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RAIL TRANSPORT AND PASSENGER URBAN MOBILITY IN SAO PAULO METROPOLITAN AREA

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ABSTRACT

The neglectof the rail sector in Brazil that went on for decades is fortunately being overcome, especially in the metropolitan region of São Paulo, with the subways and monorails, an example to other Brazilian metropolitan regions. The historical disconnection between the passenger transport modals combined with the increasing private vehicle fleet and the lack of investment in mass transit systems are responsible for a wasteful circulation that interferes negatively in the metropolitan population. In São Paulo, it is predicted that traffic jams and congestion of public transport will besurpassed with policies aimed at mass transit rail, with better matching of costs and benefits.

Key-Words: Urban Mobility; Rail Transport; Metropolitan Areas; Development and Perspectives; Urban Quality.

I. INTRODUCTION

Rail transport in Brazil was delayed for decades by the government without modernization and investment. This led the road network and the machinery to be greatly affected. The situation worsened and reached its apex in the 1980s, when the railway network showed the modal virtually bankrupt. During the 1990s, under the administration of the President of the Republic Fernando Henrique Cardoso, freight railways were included in the National Privatization Program. The alteration brought about changes that drastically altered the segment of cargo and passenger rail. The passenger rail segment is more complex and eventually became almost suburban, with the suppression of medium and long distance intercity routes. In thatcontext, the creation of the Brazilian Company of Urban Trains (CBTU) – a subsidiary of Federal Railway (RFFSA) –, in 1984, was fundamental.The company began managing the networks of São Paulo and Rio de Janeiro. In a further moment, it was also responsible for Recife, Belo Horizonte, Fortaleza, Natal and Joao Pessoa. In the State of São Paulo, all railways under the control of the State Government of São Paulo were unified in 1971 to form the FerroviaPaulista S.A. (FEPASA). The management of passenger transport in metropolitan regions of the state was in charge of FEPASA DRM. In May 1992, the São Paulo Metropolitan Trains Company (CPTM) was created. The latter incorporated FEPASA DRMin 1996. With the beginning of the privatization of the FEPASA network designed to cargotransport, passenger transport remained under the responsibility of the state. São Paulo's subway also remained under the control of the State. In 2009, the operations of Line 4 - Yellow - under the concession of private exploration by Via Quatro, from the CCR group, started. The new investments made at

the time allowed the development of the passenger rail system. Issues related to urban mobility gained great importance on the government and the political class. There is currently underway a considerable number of metro-rail projects whichwill change the cities'landscape and the population'stravels, enabling this modal to perform safely and economically. (ANPTRILHOS, 2012) (a).

The National Association of Rail Passenger Carriers (ANPTrilhos) and the Institute for Applied Economic Research (IPEA) had accurate data that showed the situation. In 1997 the total public transport was responsible for 68% of the travels in Brazilian cities with more than 60,000 inhabitants. In 2005 this percentage fell to 51%, indicating a serious situation, evidencing that public transport had lost ground to other means of transport. (ANPTRILHOS, 2012) (b).

Projects that have been carried out and recent actions, especially taken by the Growth Acceleration Program (PAC) and the Government of São Paulo, act to recover and enhance the role of rail passenger transportation. Also important is the discussion of the cheapening of electricity applied to the rail system.

II. RAIL PASSENGER TRANSPORT IN SÃO PAULO METROPOLITAN AREA

The process ofdevelopment of the metropolis of São Paulo was due to the urban sprawl,which formed conurbations, with an urban stain that spans over several neighboring municipalities. Today the metropolis is formed by 39 municipalities and is undergoing a process of urban decentralization. The history of São Paulo has pioneer roots, especially in trade. Until the late nineteenth century it was a small town. In 1900 the city had about 240 thousand inhabitants with an increase that lasted throughout the twentieth century (MATOS, 2009).

The automobiles generated public policies that catered to individual transport, creating degradation of urban areas and social and cultural relations. In developed countries there was an expansion of peripheral areas, which is late in developing countries. The traditional city has concentration, while the peripheral area is not often associated with urbanity. The cities have a historical, civic, cultural and economic center. The city with its neighboring, intermediate and peripheral areas converge to this center. In Europe the peripheralization was less intense,result of urban tradition andmajor investments in public andmass transport. Among the prospects for development of rail transportation in the metropolitan region of São Paulo, there are several important projects. Firstly, there are the projects in progress in São Paulo Metro, including the monorail project.

