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Analysis of the Cargo Flight Time Slot Mechanism for Supply Chain Flow Adjustments in Minimizing Waiting Waste Warehousing at the Soekarno Hatta International Airport Cargo Terminal

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ABSTRACT

The use of air transportation services plays an important role in helping the community mobilization process to link areas separated by waters. As the CSC Garuda Indonesia cargo terminal, Soekarno-Hatta International Airport Tangerang experienced a surge in air cargo delivery, apart from the surge in the frequency of delivery, there were obstacles in scheduling time slots that were not available, causing cargo loads to accumulate and there was a waste on activities in the warehouse called as waiting for waste warehous-ing. This study aimed to determine the mechanism of time slots in cargo flights and the relationship to waiting for waste cases and find out the stag-es of activity in the warehouse. This study used qualitative methods includ-ing interview, observation, and documentation techniques. The result of this study is that the time slot mechanism or scheduling of cargo flights is disrupted by the existence of a system that is still manual and in the trial period. Therefore, it has an impact on cargo loads that cannot be processed and sent by air. Moreover, there is an inadequate quality of human re-sources and working tools both in the loading and unloading processes, which dominantly occurs in warehouse activities which include outgoing cargo and incoming cargo. To improve touch points in air cargo services while still prioritizing and on-time performance, both the staffs and compa-nies launch the TERKA application which is used for online registration and to access all information related to cargo flight schedules.

Keywords: Slot time, overload (waiting waste), cargo flight schedules

Introduction

The soaring distribution of cargo service services in each period causes problems regarding adjustments to the slots of the flight schedule (cargo flights) and there are delays in the process of loading and unloading cargo in the warehouse known as waiting for waste warehousing, a situation where there is a queue of cargo that should not occur, causing overload in certain activities in the warehouse (Badan Pusat Statistik, 2021).

Regarding waiting waste, at the cargo terminal of Soekarno-Hatta International Airport, there was a queue caused by the accumulation of goods or overload both in the outgoing process and in the incoming process on the apron. The influence in the process triggers a very long loading and unloading process, the lack of socialization of SOPs causes the supply chain flow to be uncontrollable and unorganized. Based on the explanation above, the author is interested in researching the Mechanism of Cargo Flight Time slots toward Supply Chain Adjustments in Minimizing Waiting Waste Warehousing at the Cargo Terminal of Soekarno-Hatta International Airport Tangerang Case Study CSC (Cargo Service Center) Garuda Indonesia CGK.

Definition of analysis

An activity used to find patterns or ways of thinking related to the existence of systematic testing of something that serves to determine parts, relationships between parts, and

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relationships with all aspects. The analysis serves to decompose something into small components so that its relationships are understandable, and then the description of those components can be understood as a whole. The analysis aims to provide a more detailed understanding of something and its understanding can be explained to the public so that the public can easily access and receive useful understanding (Sugiyono, 2017).

Definition of time slot

Time Slot is a flight schedule or flight time allocation at the airport, including arrival and departure times which are allocated directly by AFTM (Air Traffic Flow Management) (Direktorat Jenderal Perhubungan Udara Kementerian Perhubungan, 2018). AFTM Managed by PT Angkasa Pura at the relevant airport, serves as a regulator of aircraft movement at a predetermined time or date (PT Angkasa Pura II, 2021).

Coordinator slot authority

The Role of Coordinator monitors the slot, warns if there is a discrepancy asks for corrective action, and records the abuse that occurs in the time slot (IATA, 2019; Decree of the Minister of Transportation KM No. 47 of 2002 Concerning Airport Operations Certification).

Definition of airport

According to Annex 14 Airport is an area or area either on land or on water that includes a building along with installations and equipment devoted to the arrival, departure, and movement of aircraft. Meanwhile, according to the Directorate General of Airport Transportation, it is an area on land and in waters that has certain regional boundaries that function as a place to land and take off aircraft, transport passengers, transport cargo or goods, and transfer modes of transportation equipped with safety, comfort and security facilities for an airline, as well as various other supporting facilities (Hadi, 2000; Minister of Transportation Decree No. 36 of 1993 concerning Airport Criteria and Classification).

Definition of air cargo

Air Cargo is all goods transported or to be transported by aircraft and transmitted on the basis of air cargo delivery records using an Air Cargo Letter (Airway Bill) but excluding postal papers, or other goods contained in international postal convention agreements and baggage carried by passengers whose amount is included in the ticket or check baggage (IATA, 2019).

