

Urban Transportation in Cuba: Past, Present and Future; What Can We Learn from the U.S. Experience?

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I. Recent Developments

The urban transportation problems in Cuba have taken a turn for the worse in recent years as the main source of fossil fuel imports has rapidly dried down. Russia and its newly formed independent sister states are having their own internal problems to deal with and, as a consequence, the flow of oil to the beleaguered island has dwindled to a precious minimum.

In addition, other factors such as the lack of repair parts and the gross overuse of the units still in service, have cut down availability of usable buses in the city-province of Havana from some 2,000 units in the early and mid-1980s to some 600 in the present. It is reasonable to believe these conditions are similar throughout the major urban centers in the island.

This latest turn of events has brought into focus again how the current government's mismanagement destroyed a jewel of an urban transit system in the city of Havana.

II. Impact of the Demise of the Socialist System

Year: 1991

The urban transportation crisis is not a new phenomenon in the general deteriorating conditions of the island nation. In early 1991, a "public services crisis" was reported by the Cuban media. Users, it was told, were not paying for electricity consumed, telephone services, and transit fares. The Empresa de Omnibus Urbanos de La Habana estimated its annual losses due to fare evasion at some \$25 million. Consideration was being given to the reestablishment of the bus "conductor" to help curb the situation (buses have been manned by just the driver for many years). Major problems were identified at that time as: drivers absenteeism, lack of spare parts,

and fuel shortages.

Later that year, since the crisis has not abated, bus routes in Havana were slashed from 169 to 114 in order to save fuel, tires, and spare parts. Three categories of routes with different priority levels were established. Some of the less used routes were shortened, forcing riders in the outskirts to walk longer distances to reach the urban buses.

Year: 1992

It was reported in the Cuban media that there have been more than thirty accidental deaths due to persons riding buses hanging from doors and windows. The report indicated stricter enforcement was needed of a government directive not allowing more than 100 or 150 riders per bus. It was also reported that at least fifteen units broke down because of overcrowding --the engine simply did not have enough power to carry the overload.

Year: 1993

In early 1993, it was reported by the weekly *Juventud Rebelde* that only one-third of Havana's buses that were in operation two years ago were still in service. Some three million boardings are carried daily by between 500 and 550 buses; the rolling stock suffer greatly due to this gross overuse.

In January, 1993, four persons died as a result of riders hanging outside the buses. Later in the year, it was announced that several bus routes would be realigned to only use streets that were in good state of repair.

By mid-1993, it was reported that out of 1,649 buses, only 639 are operative (mostly Hungarian Ikarus buses assembled in Cuba). This number included 291 units received as donations from various Spanish organizations. For 1992, there were an estimated 2.16 million daily boardings in the Havana region; some three million daily boardings were forecast for 1993. To be able to satisfy this demand, several important measures were needed: limit the number of standees to 70 or 100 per bus, increase service frequencies during peak hours, increase the length between stops, and further shorten some of the routes. Also in 1993, it was reported by Cuban government officials at international conferences and workshops that "Havana is now a more human and clean city since its two million residents started using bicycles to move around". According to official sources, bike usage as a response to the public transportation crisis had a positive effect on environmental quality by reducing the stress, helped the population in reducing obesity and resulted in cleaner air. Lack of fuel and spare parts were still critical problems.

At the beginning of the summer season, it was announced that no bus service from central Havana to the eastern beaches would be available since "there are no buses, no tires, no batteries, and no spare parts". A plan was under study to facilitate the crossing of the bay tunnel for bike riders.

Also, a "vigilance and protection brigade" was formed in the Lawton area to protect the few public buses that served the area.

Year: 1994

As of this writing, it appears that the crisis has intensified. Flat-bed trucks have become an important mode of transportation in Havana where citizens ride with their bikes to certain stops, then proceed the rest of the way by bike. One wonders how locals get to work, and how commerce and other everyday life activities take place under these conditions. Coping and survival may be the only serious economic activity happening under these "special period" circumstances.

III. Urban Transit in Havana in the 1950s

Those of us who grew up in that city in the 1950s, know that the bus system, both local and interurban, was the lifeline of the region. The *Cooperativa de Omnibus Aliados, S.A.*, or **C.O.A.**, as it was known then, was a marvelous way to get around in a fast, cheap and efficient way. Some thirty routes covered almost every corner of the approximately forty-four square miles that encompassed the city and many of its suburban "*repartos*" or boroughs. Additional service was provided by a second, smaller system, called *Autobuses Modernos, S.A.*, which consisted mainly of the routes that until the early 1950s were served by street cars. *Autobuses* was also privately run, but due to chronic labor problems was less successful at profit-making.

