
타 부두 환적 화물의 시간 및 비용절감 방안

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Time and Cost-saving of Inter-Terminal Transportation

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요 약

한국 정부는 부산신항을 세계 2위의 환적중심 항만으로 육성하기 위한 정책 목표를 수립하고 있다. 본 논문은 이와 같은 정책 목표 달성의 한 가지 방법으로 타부두 환적의 효율적인 교통 시스템 제시를 목적으로 한다 이를 위해 각 터미널 간 타부두 환적화물에 대한 네가지 시스템을 제안한다.; Double stack Multiple Trailer System(DMTS), 철도 기반 교통 시스템, 타부두 환적 화물에 대한 전용 도로 및 플랫폼. 이는 효율적인 타부두 환적 화물의 처리를 가능하게 하여 시간 및 비용을 절감할 방안을 제시할 것으로 생각 된다.

ABSTRACT

The Korean government establishes a strategy to develop the Busan New Port as a world ranking two transit-oriented port. This paper aims at presenting an efficient Inter-Terminal Transportation system in the Busan New Port as a method of achieving the government strategy. It proposes four systems to treat Inter-Terminal Transportation in the port; Double stack Multiple Trailer System (DMTS) Rail-based transportation system, Private road for Inter-Terminal Transportation, and platform for Inter-Terminal Transportation. This is shown to highly potential for efficient Inter-Terminal Transportation in the port

Keywords: Transshipment other docks, Platform, Private road.

1. Introduction

East Asia is a region in maritime transport has the advantage that the position between Europe and the Americas, all of the world's top 10 container ports are located in the region. Among them, Shanghai Port is the port that writes the latest container handling volume 1 above. But this record is the quality of logistics facilities and services that have to be in accordance with the terms shanghai import and export volume growth in mainland China means that it is difficult to see the largest port in the world. Logistics facilities and quality of

service with the port itself may be judging by the volume of the transshipment port. Because it is determined by the competitiveness of transit transport facilities and services with this. In the case of Singapore Port (Port of singapore Authority, PSA) recently transshipment container traffic, but traffic is second place occupies the first place. Busan transshipment traffic is traffic up 6 occupies the second place. Busan port container traffic in February recorded a 13.7% year-on-year increase of 1515230 TEU. YoY growth was 25.4%. This is the highest ever monthly transshipment cargo volume hit. Transshipment cargo. As a way to

change the cargo aboard the ship to the final destination in another country. Busan cargo, high added value that can earn significantly compared to the general cargo is utilized as one of the indicators of the international competitiveness of the port. Therefore there is a need to strengthen the competitiveness of the Busan pier. Consider other transit efficiency improvements. Other Pier in the case of a transshipment terminal at the terminal during arrival and departure of different transit, transshipment is to be contrasted with the concept of transshipment jetty party. For a while the other party a pier transshipment transshipment jetty capable of handling relatively efficient transshipment as if you are experiencing this ipchulhang transshipment between ships on the same terminal on land transfer (Movement) that occurs as a transshipment added. In reality, however, minimize the Port Terminal pier transshipment and other transit systems of the parties to pursue a transshipment center pier, the occurrence of other transshipment jetty is inevitable because of various practical reasons. Looking at the three other types of quay transit arising from the Busan New detail. A prehistoric flying is all the a terminal and b terminal. At the time of access to the pier ship scheduled to call at a two berth in a terminal it is occupied both by other vessels if it is difficult to berth now A variety is unloaded planned container in a to berth the ship near the terminal, b Terminal You can unload the Hanjin terminal. Otherwise, if the vessel is encountered in degradation of quality of service costs are incurred and the terminal according to the delay of the vessel when waiting until there is room in the quay of a. A container cargo is transferred back to the B via a land transport. The second type, the ship's B brings you flying to c of the North Pier are mainly flights to Europe route, the ship's B brings you flying to d of the south jetty were mainly assuming flights to US routes, to flying to the c Ships of the US European routes, the container can be carried some traveling, anti-European line container ships flying the d may be part of a mix. In such cases, the transshipment other pier over the land between the rows - Americas leading container in Europe are c and d. Finally, when the feeder private dock operations, feedline is a container that is deep-sea transport from ports in the domestic coastal ports and nearby East Asia

pickup by the transfer to the ship being transported by ocean-going shipping of each terminal. In this case the feeder private pier and individual terminals have the relationship of the 'Hub-Spoke'. Important factors that improve the competitiveness of the pier to improve the efficiency of transit in the face of inevitable various types of other docks transshipment like this one.

