

Manaus Public Port Logistics a Case Study of Boarding and Landing at Passenger Station (ROADWAY)

Dorailson dos Santos Leitão

dorailsonsantos@hotmail.com

Centro Universitário FAMETRO – Brasil

Rafaela Maciel Passos

rafaelapassos250@gmail.com

Centro Universitário FAMETRO – Brasil

Frank Henrique Santos Fontineles

fontineles.fs@gmail.com

Coordenação de Engenharia do Centro Universitário FAMETRO – Brasil

David Barbosa de Alencar

david002870@hotmail.com

Instituto de Tecnologia e Educação Galileo da Amazônia - ITEGAM

Igor Felipe Oliveira Bezerra

Igorfelipe.dss@hotmail.com

Instituto de Tecnologia e Educação Galileo da Amazônia - ITEGAM

Abstract

Logistics for boarding and disembarking at the passenger terminal (roadway) is the organization of all existing operations. This research aimed to analyze and propose improvements in logistics methods in the public port of the city of Manaus – AM that influence the boarding and disembarkation of passengers and goods, taking into account a modern and useful adaptation to the roadway, enabling an efficient handling operation for that meets all who use the port, based on the fact that the movement of passengers must be done safely, and can take into account factors that allow both access to users, as well as goods.

Keywords: Logistics; Boarding and Landing at the Passenger Station (roadway);

1. Introduction

Brazilian ports need rules, laws and systems that enable the development of the port sector. Changes to carry out loading and unloading in a practical way by putting efficient measures, thus bringing solutions through on-site study that reorganizes logistics operations.

Ching (2010) states that the improvement of logistics activities has a positive impact on customers and,

consequently, on sales, such as having efficient transportation, having the minimum levels of inventory needed, taking little time to process orders and offering delivery service. No loss. The use of this logistics philosophy contributes to the functioning of the assembly, as it can react more quickly to changes and customer requests by offering greater reliability and stability in the delivery of the requested goods.

Regardless of the size and type of organization, logistic performance assessment has become an important tool for measuring and analyzing the results of operations, as it provides the manager with information and data that assists decision making, enabling control and improvement in logistics results, corroborating the efficiency of the service offered (SANTOS, 2015).

Today logistics is understood as the integration of both materials management and physical distribution. It requires skillful management, because the level of uncertainty for logistics planning and operation has changes such as transport deregulation, emerging competition from Third World countries in the end goods markets and competition for raw materials, making the scope of logistics broaden by enriching the concepts on which it is based (BALLOU, 2010).

According to the Manaus River Port Master Plan, the port operations in Manaus are quite peculiar due to the fact that the city has no land connections with other states of the country, except Roraima, so that the capital is almost supported. entirely on the waterways for the transportation of cargo and the transportation of passengers to and from other municipalities of Amazonas and neighboring states.

According to the National Waterway Transportation Agency (Antaq), which has been given the competence to regulate, supervise and supervise waterway transport services. Among the agency's duties are:

Propose to the Ministry of Transport the general plan for waterway infrastructure exploration and waterway services;

Develop and edit rules and regulations relating to the provision of transport services and the operation of waterway and port infrastructure;

Promote port tariff reviews and readjustments;

Establish norms and standards to be complied with by port administrations, concessionaires, lessees, authorization holders and port operators;

Supervise the operation and provision of services of long-distance shipping, cabotage, maritime support, port, river and lake support companies.

According to CADE, a port can be analyzed as a system where several units operate interdependently, as well as the port itself can be understood as part of a larger system, the logistics system, where integrates and maintains interdependent relationship with other units, such as: commodity production, exporters and importers, transportation (road, rail and sea), storage, customs, etc.

2. Methodology

This research aims to develop a project with logistics changes in the public port of Manaus (Roadway), the same seeks to implement modifications ranging from signs, structures and demarcation of roads, to facilitate passenger access.

Because there is a demand for users and goods, which circulate in large quantities throughout the annual period, there is a need for improvement. Because it is a heritage site, the correct analysis not to modify the

façade is essential, so this will be the starting point for developing a useful and efficient project.

