

# Preliminary Study on the Status and Development of Hand Carry Service under COVID-19

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**Abstract:** As a new form of air transportation, hand carry service belongs to emergency logistics, which has high timeliness, safety and confidentiality. In December 2019, COVID-19 broke out in a global scale in which logistics played a significant role in the deployment and supply of emergency supplies, meanwhile logistics has to meet the challenges of COVID-19. This article introduces hand carry service, analyses the reasons for its development, describes its whole operation process, and researches on the challenges of its operations under COVID-19 and finally proposes improvement plans to optimize the entire process in response to the normal operations and the problems during the COVID-19 epidemic.

## 1. Introduction

Hand carry service, also known as hand carry or on board courier (abbreviated as OBC), is refers that the courier carries the shipment as his/her luggage on the plane, flying to any destination globally [1]. The courier is the delivery person with the necessary visa of the destination country. As one of the emergency logistics, hand carry service can provide worldwide door-to-door service and keep the shipment supervised throughout the journey for maximum security. Comparing to normal air freight, hand carry service does not have to wait for the fixed flights and deliver with other goods in batches. It truly realizes one-to-one customized service and offer the most secure and reliable service for time-critical or valuable shipments around the world.

## 2. The Reason of Development

Hand carry service has developed for more than 30 years in European and American countries. Affected by the economic environment and customs policy, hand carry started late in China. Since 2007, with the continuous upgrading of Chinese consumption structure, the domestic demand for automobiles and high-tech electronic products has surged. As a result, higher requirements have been put forward for automobile logistics and related high-tech industry logistics. Large foreign-owned hand carry service providers seize the Chinese market, thus hand carry in China begun to develop rapidly. At present, although the freight of the hand carry is several times or even hundreds of times that of ordinary sea and air freight, yet the volume of hand carry is still growing rapidly. The reasons are as follows:

### 2.1. Development and Promotion of Industrial Automation Technology

Most modern manufacturing factories have automated production lines. If the production line shut down due to a component failure, the cost loss is calculated in seconds. For example, the automobile production line can cause tens of thousands of losses per second. Therefore, the faster speed of supply for the broken component means the less loss of the company. Thus the fastest and safest logistics to deliver the components can be the best cost-effective way in the emergency automation supply chain.

### 2.2. Competitive Pressure of the Automotive Industry

In the automotive supply chain, OEMs as a core enterprise generally have thousands of

component suppliers. Due to competitive pressures, component suppliers must provide OEMs with high-quality products and satisfied service, and have to withstand the pressure from OEMs, even some OEMs impose a fine of US\$500 per minute on their suppliers for every minute of delay. This forces auto parts suppliers to pay regardless of the cost and use the fastest possible logistics method to reach an agreed delivery date when their supply chain has problems [2].

### **2.3. Requirements for Logistics of High Value Products**

High value products need to be transported by hand carry to ensure their timelessness and safety. The products like jewellery and diamonds, important confidential documents, highly sophisticated instruments and technological products, have high-value attributes. Therefore the cost of hand carry service accounts for a relatively low proportion of their overall value, while hand carry can satisfy their timeliness and safety needs.

### **2.4. The Attributes of Some Special Products**

Some products related to life science and clinical medicine are urgent, which needs the delivery to be safe and on time. The World Red Cross organization sends stem cells from volunteers from different countries to leukaemia patients around the world by hand carry service to ensure the viability and success rate of hemopoietic stem cell for bone marrow transplantation. About 2500 patients in China every year who need organ transplantation lose their lives because the transplanted organs are not delivered in time. Therefore timeliness is critical for some of the medical expedited shipments and hand carry service can just satisfy their urgent needs [3].

## **3. The Operation Process of Hand Carry Service**

After receiving the inquiry from the customer, the operator of the hand carry company needs to find the nearest airport to the destination through electronic maps according to the delivery address or zip code provided by the customer, then check the IATA code and fastest flight to the destination airport, and then offer the solution and quotation within 30mins. If the customer confirms the solution, the operator needs to arrange the entire hand carry process in the shortest time.

