

# Optimization of Air Imports Consolidation: An Empirical Study at Panalpina Bangalore (PB)

Suryanarayana<sup>1</sup> and G. Srinivasa Raju<sup>2</sup>

<sup>1</sup>Department of Business Management, Osmania University, HYDERABAD-500 007 (Telangana), India

<sup>2</sup>Mantra School of Business Management, Hyderabad

E-mail: <sup>1</sup>professorsuryanarayana@gmail.com

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**Abstract**—Providing for tailor-made solutions to customer's demands in this dynamic market, with passion for solutions, Panalpina Bangalore (PB) is one of the major air freight forwarder business units in India, with expertise in both air and ocean freight forwarding, catering to the industry verticals like healthcare, automotives, chemicals, fashion, manufacturing, Hi-tech, and telecom industries to a large extent. As an air import port-pair, executing 3973.605 tonnes from 143 different origins spread across the world and serving 67 different consignees in Bangalore, PB administered 18,566 shipments in the year 2013 starting from January to December. Despite certain limitations in the study, this Paper gives an insight to stir up discussions with the business units of PB around the world to reduce on the costs, the turnaround time of the cargos and increase the customer satisfaction in the multi commodity flow of cargos with a mix of high and low density items. This would also help in reducing the CO2 emissions and save on fuel through operational efficiency, which PB is dedicated for.

## 1. INTRODUCTION

Panalpina India is serving the logistics needs of its clients since 1986 and offering solutions that include air and ocean freight, warehousing, logistics, Panprojects, and Oil & Gas. Panalpina has a network of 14 offices across India with a workforce of plus 230 employees. Their headquarters are located in Gurgaon and has offices in Ahmedabad, Bangalore, Baroda, Chennai, Coimbatore, Hyderabad, Cochin, Kolkata, Mumbai, Pune, Tirupur, Tuticorin and Visakhapatnam. **Panalpina Bangalore (PB)** is one of the major air freight forwarding business unit in India for Panalpina established around 15 years ago in 1999 and the services offered include - air freight forwarding, ocean freight forwarding and logistics services.

## 2. PURPOSE AND NEED FOR THE STUDY

The main purpose behind this study is to help PB to optimize on the air import consolidation and the back-to-back shipments between each top 10 port-pair and convey various alternative solutions to the Panalpina origin on improving the business by satisfying customer needs as well as increasing the potential gross profit. This would help in identifying the

revenue leakage areas associated with the international freight forwarders.

## 3. OBJECTIVES OF THE STUDY

(i) to understand the air freight forwarding procedures and practices, (ii) to understand the concept of consolidation of the cargos, (iii) to identify the top 10 origin ports for air imports at PB, on the basis of the chargeable weight executed in 2013, (iv) to identify the peak months for the shipments from the top 10 origin ports, (v) to calculate the percentage of back-to-back shipments from these ports and analyze the reasons for the same if the percentage were higher than 30% of the total shipments executed in 2013, (vi) to recommend alternative solutions for optimizing the business between the port-pairs

## 4. LIMITATIONS OF THE STUDY

This study is limited with the observation of the operations, interaction with the employees and analysis in PB. The duration of the study in the business unit has been 2 months. The data used is a secondary data obtained from the internal database of the company and the time span for the data is from January 2013 till December 2013

## 5. METHODOLOGY

With a view to identify the top 10 origin ports for air imports in PB, on the basis of the chargeable weight executed in 2013 and the peak months for the shipments from the top 10 origin ports, to calculate the percentage of back-to-back shipments from these ports and analyze the reasons for the same if the percentage were higher than 30% of the total shipments executed in 2013, and, to recommend alternative solutions for optimizing the business between the top 10 port-pairs with the limitation of the study being 2 months and by using secondary data obtained from the internal database of the company from January 2013 to December 2013, we implemented the concept of forming a pivot table, with basic mathematical formulae, for the analysis in Microsoft Excel 2007. The data regarding

the Airlines, MAWB Numbers, HAWB Numbers, Incoterms, Consignees, Departure Airports, Final Destination, Pickup Dates, ETAs, ETDs, Actual Weight, Chargeable Weight and Number of Pieces were generated via the internal database of the company. A record of 18,566 HAWBs, 3973.605 ton shipments, from 143 different departure airports, shipped through various airlines, destined to 67 different consignees at Bangalore, in the year 2013 from January to December, indicated wide variations in the type of shipments between each top 10 port-pair.