During the analytical-explanatory study, it was observed that the lack of access road options leaves users with few alternatives, so even minimal interventions are needed to remedy traffic shortages around the waterway complex. As passenger access to vessels suffers from a lack of guidance and low visual signage, thus causing difficulties for people coming from the interior and especially for tourists arriving at the port. Thus, the research constituted a case study of qualitative nature, focusing on data of qualitative nature. The study locus comprised the public port of Manaus (Roadway). The research universe corresponded to the great need of a demand of users that access the port, but suffer for basic orientation needs.

3. Case Study

The case study of the research was developed subjectively, based on aspects of the daily movement of the public port of Manaus, defining from the characteristics of the physical space, the circulation of pedestrians and passengers through the main roads, showing the difficulties within or near the port.

Key points for improvement will be studied in a technical way to associate the conditions that meet the needs of mobility, emphasizing the most relevant aspects, thus facilitating users their journey..

Instrumentals and research techniques

A standard satisfaction survey questionnaire was applied, in which passengers were asked about the difficulties and ease to make boarding and disembarking in the port, thus elaborating a profile of these users.

A direct participant observation was made of the displacement made by the passengers, who followed from arrival at the port to their accommodation inside the boats, and analyzed the difficulties of orientation and access since the purchase of the ticket, its check-in and finally the boarding.

For didactic exposition of the research development process, the project has the following phases of execution:

3.1 Phase I: Exploratory

In this phase, the research project was elaborated, as well as the preparation of materials and instruments for the development of the study, accompanied by bibliographic research and field research, followed by previous contact with the managers of the public port of Manaus, to obtain the institutional authorization to conduct the research in the port.

3.2 Phase II: Fieldwork

This phase consisted of field research, in which the researchers were able to go on site to apply the technical-operational research instruments, which will demonstrate the actual situation of the port, making clear its precariousness and especially its need for improvement. . The study is also not detached from the bibliographic and documentary survey, being fundamental for the theoretical and documentary basis of the research for the elaboration of the course conclusion work.

Regarding the assessment of activities at the public port of Manaus (Roadway), it was observed the daily routine of pedestrians using the passenger terminal, and what are their biggest difficulties, main roads used,

guidance signs, and they are registered for study, as can be seen from Table 01:

Table 01: Evaluation of activities in the public port of Manaus (Roadway)

Data recorded at the port	
Main Access Roads.	Lourenço da Silva Braga Avenue; Eduardo Ribeiro Avenue; Luiz Antony Street; Marques de Santa Cruz Avenue;
Stop and accessibility retreats.	There are two setbacks in place; Permitted use for taxi only;
Entry and exit to access the port.	Only one car access; Only pedestrian access;
Orientation Plates.	On rare and inefficient roads; In the inner area of the port, rare and with low information;

3.3 Phase III: Data Processing and Analysis

In this phase, the data obtained were tabulated by applying the standard satisfaction form, the interview and the documentary records through the participant observations. After this data organization occurred the analysis of the results of the data collected in the field, having as main reference the theoretical reference, which guided the entire research, until its final execution..

4. Research Subject Inclusion And Exclusion Criteria

4.1 Critérios de inclusão

- Resource investments in improvements to port structures,
- Profile of users;
- Parking lots;
- Pedestrian movements to reach the port;
- Conditions and main access routes;
- Goods sector;
- Ticket purchases;
- Check in

4.2 Exclusion Criteria

- Large-scale loading and unloading (Containers);
- Transportation of goods by truck;
- Routine arrival and departure of vessels;
- Rivers and waterways;

5. Problems and Solutions

In this part will be worked the results and discussions about the data obtained from the on-site study, as well as the movement of pedestrians who travel daily in the public port of Manaus. (Roadway).

To understand the performance of these users, it was necessary to present their profile, since their life dynamics are not dissociated from social dynamics in view of the great demand of people who frequent the port, either to go to other municipalities or to use space for tourism.

Resource investments in improvements to port structures suffer from the high tax rates paid by the private sector to the state. In 2011 the federal government took over the port and annulled the lease contracts, removing the existing stores and signposts on site, doing a poorly designed revitalization, leaving some aspects of the internal structure in need for lack of a good design.