Overload (Waiting waste)

Toyota production system: Beyond large scale, production classifies waste into several types (Ohno & Bodek, 2019):

a. Waste of Waiting can be interpreted as a waste of a production process that causes too long waiting time
b. Waste of Overproduction, the creation of products more than in demand (belongs to the category of waste)
c. Waste of Over Processing, the process is carried out beyond the customer's wishes
d. Waste of Defect, the occurrence of rejection or repair in the product
e. Waste of Stocking, the more stock the more waste (unproductive, the administrative burden of management, workload, expired or damaged goods).

Warehousing

The warehouse or warehousing department is the most important part of storing and managing goods including raw materials, parts, and semi-finished or fully finished goods. Stated that not only storing goods, but the warehousing department is also responsible for information

in the form of status, condition of goods, and positions of goods stored or in the process of being shipped (Martono, 2018).

Material and Methods

Research methods are scientific methods used to obtain data with certain goals and use, to be able to achieve this goal, relevant methods are needed to achieve the goals to be achieved. So that the research method used in this study is qualitative with a descriptive type of research. Suggests that qualitative methods are used to obtain data and detailed information about problems or cases to be solved. The form of descriptive research applied in this study is with a case study approach and with data collection methods, namely observation, interviews, and documentation (Sugiyono, 2018).

Results and Discussion

Slot time mechanism

According to the PIC, CSC Garuda Indonesia revealed that the time slot on cargo flights is still in one unit with the schedule of commercial flights or passenger carriers, generally Procedures for Managing the Allocation of Availability of Flying Time (Slot Time) Airports that time slots are managed for planning a flight (Direktorat Jenderal Perhubungan Udara Kementerian Perhubungan, 2017).

Related to flight cargo schedules, goods or cargo sent consist of direct flights or transit flights (transit shipment). To secure cargo and flight shipments under the scheduled time (on time), you must pay attention to the Minimum Connecting Time (MCT) (PT Angkasa Pura II, 2021). The following researchers attached the provisions of the GA airline MCT:

a. MCT from Narrow Body aircraft to Narrow Body aircraft is 4 hours
b. MCT from Wide Body aircraft to Wide Body aircraft is 3 hours
c. MCT from Narrow Body aircraft to Wide Body aircraft is 4 hours
d. MCT from Wide Body aircraft to Narrow Body aircraft is 4 hours

Warehousing staff's efforts in minimizing the risk of waiting waste (Overload) queues

The cause of occurrence of waiting or overload is caused by several factors, both externally and internally in a company. Two locations are dominant in the cause of waiting for waste (overload) including in the Apron section or incoming & outgoing activities, here is an appendix to the table containing the causes and results of coordination with related divisions, researchers found several solutions or solutions to minimize the occurrence of such cases (Garuda Indonesia Operational Manual Number 7.2.7 Regarding Flight Attendant Duty Period Limitation and Rest Requirement; Garuda Indonesia Operational Manual Number 5.4.2 Regarding Flight Crewmembers; Garuda Indonesia Operational Manual number 3.3.2.4 regarding the responsibilities of the crew movement control unit).

Table 1. Constraints and solutions to overload

Activity	Cases	Solution
Outgoing, and incoming activities	a. The process of loading and unloading from trucks and weighing loads takes a long time. b. In the outgoing section of CSC GA, there is an extra job desk or one person can concurrently participate in other tasks. For example, an admin can also concurrently go to	a. In points A and B, there is the same problem, namely the problem with its human resources. So the solution is to add superior human resources so that it is expected to avoid overload and extra job desks
To continued….		

	the porter, packing, and cashier sections. So it is less conducive and organized. c. Goods are included in the category of dangerous goods but are not equipped with the required documents, causing stalling in the regulated agent section and the goods are late in flying. This condition is caused because the sender of the goods is not honest with the cargo officer regarding the contents of the type of goods.	and can shorten the time (on-time performance). b. Tightening cross-checks in more detail from the initial process (PTI filling). c. Officers were urged to inquire about the contents of the seized charges. If suspicion is found in it, the item will be re-checked (with the permission of the owner of the item). If it is true that there is a dangerous item without the prerequisite documents, then the officer has the right to refuse the delivery.
Apron activity	. There is a minimum time given by the officer for loading & unloading goods. So that within a limited period, it is required to be able to complete at a predetermined time. If there is a delay, it will affect the departure of passengers and cause delays. Dolley Limited	Improved coordination between officers on the apron and officers, as it avoided transporting cargo to the compartment at the last minute. Thus, if coordination is carried out, it minimizes delays in the loading & unloading process.

