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Handling of Incoming Cargo to Support Smooth Goods Delivery: A Review of Four Aspects

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Abstract

Purpose: The purpose of this article is to analyze incoming cargo handling procedures in supporting smooth cargo delivery services by reviewing four aspects, namely infrastructure, workforce, work procedures, and activity implementation at airline cargo operations.
Research Methodology: The research method used in this research is descriptive qualitative with observation in object from four aspects: means infrastructure, power work, work procedures, and implementation activity, data descriptive Because content in study This provides an overview and explains the research object based on existing facts chronologically and systematically based on related problems by maximizing data collection conducted according to documents, interviews, and observations.
Results: The results of the study show that reviewed from four aspects running from the results of observations, these results are an overview of the incoming cargo handling process in supporting the smooth delivery of goods with objects in one of the airlines in Indonesia.
Conclusions: Cargo handling involves loading, unloading, and receiving goods, requiring skilled personnel and accurate procedures. The study shows that coordination between employees and clear procedures supports smooth operations at PT Garuda Indonesia, which operates in accordance with aviation regulations and maintains effective service performance.
Limitations: This study is limited to qualitative observations, interviews, and literature review at selected Indonesian airlines. It only examines four aspects—infrastructure, workforce, work procedures, and implementation—without quantitative analysis or comparison across companies.
Contributions: This research provides an overview of air cargo handling based on four operational aspects and can be used as a reference for improving efficiency, infrastructure, procedures, and service quality in airline cargo operations.

Keywords: *Air Freight, Cargo Service, Handling Cargo Incoming, Infrastructure, Work Procedures*

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1. Introduction

Shipping goods using air transportation ensures the safety of goods, as security is paramount in maintaining customer trust in the continued use of air transportation for shipping (Boone et al., 2016; Hu et al., 2018). Therefore, service activities for incoming cargo/goods passing through airports include unloading, transferring from the aircraft to storage (cargo warehouse), arranging and storing goods, and delivering

them to the owner, until the destination is safe and the items are in proper condition (Alshurideh et al., 2019; Merico et al., 2021). Loading and Unloading are activities carried out in the apron area, namely, the loading and unloading of goods (baggage, cargo, and mail) from and into the aircraft. Loading is carried out during pre-flight, which means that the activity of loading goods (baggage, cargo, and mail) is carried out before the aircraft takes off. flight by the officers ground handling (Côté-Boucher, 2016; Setyawati & Aristiyanto, 2021). As for activity unloading usually performed on moment post fight, It means activity demolish goods done after aircraft do flights. To maintain quality and trust customer, so airline must prevent occurrence mistakes / irregularities handling cargo Which dating to unit incoming warehousing, like damage cargo (cargo is lost) (Faiyetole, 2018; Kuncoro & Harahap, 2021).

This can affect the quality of the service provided by the airline. These errors can impact the decline in customer trust (negative image). Damage cargo can occurs in process displacement goods Which No on the place And lack of understanding officer as well as lack of responsibility at work. In cargo services, it is not uncommon for errors or irregularities to occur in handling them. This will influence the quality of service (Kafalı & Ates¸, 2021). Mistakes (irregularities) and obstacles can be caused by both internal and external factors. Internal factors include human resources, company image, services, facilities, and methods, including suboptimal packaging control, unloading, and storage processes. External factors can cover the need for public, price, and consumer loyalty among other competitors that are emerging, weather power price competition, high taxes, build up errors from the airport of origin, error order located in aircraft reason other (Bendtsen et al., 2021; Saruchera, 2020). Associated with means infrastructure in airline Which done observation This in the process cargo incoming, power Work Which support in process handling cargo incoming, procedure existing work at the airline in handling incoming cargo and carrying out the activities mentioned above like factor internal And External. This phenomenon and description are displayed in this article (Giusti et al., 2019; Heriyanto, 2021).