III. SUSTAINABILITY AND RAIL TRANSPORT IN THE METROPOLITAN AREAS

With the abandonment of the government, the metro-rail transport system did not follow the growth of cities. In large urban centers, traffic jamsabound. The conclusion comes from a study developed by the National Association of Rail Passenger Carriers (ANP). This paper shows that mobility, quality of life and the population's productivitywere seriously affected. To increase the participation of rail transportation in urban transport, there is a bill before Congress that will become the main premise of the national policy of urban mobility. It aims at making mass public transport more effectively so that users consider giving up theirindividual means of travel. The protagonist of this transformation is efficient rail transportation. The official text was approved in Congress and received the assent of the Senate Committee onInfrastructure. One of the main points is the discount on energy prices for trains and subways administrators. In the past similar measure was adopted and boosted the sector; in1968 the metro-rail system received a discount on electricity tariffs to

subsidize the ticket and encourage its use. According to ANPTrilhos that benefit did not last long, though. At the time, the energy policy, aimed at reducing the consumption of electricity during peak hours,surcharged consumption during peak hours. Classified as industrial consumers,railway operating companies had their activitiesaffected and their costs increased, since their operating peak is precisely the time of maximum consumption. It is important to point out that electric power represents up to 30% of the operating costs of the metro-rail passenger operators;thus appropriate pricing policies are necessary for the electricity operators. (ANPTRILHOS, 2012) (d). The Institute of Applied Economic Research (IPEA)carried out a study on mobility in major Brazilian urban centers which shows that mobility counts on the heavy use of motorized individual transport, with high costs for the cities. Environmental problems, loss of time with traffic jams and traffic accidents bring forth diseconomies identified by the survey indicated. In March 2012 the University of São Paulo (USP) released research on losses arising from traffic and problems related to urban mobility in São Paulo,which indicate that the city suffers with unnecessary fuel usage and with the loss of hours not worked. According to another survey by the National Confederation of Industry (CNI), the collective transport is used by 61% of the population. Systems of urban and metropolitan buses predominate, operating in 85% of the municipalities and reaching a level of 36% of all trips.(ANPTRILHOS, 2012) (d). The solution to this deadlock is ongoing for the serious problem of low mobility and decreased quality of life in large cities, especially in São Paulo. No transport modal forpeople or cargo is as efficient and accurate as the rail transportation. Its ability to meet high demands withdraws thousands of vehicles from roads and urban areas. The resulting benefits are less pollution, less congestion and the consequent improvement of life quality and the wealth flow.(ANPTRILHOS, 2012). For the São Paulo metropolis, the path is very clear and it should keep on guiding the foremost transport policy and road system.The railways are ‘adopted’ by administrators to solve the urban chaos of the São Paulo metropolis. The Metropolitan Transportation System under the jurisdiction of the State of São Paulo has the conditions to solve the problem of the modals’ integration, with the expansion plan underway. Of 6.4 million passengers daily, 3 million use the subway, 1.8 million use buses and 1.6 million others travel on CPTM trains. The integration of modal appears in most travels and rails span the length of 323.3km, of which 262km belong to railways. The remaining 61km comprise the 55 subway stations. The São Paulo Metropolitan Trains Company (CPTM) plays an important role in the readjustment of the transport infrastructure in Greater São Paulo, with 262km of lines and 88 stations serving 22 of the 39 municipalities that make up the Greater São Paulo. The number of users does not stop increasing, which accounts for over 30% of all passengers traveling on tracks in the country. (ANPTRILHOS, 2012) (e). According to ANPTrilhos, authorities and industry experts say traffic in big cities will only improve with efficient public transport. (ANPTRILHOS, 2012) (e). Mass transit rail is the best one to perform this task.

IV. RAIL PASSENGER TRANSPORT, THE DEVELOPMENT AND URBAN PROBLEMS OF SÃO PAULO METROPOLITAN REGION

With the advent of the railway, from the 1860s, the urban expansion of the city of São Paulo has accelerated and surpassed the colonial boundaries. The railway brought to town the coffee-growing elite, by then resident in outlying regions, and along with itcame a core group to bear institutional, administrative and financial functions of the current agro-export model(LEME, 1998). With the growth of the proceeds of coffee-growing activities, industries settled in São Paulo, along the railways and the floodplains of the Tamanduateí River, east of