Havana was a high density, mature and vibrant city in the 1950s. The municipal boundaries covered some 113 square kilometers (44 square miles) and included about 1.5 million inhabitants. This population density was important to allow for the privately-owned and operated *C.O.A.* system to provide excellent service, and also show a margin of profit at the end of the year. Compare Havana's population density of 21,000 persons per square mile to Dade County's 7,000 per square mile today and it is obvious the two regions are difficult to compare for public transit service purposes.

Also, compare metropolitan Havana's size, including the municipalities of Marianao, Guanabacoa and Regla, of about 550 square kilometers (212 square miles) with present day urbanized Dade County's 900

square kilometers (347 square miles). The entire Havana province had an area of about 7,300 square kilometers (2,818 square miles). The total area of Dade County today is 5,200 square kilometers (2,008 square miles).

Presently, the city of Havana and its former surrounding municipalities have attained the status of city-province, engulfing areas that were previously suburban, ex-urban, or rural. Its boundaries were increased substantially at the time the national government redesigned the shape of the historical political / administrative / geographic subdivisions, carving a total of fourteen provinces out of the traditional and historic six that existed until the early 1980s.

The city-province of Havana continues to be the largest urban area of the country, with a population now estimated at 2.55 million residents. At the national level, there are also eight other urban areas with more than 100,000 residents, the largest being Santiago de Cuba, with an estimated 400,000 residents. And, finally, seven other areas with 50,000 to 100,000 population, the largest being Ciego de Avila with 83,000 residents. All these urban areas have now or will need some form of public urban transportation and/or improvements it sustained economic

growth and regional development/viability become a national goal.

IV. Automobile Ownership and Use

In addition, and although statistics on automobile ownership for the period are scarce and unreliable, Havana was not a city made for the private automobile. Automobile ownership was not as nearly as prevalent then as it is today in Dade County or in many other cities of the developed world. [The 1958-59 Yearbook of the Banco Nacional de Cuba (Cuban National Treasury) reports a total of 174,129 private vehicles in the island, with an additional 18,900 taxis, 4,200 buses and 46,000 trucks.] Motorists had to scramble in many parts of old Havana to find

parking spaces during business hours. After hours, of course, it was different. But many Havanians used their cars to enjoy their leisure time, to go sightseeing or visit friends and relatives, and much less frequently to go to work. The trip to work, for the most part, was made on the public transit system.

During this century, Havana grew in many directions, but mostly retained a strong tendency to remain a very compact city. Yes, there was suburban expansion to the south and west (the near est side was mostly taken by the bay, some heavy industrial uses, and large undeveloped areas adjacent to the coastal ridge) but many city dwellers continued to prefer the closer-in communities of Vedado, Santos Suarez, Cerro, Lawton, Ensanche and other where moderately priced housing was as abundant as ubiquitous. [It should be noted that the José Martí International Airport in the town of Rancho Boyeros was a short 17 kilometers (roughly 11 miles) away from the center of Havana. Florida International University's (FIU) main campus is farther away from Miami's downtown than this.]

V. Transit System Operation Characteristics

Several interesting "production-oriented" characteristics of Havana's transit system are worth noting. Since every bus route had its own terminal and maintenance garage, revenue service started just as the bus left the terminal and ended when the bus returned at the end of its run, there was no wasted dead-ending at all. It is hard to find a higher productivity system. [It must be noted that some routes were paired, i.e., they were under common operating / ownership agreements. For example: routes 30 and 57, serving Vedado and La Sierra; 21 and 22 serving Marianao; 23, 24 and 25 serving Lawton; 26 and 27 serving Vedado; 3 and 5 serving Guanabacoa; 16, 17 and 18 serving the Cerro and Palatino boroughs.]

Most routes were overcrowded in the peak morning and afternoon hours, even though service frequency

was usually at or under three minutes with a great deal of duplication of service in the central city area. Still, bus ridership was also high during off-peak hours, with lots of short trips to shopping and other purposes distributed throughout the entire day. No route schedules or timetables were available to the public. One simply went to the closest bus stop and, within seconds, a bus would show up. If it was crowded (meaning no empty seats), one would just wait

a couple of minutes for the next one.

Two other characteristics made the Havana bus system uniquely "productive". One, there was a conductor. The driver's primary function was to drive, while the conductor collected fares, provided route information, made change, issued transfers, and indicated through the use of the bell when to stop and go. The conductor's functions were importantly linked to other efficient operating characteristic: buses would only come to a complete stop for certain riders, mostly the elderly and women.

