capita and a high population density in 1921 -- had a similar tax.[49]

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48. Doucet, "Mass Transit and the Failure of Private Ownership," 10, 16; TTC, Wheels, 19; Journal of the House of Assembly, Nova Scotia, Part 2, Appendix 27, 116-117.

49. Bruce West, Toronto (Toronto, 1967), 187-188; G. P. de T. Glazebrook, The Story of Toronto (Toronto, 1971), 178-181.

Whatever the precise cause, the TRC's refusal to build past the city's 1891 boundaries had momentous repercussions for Toronto. First, it helped fashion a city with an unusually high population density and riding habit, in other words, one with an environment favorable to mass transit. Second, it slowed the flight of Toronto's middle class and industrial plants to the suburbs. The social consequences of this lag in Toronto's development must have been immense in terms of class relations, the city's tax structure, and employment opportunities for the inner city poor. Moreover, extrapolating from a recent study of American municipal reform, it may well be that the forced residence of the middle class in the core city accounted, at least in part, for the anachronistic persistence of "Toronto the Good" -- the city with Protestant middle-class values -- until mid-century.[50]

Third, the tight-fisted policies of the TRC finally impelled the municipal government to organize its own civic railway in 1911 to service outlying areas boycotted by the private concern. Since the courts upheld the TRC's monopoly rights within Toronto's 1891 boundaries, the civic railway was unable to penetrate the central city and its passengers had to pay an additional fare to reach the central business district. For ten years -- until the expiration of the TRC's franchise -- Toronto in effect had a zone fare system, as in much of Europe. By 1921, one hundred thousand passengers a day were paying multiple fares. Suburban middle-class commuters therefore contributed a fairer share of the actual costs of transporting them than in other North American cities whose flat fare system forced inner city residents to subsidize suburbanization. Fare zones disappeared in 1921 but the TTC later admitted the wisdom of the company's actions by instituting zones of its own for the suburban boroughs.[51]

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50. See Michael P. McCarthy, "On Bosses, Reformers, and Urban Growth: Some Suggestions for a Political Typology of American Cities," Journal of Urban History, 4(November, 1977), 29-35.

51. TTC, Wheels, 15-17.

The Toronto Railway Company bestowed one final benefit on the city: a system so small that the TTC could double it in size during the 1920s. Thus Toronto's system expanded rapidly while most American systems stagnated or contracted. As a result, the TTC enjoyed several advantages over American transit planners. Since the direction of Toronto's growth was by 1921 well established, the commission was able to place its routes rationally and precisely, deploying streetcars only in areas with sufficient traffic volume to support them. Moreover, the recent improvements in bus design gave TTC a cheaper, more flexible tool for developing traffic than street railways had ever provided. The TTC accordingly became one of the first transit operators in Canada to add buses to its routes. It introduced them first to North Toronto, a district annexed in 1912 but ignored by the private traction company. The new motor-bus route contributed to a housing boom that made possible the substitution of a more costly and permanent trolley-bus service the following year. And then in 1925 the trolley-buses gave way to streetcars. This close calibration of service with demand inevitably added to the TTC's profit picture, contributing to its long-run viability. What made it possible was the previous conservatism of the Toronto Railway Company. Had the private monopoly yielded to public opinion the TTC might have inherited a system so large as to foreclose its options.[52]

It might be objected that the poor surely suffered from the TRC's policies. One would assume that Toronto's high-density development sharpened competition for inner city housing to their detriment. Yet it is not clear that the poor actually suffered any more than usual under the TRC's regime. Living conditions in the slums of Toronto do not appear to have been worse than in cities with more expansion-minded street railways. Cleveland's traction monopoly was so addicted to building that it bankrupted itself in 1909 and yet that city in 1916 packed three times as many people into each acre of its tenement house district as

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52. TTC, Wheels, 95-97.

were found in the "Ward," Toronto's worst slum. On the other hand, Torontonians did pay high rents -- second only to Winnipeg among Canada's twelve largest cities in 1921. But the city also ranked fourth among the twelve in home ownership and fifth in terms of persons per dwelling. As Table III indicates, its standing was even more exceptional in the North American context, for only a handful of the major American cities could -- despite their zeal in building street railways -- compete with it in housing. The city was an anomaly that has to be explained by urban historians. Its development to 1921 suggests that the relationship between urban density and overcrowding is not as straight-forward as one might imagine. Further research, however, is needed to establish the precise impact of the TRC's restrictive policies. Such a study will probably show that the company's niggardly concern for profit most adversely affected the city's middle class by retarding their movement outward to the "crabgrass frontier." If true, then the final tribute to the TRC might be that it postponed Toronto's suburban sprawl.[53]

V

Avarice, poverty, monopoly, geography, and technological backwardness together laid the foundations for Toronto's success in urban transit. Had the city been wealthier between 1891 and 1921, its business world more competitive and progressive, or its transit company less crafty, it would not have earned its reputation twenty years later for possessing the best public transportation system in North America. As for the Toronto Railway Company, while its policies lacked the Napoleonic grandeur of those followed by street railways across the border, it did

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53. Toronto Bureau of Municipal Research, "What is 'The Ward' Going to do with Toronto?" (December, 1918) City of Toronto Archives, 68 (I wish to thank Greg Kealey for letting me see his copy of this report.); Sixth Census of Canada, 1921, III, Population, 11, 58-59, 66. For a comparison of housing conditions in Montreal and Toronto see Terry Copp, The Anatomy of Poverty (Toronto, 1974), ch. 5; Michael J. Piva, "The Condition of the Working Class in Toronto, 1900-1921," unpublished Ph.D. dissertation, Concordia University (1975), ch. 6; and Gregory S. Kealey, Hogtown: Working Class Toronto at the Turn of the Century (Toronto, 1974).