downtown. In 1920 The Old Downtowncould not hold more densification required by the growth of the economy. Subsequently, metropolitan growth and the unplanned and spread expansion of more peripheral areas of the city demanded the structuring of the road individual collective transport (TOLEDO, 1999). In the history of the city of São Paulo, railways and regional pathways guided the urbanization process, due to the expansion of the original nucleus. The core was structured in the first half of the twentieth century. The following expansions occurred by opening up new fronts of urbanization, with a decentralized characteristic. The urbanization of the metropolis became complex, combining more central verticalizationwith the peripheralization and the more recent development of new and innovative patterns of suburbanization. In contemporary metropolis there is a polycentric structure linked to the establishment of enterprises and new public policies, with technological changes in transport and communications. The city got its metropolitan dimensions in the late twentieth century and the problems with urban traffic exceeded the limits of the metropolis. The population density of the metropolitan urbanized area initially fell and then remained stable or increasing. At the beginning of the twenty first century, the Metropolitan Ring Road now integrates the various access roads, creating a high capacity perimeter expressway, which enables the expansion of metropolitan transport. There is also the modernization of mass transit passenger system, which is ongoing through the expansion and integration of metro and train systems. The urban structure of the city of São Paulohas evolved according to three key dynamicsin these last four decades. The first is the verticalization of most central areas by populations of medium and high incomes. The second is simultaneous to the previous, characterized by the intense peripheralization by low-income population, who precariously incorporated a wide area to the city. The third, in progress, presents new ways of urban structure, with innovative centralities, which are consolidated in business centers, shopping centers, condominiums, and housing estates. This real estate production of São Paulo generates patterns of urban expansion and restructuring of the metropolis. The participation of the municipality of São Paulo's population, the central core of 38 others that make up the metropolis fell throughout the decades, falling from 84.5% in 1940 to 58.5% in 2000; going from 1568 to 17800 inhabitants (IBGE, 2000). The urban stain of the macro metropolis expresses this intense territorial and functional transformation with intimate relation with the transport system. The future requires new proposals for the use and occupation of land and transport that should be devised to improve and optimize urbanization. Systems should be designed to be hierarchized and sized appropriately. The private sector should be guided, avoiding inadequate public policies. The rail system in this scenario should have its right place. Its performance should be within comprehensive and global plans that meet industry needs and the strategic role of transport. An integrated and comprehensive view of the various modals of transport and public policies regarding the use and occupation of land, integrated with social and technical equipment is required.

REFERENCES

[1] ASSOCIAÇÃO NACIONAL DOS TRANSPORTADORES DE PASSAGEIROS SOBRE TRILHOS (ANP Trilhos) Panorama ferroviário nacional. Mobilidade sobre trilhos, 2012. Available on: <http://www.shreditorial.com.br/download/mob_trilhos_2012/05ANPTrilhos%20Panorama%20Ferroviario%20Nacional.pdf> . Accessedon: Nov.05, 2012.

[2] Mobilidade Urbana - A Modernidade dos velhos trilhos. Mobilidade sobre trilhos, 2012. Available on: <http://www.shreditorial.com.br/download/mob_trilhos_2012/06ANPTrilhos%20Mobilidade%20Urbana%20web.pdf> . Accessedon: Nov.05, 2012.

[3] Investimentos anexos Principais projetos metro ferroviários. Available on: <http://www.shreditorial.com.br/download/mob_trilhos_2012>. Accessedon: Oct 29, 2012.

[4] Tarifas - Energia mais em conta para os trilhos. Mobilidade sobre trilhos, 2012.Availableon: <http://www.shreditorial.com.br/download/mob_trilhos_2012/12ANPTrilhos%20Energia.pdf>. Accessedon: Oct 29, 2012.

[5] Mobilidade urbana. Série estudos ferroviários, 2008. Available on: <http://www.shreditorial.com.br/download/ferroviarios_2008/38a54.pdf>. Accessedon: Oct 25, 2012.

[6] A mobilidade na rota dos trilhos. Mobilidade sobre trilhos, 2012. Available on: <http://www.shreditorial.com.br/download/mob_trilhos_2012/04ANPTrilhos%20historico.pdf> .Accessedon: Oct 29, 2012.

[7] Mobilidade urbana ganha visibilidade. Série estudos ferroviários, 2011.Available on: <http://www.shreditorial.com.br/download/ferroviario_2011/032a060%20Mobilid%20Ferroviario%202011x.pdf>. Accessedon: Oct 25, 2012.

[8] História. Panorama da indústria ferroviária nacional, 2009.Available on: <http://www.shreditorial.com.br/download/panorama_2009/TAV_06a17-Historia.pdf>. Accessedon: Oct27, 2012.

[9] LEME, M. C. S. Urbanismo no Brasil 1895-1965. São Paulo: Fupam-Studio Nobel, 1998.

[10] MATOS, Olidon Nogueira. São Paulo no século XIX, pp.49-100, in Associação dos Geógrafos Brasileiros, Seção Regional de São Paulo. A cidade de São Paulo. Estudos de geografia urbana. Volume II: A Evolução Urbana. São Paulo: Companhia Editora Nacional, 1956.

[11] REIS FILHO, N. G. Notas sobre Urbanização Dispersa e Novas Formas de Tecido Urbano. São Paulo: Via das Artes, 2006.

[12] RIGHI, Roberto. Desenho urbano e planejamento de centros urbanos – uma reflexão sobre o caso de São Paulo. Dynamis (Blumenau, SC) v.2 n.33 out/dez 2000, p 29-35.

[13] RIGHI, Roberto; DINIS, Henrique. O automóvel e o desenvolvimento regional metropolitano de São Paulo, Brasil in BALEIRAS, Rui Nuno. Casos de Desenvolvimento Regional. Cascais: Princípia, 2011.

[14] TOLEDO, B. L. Prestes Maia e as Origens do Urbanismo Moderno em São Paulo. São Paulo: ABCP, 1999.