Figure 1. shows the entire operation process of hand carry service, which takes the door to door service for export goods as an example, in the domestic segment the operator has to arrange the driver to pick up the goods, at the same time find the available courier, book flight ticket, and arrange the customs broker to do the export customs declaration if needed. After receiving the instrument from the operator, the driver shall pick up the goods from the pick-up place to the airport, where the driver hands goods to the courier. For the international segment, the operator needs to contact local customs broker to do an import pre-declaration, which shall issue an entry number by local customs system. After the courier arrives at the destination airport, local customs inspects the conformity of the entry number and the cargo, and then releases the cargo. This way of customs clearance can greatly save time and is special for the cargo of hand carry service. The reason is that cargo is declared on the basis of personal luggage, which is the advantages and particularities of hand carry service. Finally the delivery to door at destination shall be completed by the courier.

## **4. The Challenges of the Hand Carry Affected by COVID-19**

Affected by the COVID-19, hand carry service is much more severely impacted than any other logistics formats. From the analysis of its operation process, it is mainly reflected in the following aspects:

### **4.1. Decrease in International Flights**

Many airlines have cancelled international flights and routes. As of press time, there are still some airlines in the world that are in a state of grounding, and a considerable number of airlines have completely suspended the operation of international routes, leaving only a small amount of domestic flight. However, International business accounts for more than 90% of hand carry

company, which has greatly reduced the volume of hand carry business using international airlines as main transport carriers [3].