Figure 1: Guidance Plates Taken by Federal Revitalization

Source: Author, 2019

From March of last year (2018), the private initiative resumed a new lease of the public port of Manaus, and today it is being managed and supervised by the state government.

Strengths:

Internal environment: good natural navigation conditions in the region, Areas available for port capacity expansion along the shore, Medium high batches in container handling, Physical spaces for stores, local tourism.

External environment: Manaus Free Zone as a load generator, Incentive of cabotage in Brazil; domestic growth perspective, Warehouse facade with good view.

Negative points: Internal environment: structural problems at the public port wharf, restricting it to the operation of heavy loads, Impossibility of installing large capacity fixed cranes at public port quay, Unstructured port authority with few staff; lease agreements with legal problems, as well as lagged port rates, Tipping of the public port quay, making it difficult to modernize.

External environment: lack of regulation in intercity regional navigation, TUPs with potential competition in container handling when compared to the public port, Distant location from major national producing centers, Saturated connection routes between public port and industrial district.

5.1 Parking lots and placeholders for users

The public port of Manaus has three private parking lots, leased to permit holders, who are responsible for maintaining and charging fees.

They are being used in a rotating way, but free for all users who access the center of Manaus, thus not making it restricted to people who use the port, considering the large amount of vehicles that circulate in the historic center.



Figure 2: Parking at the public port of Manaus

Source: Author, 2019.

The maximum vehicle capacity for the three parking lots and 250 alternating spaces in the existing areas between them is a great option for users.

5.2 Main routes for traveling passengers to the port

With population growth, and the warming of the economy in the state, a great demand for vehicles has been circulating in the streets around the port of Manaus in the last ten years. This situation led to a very large flow of cars and trucks moving around the main thoroughfares of the historic center at all times.

Due to the mediation of the modern Manaus fair, the Adolfo Lisboa market and the modern Manaus port (yellow ferry), traffic was severely damaged, causing huge queues and irregular stops.



Figure 3: Av. Lourenço da Silva Braga

Source: Author, 2019.

In early 2019, there was a road recovery which favored the main avenues around the public port of Manaus, improving the circulation of vehicles, as we can see in table 2:

Table 02: Revitalization of streets and avenues around Manaus public port (Roadway)

Avenues and streets	Main interventions
Lourenço da Silva Braga	<ul style="list-style-type: none"> • Full road recovery; • Road demarcation; • Recovery of curbs and sidewalks; • Crosswalks
Marquês de Santa Cruz	<ul style="list-style-type: none"> • Full road recovery; • Road demarcation; • Crosswalks;
Luiz Antony	<ul style="list-style-type: none"> • Partial recovery of the road; • Road demarcation; • Crosswalks;
Eduardo Ribeiro	<ul style="list-style-type: none"> • Full road recovery; • Road demarcation; • Recovery of curbs and sidewalks; • Crosswalks;

As the recovery of roads and parking points, they have undergone some changes, leaving the place with fewer parking spaces thus showing a greater lack of options for users.

The municipal agency has been operating with the mission of trying to inhibit double queues or parking lots incorrectly, but this form of enforcement has put passengers in difficulties of access, causing bigger problems, and what would be a solution around the activities of the public agency. fines the population.



Figure 4: Double Landing

Source: Author, 2019.

5.3 Viable solutions for Manaus public port (Roadway)

Among the main solutions to remedy shortages to reach the port, is the access by the avenue Marquês de Santa Cruz. The perimeter that can connect this route to the port would give more fluidity to the vehicles, besides facilitating the users who come today by this route and cannot enter the port, leaving the avenue somewhat cloistered, since in order to be able to access the direct way.

This perimeter has around 60 meters and is currently being used by parking, and this route was already used as access until 2015. As a solution would be used only for small car respecting road demarcation, giving preferential to Av. Lourenço da Silva Braga as we demonstrated in the following project.



Figure 5: Road project, with alteration in Avenida Marquês de Santa Cruz

Source: Author, 2019.

This intervention will make it easier for users who are destined for the inner part of the port, making it a great flow option for passengers, who today suffer from having only Lourenço da Silva Braga Av.