TABLE III

Housing Characteristics

of Selected North American Cities: 1921[1]

City	Population 1921 (000's)	Number of Families[2] (000's)	Number of Dwellings (000's)	Percentage of Families Owning their Dwelling (%)	Persons per Dwelling
London	61	16	14.2	55.8	4.3
Windsor	39	10	7.8	54.7	5.0
Hamilton	114	29	24.1	50.4	4.7
Edmonton	59	15	12.4	47.7	4.7
TORONTO	522	130	98.6	46.9	5.3
Baltimore	734	167	136.3	46.3	5.4
Calgary	63	16	13.0	45.6	4.9
Winnipeg	179	42	29.9	42.6	6.0
Philadelphia	1,824	403	352.9	39.5	5.2
Buffalo	507	116	73.9	38.6	6.9
Detroit	994	219	153.2	38.3	6.5
Milwaukee	457	106	66.9	35.5	6.8
Cleveland	797	183	116.5	35.1	6.8
Los Angeles	577	159	125.0	34.7	4.6
Vancouver	117	30	21.5	34.5	5.5
Halifax	58	13	9.2	33.5	6.3
Ottawa	108	25	19.6	33.1	5.5
Washington	438	96	72.2	30.3	6.1
Cincinnati	401	106	62.9	28.7	6.4
Pittsburgh	588	130	93.9	28.3	4.7
San Francisco	507	123	90.1	27.4	5.6
Quebec City	95	19	15.6	27.2	6.1
Chicago	2,702	624	335.8	27.0	8.0
St. Louis	773	191	118.1	23.8	6.5
Newark	415	93	41.5	20.2	10.0
Boston	748	165	79.6	18.5	9.4
Montreal	619	135	94.9	14.8	6.5
New York	5,620	1,278	366.0	12.7	15.4

Sources: Decennial Censuses, Canada and the United States for the central city only.

Notes: 1. American figures are for 1920.

2. The Canadian and American censuses had in 1920-1921 slightly different definitions of "family" which limits comparability. The Canadian figures refer to "private families" and exclude servants, boarders, and occupants of hotels, institutions, lodging houses, etc. The American figures refer to "census families" and include these groups. The differing definitions contribute to the comparatively low American ownership ratios, but do not account for them in toto, for the difference between "census" and "private" families was only marginal. For the Canadian cities tabulated here it was less than 10 per cent. See the Sixth Census of Canada, III, Population, vii; and Twelfth Census of the United States, II, Population, 1265, 1279 for elaboration of these points.

in its own conservative, penny-pinching way make a positive contribution to Toronto's development. Its legacy was two-fold: first, a consensus -- owing to its awesome unpopularity -- in favour of municipal ownership that made it easier for the TTC to win popular approval; and second, a densely populated city with a high riding habit that made mass transit uniquely viable in Toronto. For three decades the TTC followed in the monopoly's footsteps, placing profit first among its goals. Granted it quickly pushed its routes past the boundaries arbitrarily set by the private company, but it too drew a line beyond which it refused to budge. It kept its system -- and the city -- compact for another generation.

Since World War II, the preconditions for transit success have slipped away as Toronto has become Americanized. With the formation of Metro in 1953, the TTC was forced to absorb thirty suburban bus lines and since then has had to service the kind of low-density area that it and the Toronto Railway Company had always avoided. As Toronto's suburbs grew, and the TTC's independence waned, transportation policies became increasingly "directed toward the suburban commuter, a market," John Sewell has remarked, "that will ultimately destroy the TTC." With the Commission's assistance, Toronto has expanded outward at a spectacular pace since the war, thereby reducing the population density of Metro Toronto by one-third between 1941 and 1971. The emerging pattern of low-density development has severely damaged the economic viability of mass transit in the City of Toronto as mounting deficits have forced service cutbacks even on popular routes. Moreover, as Toronto has solidified its imperial position in Canada, the nation's wealth has poured into it, making possible a level of prosperity and automobile ownership that have further undermined public transportation in the city. Finally, the TTC has contributed to its own decline by developing an American passion for expensive hardware. Its subway programme has fueled a five-fold increase in its operating deficit between 1972 and 1976. The city and its system are losing their uniqueness as the days of the Toronto Railway Company recede even farther into the past, and the time may soon come when

Toronto and the TTC will no longer be the marvel of the continent. Yet the chief legacy from the TRC -- the amazing density of the municipality of Toronto -- survives, and with it survives the hope of continued transportation leadership.[54]

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54. Sewell, "Public Transit," 51; Lea & Associates, Urban Transportation, 12-16; Eleventh Census of Canada, Special Bulletin (June, 1973); Spelt, Toronto, 82. See also Rae, "Mythology," 87-88.