2. Literature Review

Cargo is simply defined as all (goods) or goods sent by air (airplane), sea (ship), or land (container truck), which are usually for trade, both within the country or internationally, known as export-import. Cargo by air is goods sent without passengers, and delivery can be via airlines or cargo agents (freight forwarders) (Budd & Ison, 2017; Yıldız & Tas¸demir, 2021). A freight forwarder is a person or legal entity that carries out orders to send goods (cargo) from one or several owners, which are collected from one or several places, until the destination end, namely the recipient goods, through system arrangement, cross goods, and documents, using one or several modes of transportation without owning the means of transport. A forwarder is a place where the owners of the goods receive advice on all aspects of shipping and transporting goods (Debbage & Debbage, 2021; Keke et al., 2021; Reis & Silva, 2016).

Cargo is shared in two groups: general and special.

1. General cargo is ordinary shipping goods that do not require special handling events; however, it must still fulfil the conditions set and safety aspects.
2. Special cargo is goods that require special handling (special handling). Type goods can be transported past transport air and must fulfill special requirements and handling in accordance with the IATA regulations and/or carriers. The goods included in the special cargo category are as follows:
3. Live Animal (AVI): Animals that are sent by air, such as child chickens, horses, goats, and fish.
4. Perishable Goods (PER) are goods that are easily damaged, destroyed, or rotten, such as fruits, vegetables, meat, flowers, fish, and plant seeds. Therefore, when loading them, preservatives or air conditioning must be used to ensure they last longer during transit/shipment. Perishable goods

require special attention. in reception and delivery until it arrives at the destination, with the aim of ensuring that the goods are not damaged and are still fresh.

5. Human Remains (HUM) refers to a corpse, which can be divided into two categories (Albanova & Garmash, 2018; Van Asch et al., 2019):
   (a) Uncremated in Coffin is a corpse that is still shaped and in transport using a coffin.
   (b) Cremated refers to the corpse that has been reduced of ash (ashes) and is usually sent in a jar or wooden box.
6. Valuable Goods (VAL) are goods that have high value or are valuable goods such as gold, diamonds, checks, and platinum.
7. Live Human Organ (LHO) is a good in the form of an organ body man that still functions like eyeballs, kidneys, and liver.
8. Strongly Smelling Goods: Goods with a strong smell, such as durian, perfume, and wood oil.
9. Dangerous Goods (DG) are dangerous or may result in disruption to health and flight safety (Agusinta et al., 2021; Sładkowski & Cies´la, 2018). Examples include:
   (a) Explosive Material, with the substance code REC. This item easily explodes because it contains explosive chemicals. Examples include ammunition, firecrackers, etc..
   (b) Non Flammable Compressed Gas (RNG), example: film
   (c) Irritab Material . Goods or materials that contain stimulant substances or can stimulate other objects, such as alcohol, gas, and spirits.
   (d) Carrosive Material (RCM). Goods This can cause rusting. Example: water mercury and substance sour.
   (e) Flammable Goods . These goods are flammable in the gas (RFG), solid (RFS), or liquid (RFL) forms. Example: oxygen.
   (f) Magnetized Material (MAG). Goods that contain magnetic elements. Examples include a compass and loudspeaker.
   (g) Oxidizing Material . Goods that are easily burnt when they react with O2. Examples include bleaching agents, nitrates, and peroxides.
   (h) Fragile Goods (FRG). Goods Which easy glassware. Example: goods made of porcelain, glass, etc.
   (i) Poisonous Substances (RPS). Items containing poisons require a permit from the authorities for their transportation. Examples include cyanide and arsenic.
   (j) Radio Active Material . Ingredients that contain radioactivity.
   (k) Wet freight. Classes of goods in the form of liquids or solid goods mixed with fluid so that loading must be in a container. Examples include fresh meat, wet shrimp, and eggs.