6. Conclusion

Having a historic port is a privilege for few states, the public port of Manaus (Roadway), is the gateway to the Amazonian capital, it is part of the history of the capital, and has a direct influence on the state economy. Because it is a historic heritage site, its modernization became unviable, which left the port with several problems not only structural but also administrative.

With the resumption of the port in 2011, the federal government left many failures in structural revitalization, one of the main changes was the removal of the original floor of the main warehouse, disregarding the historical pattern of construction.

The main river and tourist routes are directed to the port, giving it credibility to be one of the most important in the country. This large demand from users who embark and disembark at the waterway terminal is hampered, by few alternatives, with regard to the routes that allow access, as well as mandatory guidance signs on both near and inland. Solutions that are not being carried out by the private initiative that resumed

the lease agreements in early 2018, with the responsibility of improvements.

Among the points of relevance, the port has a physical structure that give its users amenities, and security. It has employees who work from the loading of luggage, information, stopping of boats on the floating ferry and guidance on the mooring of vessels. But it is clear that there is a degree of unpreparedness of some of these professionals, who end up treating people with lack of education, leaving a bad impression to the port administration.

The interventions in the port-related avenue traffic reported in the project will give users a great choice for passengers using vehicles to travel to their boats faster. Since users coming to the port for the first time thus have more options on the route thus avoiding delays, or even leaving the vessel.

The analysis thus developed presents the limits and possibilities of the practice not only of the use of the port for the region, but mainly in tourism in the face of reality in a context that unifies, in its possibilities, almost all sectors of the economy, making it more complex and arduous, also allowing for a broader, more complete and lasting work, thus having, in the capitalist context in which it operates, the contradiction in itself.

The objectives proposed by the research consider that it is the state's responsibility to technically monitor and support administrative activities regarding the provision of services offered to passengers, seeking to comply with the direct responsibility of the port.

Thus, the state's responsibility for social policy to break ineffective actions stands out, and it is essential that passengers know their rights, leading them to many challenges in order to break with the actions that lead to the basic problems of the economy. port to a solution.

As for the demands presented as direct alternatives for change, there was a need to take actions that give passengers the easiness to travel with greater security..

Regarding the responses of the interviewed passengers, they realized that there was a consonance, all referred to the need for improvements in the physical space, on the roads and especially in information, thus leading to believe in the existing difficulties, but which should be solved by the proposal presented..

Given the objectives achieved with the research was essential to ensure that many people who use the port throughout the year, is received in the best possible way. We believe that this has led to a better assessment of the waterway terminal, and that alternatives to using the port as the main tourism tool will give users convenience.

7. Bibliographic References

- Agência Nacional Transporte Aquaviário (ANTAQ). ESTUDO DE MACROLOCALIZAÇÃO DE TERMINAIS HIDROVIÁRIOS NO BRASIL. Plano Nacional de Integração Hidroviária. Disponível em: <<http://www.antaq.gov.br/Portal/PNIH/PropostaMacrolocalizacaoTerminais2.pdf>> Acesso em: 22 jan. 2015
- ILOS-Instituto de Logística e Supply Chain. Custos Logísticos no Brasil - 2014 – Disponível em: <http://www.ilos.com.br/ilos_2014/wp-content/uploads/PANORAMAS/PANORAMA_brochura_custos.pdf> Acesso em: 20 jun. 2019
- BALLOU, R. H. Logística Empresarial, Transportes, Administração de Materiais, Distribuição Física. São Paulo: 1ª Ed. Atlas, 2010.

CHING, Hong Yuh. *Gestão de estoques na cadeia de logística integrada: supply chain*. 4. ed. São Paulo: Atlas, 2010. 238 p

ARAÚJO, Paulo César Diniz de et al. Indicadores de desempenho em operações, logística e cadeia de suprimentos numa multinacional do polo industrial de Manaus. In: *Gestão e Sociedade*, Belo Horizonte, v. 7, n. 18, p.327-342, dez. 2013.

SANTOS, Erica Moreira dos. Análise da efetividade da avaliação de desempenho logístico: estudo de caso numa loja virtual de vestuário. In: *ENEGEP*, 2015, Fortaleza. Enegep, 2015. p. 0 - 16.