Having generated a pivot table with the Departure Airports, MAWBs, HAWBs and the Chargeable Weight, from January to December 2013, and then arranging the Departure Airports in descending order of the sum of Chargeable Weight, we found that: (SIN) Singapore-Malaysia, (PVG) Pudong-China, (NUE) Nuremberg-Germany, (ORD) Chicago-US, (JFK) John F Kennedy-Newyork, (HKG) Hongkong-China, (MNL) Manila-Philippines, (ICN) Incheon-South Korea, (BKK) Bangkok-Thailand, and (MEL) Melbourne-Australia were the top 10 Departure airports for PB. To calculate the percentage of back-to-back shipments that could be consolidated from the total B2B shipments made between each top 10 port-pair in the year 2013, using the formula. It was found that: (i) by eliminating single shipments in a day, the nature of the cargo, the identity of the shipper and different airlines on the same day from the same origin, but taking into account back-to-back shipments having less than 500 kgs in the same airline and on the same day from a particular origin, we found that a total of 50.9413 ton back-to-back shipments could be consolidated from the top 10 departure airports, in the year 2013. From (NUE) Nuremberg-Germany to Bangalore the nature of the cargo shipped included chemicals and dangerous goods destined to a single consignee in Bangalore. Since, Dangerous Goods cannot be consolidated with one another because of their reactive, explosive, radioactive and oxidizing nature, there were no B2B shipments that could have come as consols from NUE in the year 2013. From (MEL) Melbourne-Australia, the percentage of B2B shipments that could have come as consols was the least among the top 10 departure airports. 3.26% of the B2B shipments could be consolidated having a tonnage of 400kgs. Maximum of the shipments were forwarded on different airlines on the same day, destined to the same consignee at Bangalore. There were possibilities of converting certain back-to-back shipments into consolidations as many times the back-to-back shipments departed together with the consols on the same flight, on the same day, having a chargeable weight less than 500kgs. With a total of 33 consol shipments, there were 92 back-to-back shipments from January 2013 to December 2013 from MEL to BLR. Identifying the peak months of the shipments of the cargos from MEL, we found out that February, July and December months were having the highest number of shipments based on the chargeable weight. And these months also had more number of back-to-back shipments forwarded to Bangalore from MEL. From (BKK) Bangkok-Thailand, 8.15% of B2B

shipments could have come as consols from the total number of B2B shipments executed from BKK to BLR, with a tonnage of 876.5kgs. Maximum of the shipments were forwarded on different airlines on the same day, destined to various consignees at Bangalore. There were possibilities of converting certain back-to-back shipments into consolidations as many times the back-to-back shipments departed together with the consols on the same flight, on the same day, having a chargeable weight less than 500kgs. There were certain cases where a single back-to-back shipment departed on a particular day having a chargeable weight less than 500kgs, where there was a consolidation flying the next day destined to the same consignee. With proper coordination among the consolidators at the departure airport, a single back-to-back shipment on a particular day could be avoided by reducing on the charges related to customs clearance, filling, loading, etc. With a total of 101 consol shipments, there were 135 back-to-back shipments from January 2013 to December 2013 from BKK to BLR.