II. Volume prediction

Busan port container traffic has recorded a steady growth every year, in 2011, to handle only 1.61 million TEU (Twenty-feetEquivalent Unit) were sited in the world 5. In 2011, Busan New Port Terminal Four from the inside (Hanjin, PNC, Hyundai, BNCT) are operating in earnest as compared to 2010 increased by 13.7% had the highest growth rate among the top five ports. Apart from the existing Busan North Port Busan New Port it opened in 2006 at the time of Busan container traffic market share was 2%. Since the New Port is rapidly increasing share of 47.9% reached in 2011, in 2012, it became North Port handled a lot more volume over the first 50%, as of May 2015, 65.5% were treated with total processing volume in Busan. Such as Busan and is showing continued growth, among which transshipment cargo showed a ratio of over 50% for the first time in 2014.

Table 1 Forecast of container volume in Busan Port

Years	Total Volume	Container volume	
	(x1000RT)	(x1000RT)	(x1000TEU)
2010	262,072	236,636	14,194
2020	416,721	376,954	22,354
2030	629,382	584,628	34,630

III. System alternatives for Inter-Terminal Transportation

The proposed four kinds of alternatives to the system. Double stack Multiple Trailer System (DMTS) Rail-based transportation system, Private road for Inter-Terminal Transportation, and platform for Inter-Terminal Transportation.

3.1 Double stack Multiple Trailer System (DMTS)

The first alternative is not a container system for transporting tractors and trailers used in conventional (Single Truck), it is how to use the Double stack Multiple Trailer System. The alternative is DMTS will connect the loaded trailer 40FT container for transshipment to the second floor in a multi-volume processing that occurs within the harbor. This is a method of treatment using the new land trailers system to transfer at the same time for more than four boxes. It DMTS the current 'Single Truck' Development of operation and control section to indicate that the operation performance is comparable to the system there is a need to be some combination

3.2 Rail-based Transportation System

The second system alternative to the Rail-based System, which between the railway vehicle combination is already in a container wagons and a dedicated locomotive in a way that uses the infrastructure of the harbor inlet rail is installed on the Busan New Port Control Center and the terminal and the terminal via wireless communication a system that automatically takes into account the shuttle. Rail-based System has the advantage that can be so automatically operates between the terminal and the terminal to load and 40FT container not only to reduce the operating costs of multiple feed rapidly. On the other hand must be occupied by the terminal and inside the grounds, Crawler system stops to the station yard and an additional transfer between the terminal block has the disadvantage that occurs at the same time..

3.3 Private Road for Inter-Terminal Transportation System

A third alternative is to use a system Private Road. Each terminal of the Busan New Port is adjacent to each other. Therefore, if using the inside of the Cargo Transshipment other than the external road lanes it will be reduced to the docks to increase transport efficiency of the transportation time. The private road transport using the internal security problems of the container, but it will be resolved if you install the gate for the movement of transit cargo between adjacent terminals. And there are problems such as increased risk of accidents due to increased traffic within the terminal.

3.4 Platform for Inter-Terminal Transportation.

Transshipment cargo handling services for other pier of Busan are currently being made, as shown in the following figure 1.

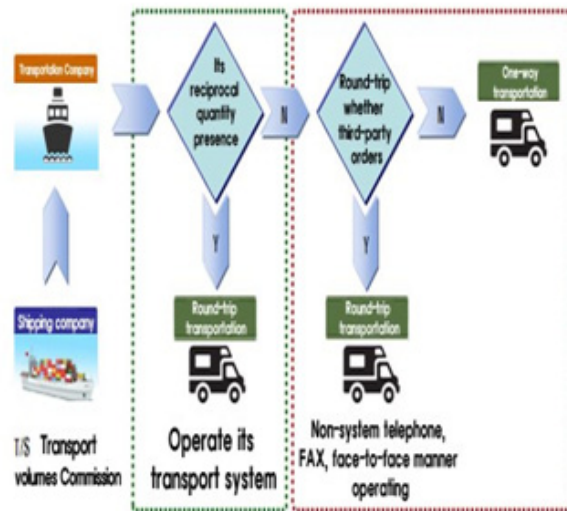


Figure 1 . Inter-Terminal Transportation treatment process of the Busan Port

Due to such low efficiency of the treatment process Inter-Terminal Transportation of Busan, so it is necessary to introduce the platform. Platform is need T / S containers matching system, vehicle dispatching system, COPINO management, the order management of the vehicle and etc.

IV. Conclusion

This paper presents a plan to efficiently handle other transshipment jetty as part of Competitiveness Improvement of Busan New Port. Busan New Port's transshipment efficiently processed to other docks for Double stack Multiple Trailer System (DMTS) Rail-based transportation system, Private road for Inter-Terminal Transportation, and platform for Inter-Terminal Transportation were presenting. Through this, we can expect the Time and Cost-saving of the Inter-Terminal Transportation. However, there remains a number of challenges to methods presented in this paper is applied to the reality. In fact, in order to introduce more research is likely needed.

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