Import is the process of purchasing goods or services from one country to another. Import goods on a large scale generally require a mix of hands from customs excise in the sender and recipient countries. Imports are an essential part of international trade. If companies sell their products locally, they can benefit from lower prices and higher quality than domestic supplies. Imports are heavily influenced by two factors: tax and quota. Import levels are affected by trade regulations (Benedict & Emmanuel, 2021; Isaienko et al., 2020). Government wearing rates (taxes) on product imports. Tax is usually paid directly

by importers, who then charge consumers a higher price for their products. Thus, a product may be priced too high compared to domestically produced products due to tariffs (Gong et al., 2018; Kupfer et al., 2017). When foreign governments impose tariffs, the ability of foreign companies to compete in other countries is affected. That limited. Governments can Also apply quotas on product imports, which limit the number of products that can be imported. Type obstacle trading is even more limited compared to rates, because it explicitly sets a limit on the amount that can be imported (Gong et al., 2018).

Cargo Handling is a service activity for cargo/goods (incoming and outgoing) that passes through the airport, including loading unloading, moving from the aircraft to the storage area (cargo warehouse), arranging and storing the goods and handing them over to the owner, or vice versa receiving from the owner, arranging them in the storage area (cargo warehouse), moving them from the storage area to the aircraft and loading and arranging them in the aircraft compartment, with the understanding that by carrying out all these activities with knowledge and expertise (Haralambides, 2019; Luna et al., 2018). Cargo Service is a special service for transporting goods using a special transport aircraft. Airline companies can organize this service. regular service for passengers but can also be provided by a company specializing in freight transport (Pérez et al., 2020; Zhang et al., 2017).

Incoming refers to the process of receiving goods, which starts from the activity of loading, unloading, or demolishing goods until they are received by the recipient. Supporting documents for handling and servicing incoming cargo can be obtained in several ways (Keeling et al., 2018; Vaquero et al., 2018).

1. Manifest Cargo Inbound
2. SMU (Goods Bill of Lading)
3. SRT (Quarantine Letter for Live Animal)
4. BookTransit

Preparation Incoming Cargo

1. Preparation
    (a) Briefing, check the logbook & particular
    (b) Check the schedule ETA , Parking Stand & Type Aircraft
    (c) Check message / telek that enter / irregularities
    (d) Check condition warehouse and equipment supporters which other in condition Which Good.
    (e) Check / prepare forms :
        i. Cargo damage / lost report
        ii. Cargo tracing (tracer) report
        iii. Announcement arrival of goods
        iv. Cargo irregularity report
2. Implementation
    (a) Take Flt-bag cargo from aircraft
    (b) Inspect cargo manifest, when There is things Which need get attention quick (goods special delivery, transit)
    (c) Supervise goods shipment from aircraft until warehouse

(d) Check document (SMU/AWB, AV-7, Cargo Manifest)

Warehousing is an activity of managing goods, which includes receiving goods, keeping goods in accordance with the requirements, looking after goods, looking after cleanliness of storage space for goods, removing goods according to requirements, taking care of administration, and being responsible for answering management questions. Based on the location of their service, the warehouses are divided into two line (Drljacˇa et al., 2020; Ryczyński et al., 2024).

(a) Line I Warehouse
Warehouse for storing goods that have just been unloaded or are temporarily waiting to be transported to boat sea or aircraft air, moved to the place other after checked by customs.

(b) Warehouse Line II
Warehouse This is only used for room storage and accumulation of goods, during which the documents for these goods are being processed until completion, but are still under the supervision of customs.

3. Methodology

This study used a descriptive qualitative approach with observations of objects from four aspects, namely infrastructure, workforce, work procedures, and implementation of activities, through limited observations at national-scale airline companies, limited interviews regarding the four aspects above, and literature studies to support the available references (Benedict & Emmanuel, 2021).

4. Results and Discussion

The results of the discussion were seen from four aspects of the results of field observations, interviews with airline company employees, and the following results were obtained:

a. Facilities and infrastructure get answer very support for do process performance handling of received cargo. The overall condition of the facilities available at PT Garuda Indonesia is good and can function optimally, so that employees can work optimally in handling the received cargo. The available infrastructure is inadequate and unsuitable for use, thus disrupting cargo handling performance due to ongoing building renovations.

b. According to the results of monitoring or observations, airline employees wear uniforms when carrying out their duties. In the cargo handling section, there are 11 employees with licenses and experience. Apart from that, there are employees assigned as cashiers, aviation security, supervisors, coordinators handling cargo, staff who handle documents, as well as O' Clock Work implemented by employees.

c. Procedure Work, Employee cargo carry out procedure Work incoming cargo with coordinates to the relevant parties. As for the procedures for receiving and storing incoming goods, the procedure for receiving incoming cargo goods is as follows:

(a) Warehouse officers receive SMU (Goods Bill of Lading) documents and cargo manifests from the crew members. cabin .