Stages in incoming and outgoing activities

Incoming activity

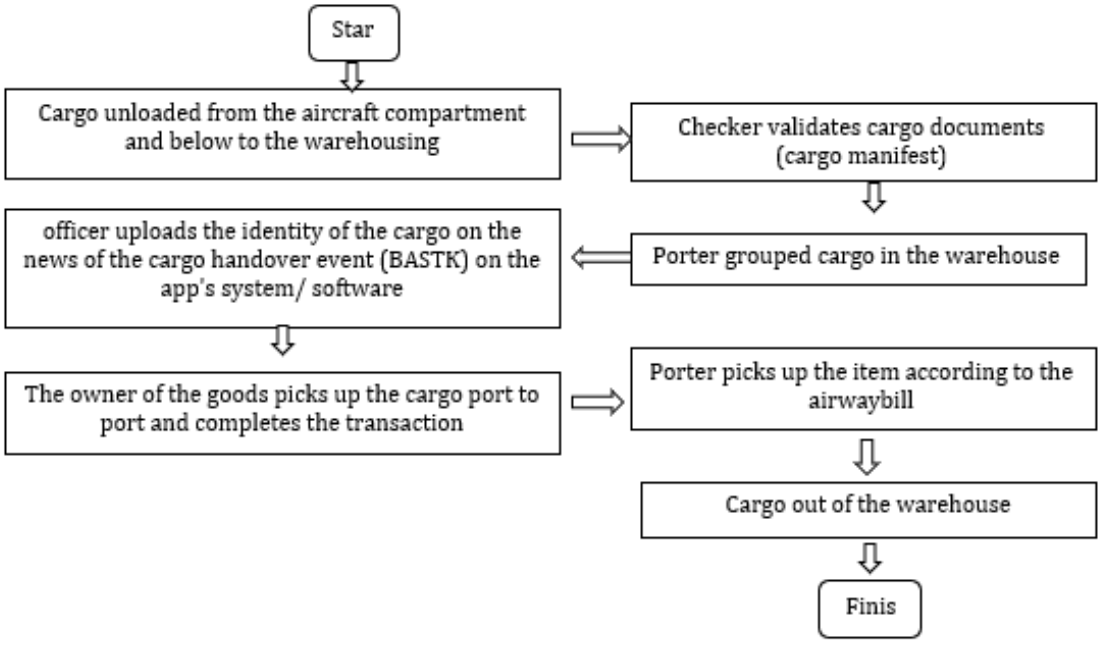

Figure 1. Incoming cargo flow

Outgoing activities

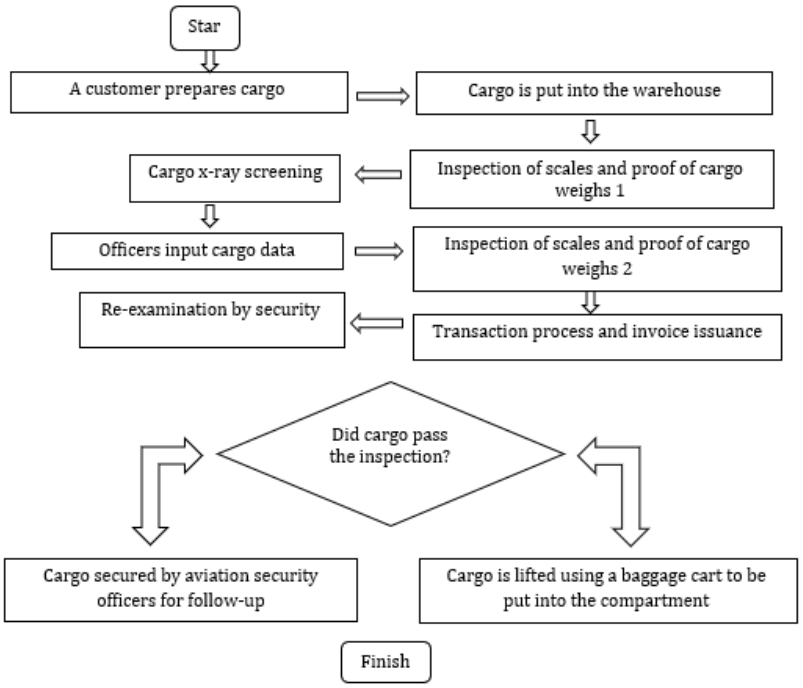

Figure 2. Outgoing cargo flow

Conclusion

The time slot mechanism on cargo flights is generally integral to the commercial flight slot schedule so that it has been coordinated with each airline carrying the cargo and guided by an air navigation officer (Air Traffic Controller). The specificity of the time slot is carried out if the flight uses a special cargo aircraft or is called a freighter (cargo charter). The effort of warehousing staff in minimizing the risk of waiting for waste (overload) queues is to educate customers that they must comply with established procedures for the smooth process of checking cargo. In addition, the lack of human resources or operators in managing the cargo loading and unloading process, so that cargo loads that amount to tons are not comparable to their human resources, therefore it causes overload both from the loading and unloading processes.

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