This Paper identifies the top 10 origin ports for PB, for air imports, from across the globe, ranked in terms of the chargeable weight executed by them in 2013. This would further assist in optimizing the business between each top 10 port-pair by identifying the potential back-to-back shipments that could be converted to consolidation shipments and help increase the potential profit and reduce the effort for shipping the cargo back-to-back. With the study done for 2013's air import shipment data for PB, we found that the percentage of back-to-back shipments executed were between 40% and 90% of the total shipments in 9 out of top 10 origin ports. Out of which the percentage of back-to-back shipments that could be converted to consols ranged from 2% to 60% of the total back-to-back shipments. There were more than one airlines flying from the same origin to PB in a single day carrying both consols and back-to-back shipments for different consignees serviced by PB. And also, in one airline, on the same day, there were both consols and back-to-back shipments in which the back-to-back shipments had chargeable weight less than 500kgs. These back-to-back shipments having less than 500kgs could be converted to consols depending on the nature and type of cargo as the price charged for higher weight shipments would be less as per the rate slabs specified by the airlines and the profit margin generated would be more by PB per shipment. The consolidation of the shipments is done at PB level, in the origin and the space booking with the airlines is done 2-3 days prior to the departure of the airline. Sometimes due to last minute arrival of shipments and the urgency of the shipments, the cargos are pushed as back-to-back on the same airline on the same day, which is shipped at a premium price, at the cost of the shipper. The e-commerce portal, ICES, has helped to reduce the number of stages in customs clearance where the e-filling of the imported/exported cargo prior to the shipment to the consignees can be made effectively. With various charge components involved in freight forwarding, it is essential to have a transparency in

communicating the charges to the customers, as it highly depends on the bargaining power of the forwarder to negotiate the prices between the buyer and the seller and charge accordingly. As per the study, we also found that from certain origins, during the peak seasons, the number of back-to-back shipments were higher than in non-peak seasons. Thus for the recommendations regarding the conversion of back-to-back shipments to consolidation from each origin port, we would recommend that since the consols are closed once the cut-offs with respect to the weight are achieved in a particular airline, so during the peak seasons, the cut-off could be increased so as to reduce the number of customs filing and the cost associated per airline. Since sometimes the cargo show-up rate is less than the orders received, space on the airlines is left unused. Thus it is an efficient practise to ensure timely receives of the cargos at the warehouse, after timely pickup and customs clearance. If the cargos are non DG cargos then proper capacity management needs to be done before closing the consol and forwarding for the customs clearance since the consols are made on FCFS basis. As per the DG clauses, if the cargos can be consolidated with the non-DG cargos or if two or more DG cargos can be consolidated in the same airline, then proper communication with the consolidating authorities is essential. This can be done by integrating with a system that would identify the cargos on other nearby routes and build consols after proper examination.

## 6. RECOMMENDATIONS

In order to assist in optimizing on the business between each top 10 port-pair by identifying the potential back-to-back shipments that could be converted to consolidation shipments and help in increase the potential profit and reduce the effort for shipping the cargo back-to-back, the recommendations and suggestions are as follows : The back-to-back shipments having less than 500kgs could be converted to consols depending on the nature and type of cargo as the price charged for higher weight shipments would be less as per the rate slabs specified by the airlines and the margin generated would be more by PB per shipment. Since the consols are closed once

the cut-offs with respect to the weight are achieved in a particular airline, so during the peak seasons, the cut-off could be increased so as to reduce the number of customs filing and the cost associated per airline. As sometimes the cargo show-up rate is less than the orders received, space on the airlines is left unused. Thus it is an efficient practise to ensure timely receives of the cargos at the warehouse after timely pickup and customs clearance from the shippers. If the cargos are non DG cargos then proper capacity management needs to be done before closing the consol and forwarding for the customs clearance since the consols are made on FCFS basis. As per the DG clauses, if the cargos can be consolidated with the non-DG cargos or if two or more DG cargos can be consolidated in the same airline, then proper communication with the consolidating authorities is essential. This can be done by integrating with a system that would identify the cargos on other nearby routes and build consols after proper examination. The Panalpina Origin business unit can also stir up discussions with the shippers in order to not ship the cargos as flash shipments by paying premium charges. If the shipment is an urgent shipment, then the consolidators can optimize by quoting the ad-hoc rates expeditiously. If the shipper has still agreed to pay premium charges for flash shipments, then with proper negotiations and identifying and communicating their additional expenses, the business can be optimized in future. Young talent can also be recruited in order to get fresh perspective for consolidations.

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