(b) Monitor unloading or unloading and loading goods

(c) Monitoring withdrawal cart content cargo to warehouse line I or warehouse

(d) Data collection cargo Which enter to warehouse from aircraft (amount coli, amount heavy, number High School, condition or state of cargo, recipient of cargo)

(e) Make a cargo receipt proof signed by the warehouse officer with the consignee (recipient)

(f) When there is cargo that is damaged or insufficient, the officer quickly makes an irregularity report and conducts a search of the city of origin of the cargo sender.

(g) Copy irregularity report For reported to the section Which handle problem

Procedure for the consignee to take goods in the incoming warehouse.

(a) Consignee, Carrying high school, ID card, letter power for the person who was ordered

(b) Docpross, Publish proof receive the goods

(c) Consignee, Pay service warehouse

(d) Checker, Taking items out of warehouse

(e) Consignee, Receiving goods

(f) Start, DocPross officer asks for the SMU number. for the process of taking non-owner goods so that it matches the item to be taken.

(g) Consignee, Give no high school or letter power when which takes No owner goods so that there are no misunderstandings when taking the goods.

(h) Cashier, Officer cashier publish receipt in the form of amount heavy and amount coli goods which enter the warehouse and calculate the rental fee that must be paid by the consignee

(i) Consignee, Pay cost rent warehouse in accordance with receipt payment which issued by the airline

(j) Checker incoming, Emit goods in accordance with high school which given by document processing to be given to the consignee

(k) The consignee receives the goods and enters them into the vehicle with the assistance of a porter.

In the description of the procedures, the handling of incoming cargo handling has been described, employees can carry out according to observations, and external parties also as service users.

d. Implementation Activity
Implementation which done by airlines in about goods cargo on incoming units have been implemented and are in accordance with applicable procedures, this greatly supports performance from warehousing for give service optimal and satisfy consumers (Abdul Rahman et al., 2018; Feng et al., 2015). The following are obstacles or causes of delays in incoming cargo at the warehouse.

(a) Delays are caused by aircraft damage and extreme weather.

(b) The peak season, namely the peak or busy period for domestic cargo shipments, is generally the period leading up to the holiday.

5. Conclusions

The cargo handling process includes loading, unloading, or unloading of goods, and goods are received by the consignee. Cargo handling is a job that requires expertise and high accuracy in every process. To create effective cargo handling, employees must be balanced with good job knowledge and be very supportive to support performance in handling cargo goods received through warehousing, as well as a workforce that is sufficiently skilled and experienced in their field, so that the airline can work well to maintain and improve the quality of its service. The safety and security of incoming goods must be

considered by employees in a way Good, especially in the reception of goods, as all employees must have knowledge of cargo handling. Therefore, the process of receiving goods was performed properly and correctly according to the applicable procedures. Work procedures for handling cargo received through warehousing can support activities in the process of handling the receipt of goods to ensure that they run smoothly.

Process implementation activity PT Garuda Indonesia has already done enough good because it has met standard operating procedures that refer to applicable aviation regulations. This ensures that PT Garuda Indonesia's performance proceeds as expected, without any obstacles that could disrupt its performance.

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Author Contributions

MMA was responsible for the conceptualization of the study and interpretation of the research data. RFS was responsible for data collection, field observations, and analysis of cargo handling processes in airline operations. EM contributed to the literature review, research methodology design, and manuscript preparation. HT participated in reviewing and finalizing the manuscrip

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this study. This research was conducted independently, and no financial or personal relationships influenced the results or interpretation of the findings.

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