For others, the bus would only slow down just enough to allow the rider to grab onto the door handle to get on, or to jump out (in the same fashion riders mount and dismount the trolleys in San Francisco, California). Conservative estimates indicate these two items by themselves represent an important productivity factor, even after considering the wages/benefits paid to the conductor. When the less wear-and-tear on the engine/brakes, and the fuel savings of buses that don't always make full stops are taken into account, the real savings could be substantial. [It has to be understood that many buses in Havana rode with an open front door, and that riders could get on or off through either door. Also, personal injury claims or accidents involving *C.O.A.* buses were rare occurrences.]

VI. Relevant Issues: The U.S. Experience

The following are among the most relevant factors that affect the provision of public transit services in a city or region:

- * Service area --just how large is that area and what types of demands need to be satisfied by the service provider;
- * Population density and other related characteristics;
- * Private automobile availability per person and/or family, and how the vehicle(s) is/are used;
- * Geographic distribution and segregation of human activities/land uses inside the urban area;
- * Size and other characteristics of the labor force-employment levels, major industry employers, etc.;
- * Historical pattern of local/regional physical and economic development.

Cities in Cuba developed following the traditional European model of high population density and almost full integration of land uses and other human activities, where housing and economic activities like retail commercial, government/public uses, entertainment, transportation, parks and other open/green spaces are mixed in the urban agglomeration. Only the medium-to-heavy industrial uses are segregated in this model. This pattern was also the one observed in the historic centers of Boston, New York City, Philadelphia, Baltimore, etc.

But contrary to the U.S. experience, especially since the development of the automobile at the turn of the century and its incredibly fast popularization right after World War II, Cuban cities did not become "Auto"-matized overnight. Car ownership was not prevalent in postwar Cuba, at least not to the extent it

was in the United States. Cities in Cuba continued to grow as rural areas slowly lost population to the urban attraction of job availability and better opportunities. For the most part, most Cuban cities grew moderately through a combination of natural growth and some modicum of domestic migration. Havana, due to its own size and economic momentum, grew faster than other Cuban urban areas, gaining both through natural growth as well as significant domestic and foreign migration. Spaniards, a steady trickle of Chinese nationals and some European Jews were the only significant migrations affecting population growth in the prewar years. Spaniards continued to migrate even after Cuba's independence was attained in 1902, although this group became much less significant between the end of the second world war in 1945 and the beginning of the socialist period in 1959.

The postwar growth pattern of American cities is a troublesome one. The prevalence of the private automobile ownership has had a profound effect in the urban fabric of America. With a sustained higher rate of economic development, many American families found that single-family home ownership was relatively easy to attain. The two-income family, where both the husband and wife have full-time jobs, brought an added measure of affluence to a larger segment of the middle and lower-middle classes. However, there was a larger "social" price to be paid. Affordable single-family, detached homes imply the need for cheaper land on which to build them. This is not always available in economic quantities near or adjacent to where public services can easily or efficiently be expanded. As newer and larger housing development are built farther and farther away from the urban core, densities drop dramatically and public transit services lose the edge they have when serving densely populated areas. As a corollary, private automotive use for the trip to and from work becomes a necessity since frequent transit service may not be justifiable in these areas, and the duration of the trip is also a disincentive to its use.

Under this futile scenario, and guessing about the extraordinary circumstance facing the reconstruction efforts, it is reasonable to doubt the ability of this model to effectively cope with the most pressing mobility problems facing Cuban urban areas during that period.

A recent study directed by Dr. Manuel Cereijo, from the College of Engineering and Design at FIU, under the auspices of the Cuban American National Foundation, has indicated an immediate capital investment need of some US\$310 million to purchase buses and upgrade transit facilities in the thirteen largest Cuban urban markets. This amount appears to be low since it was based on a \$40,000 per bus figure. Currently, a standard new bus purchased in the United States has a price tag of closer to \$175,000. In any case, the report makes a strong case for the acquisition of 5,345 buses to satisfy the demand for interurban trips in these major Cuban cities. In addition to the capital costs, the report calls for some US\$230 million for annual operating costs.

Given the dismal state of affairs in public transportation, the national reconstruction efforts may need to focus on using the pre-socialist state model in which groups of private entrepreneurs, with some governmental overview, provided for the urban transit needs. This model worked very well in the past, and it is still viable in many European and Latin American cities. The most significant down side is that it may require partial governmental subsidies to insure that service is provided to out of the way areas and at times when it may not be economically justifiable.

Times have changed since *C.O.A.* and *Autobuses Modernos, S.A.* were busily carrying millions of riders back and forth in pre-socialist Havana. It may be more difficult today to operate a major transit system the way it was done forty years ago. Still, Havanians today, in addition to all the other inequities their government imposes on them, have seen their transit system along with their city deteriorate, and this at a time when they most need their mobility to survive.

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