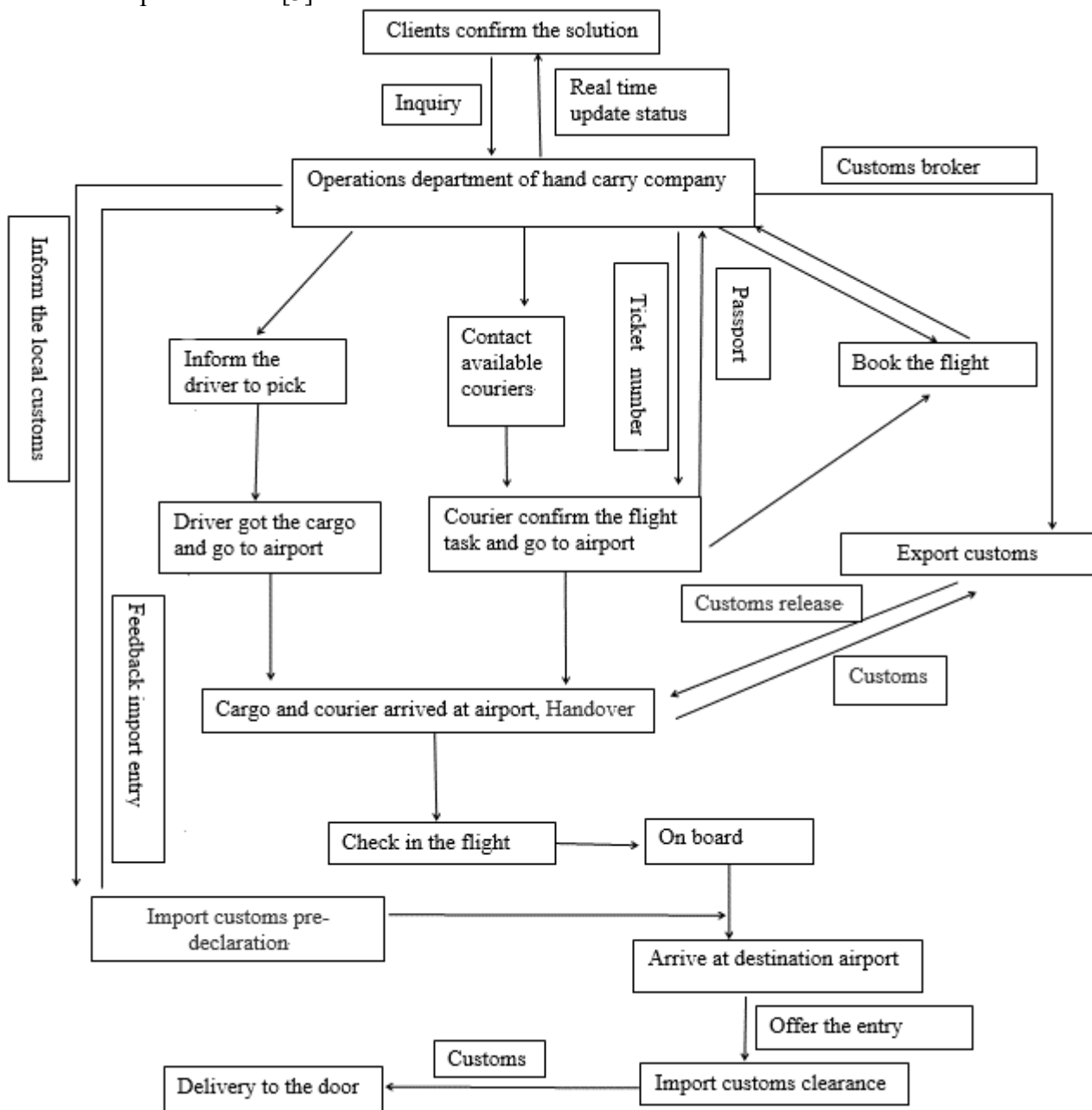


Figure 1 Operation process of hand carry service

#### 4.2. Travelling Bans Policy during the Epidemic

The governments of several countries and regions have issued travel warnings and travel bans during the COVID-19 epidemic, which makes it much more difficult for the courier to enter the destination country. Even if some countries do not implement travel bans, the quarantine and observation policy in the destination area will also greatly and negatively affect the timeliness of the hand carry service [4].

#### 4.3. Shortage Quantity of Courier

Due to the particularity of hand carry service, the courier are normally foreigners holding foreign passports. The outbreak of the COVID-19 coincided during the Chinese Spring Festival holiday, many couriers returned to their own countries. With the continuous spread of the epidemic, companies in most regions have delayed their work under the strict control of local governments, and the rework cycle has been significantly lengthened. The serious shortage of courier undoubtedly

poses a big challenge especially for the export hand carry business.

#### **4.4. Domestic Lockdown Measures**

In order to prevent the spread of COVID-19 during the epidemic prevention and control period, various regions take reasonable preventive measures within the scope permitted by the law in accordance with relevant government policies, such as lockdown measures [5]. The isolation of outsiders prevents the spread of the epidemic to a certain extent, while at the same time makes it harder to carry out the domestic hand carry service.

### **5. The Improvements to Optimize the Operation Process**

In view of high requirements for timeliness and safety of hand carry service, the following improvement plans are proposed to optimize the process and enhance the timeliness and safety of the entire process in response to the daily operations of the hand carry service and the problems during the COVID-19 epidemic.

#### **5.1. Offer Alternative Logistics Solutions**

In response to the significant reduction in international and domestic flights during the COVID-19 epidemic, hand carry companies can comprehensively evaluate customer needs and cargo types to offer customers with alternative logistics solutions. According to the attributes of the cargo and the customers' requirement for timeliness, safety and cost, hand carry providers can provide alternative solutions such as air consolidation transport, air express, charter flight and so on in addition to hand carry service. For domestic segment, hand carry company can consider other transportation carriers including high-speed rail and special vehicles.

#### **5.2. Establish Courier Database**

70% of the flight tasks are completed by part-time couriers for hand carry company, which can reduce the company's labour costs and increase the flexibility in employment, but the part-time courier is relatively mobile and variability. Therefore the courier database is necessary to be established according to different nationalities. Service quality classification of part-time courier shall be also established by comprehensive evaluation and service quality information collected by the regular return visits and feedback from clients. Before major public holidays, contact and inquiry each part-time courier with high frequency of delivery whether they can arrange flight task during the holidays and then make a record. Based on the situation of available couriers during the holiday, contingency plans shall be further drafted and revised in advance, especially for the countries and regions with insufficient couriers.

#### **5.3. The Optimization of Picking up Process**

Hand carry companies generally deploy 3-5 drivers according to the business volume. They normally arrange their own drivers or employees to complete picking up process, which is feasible and cost-effective if the goods in the same city where the hand carry company is located and its surrounding cities. However, when the time of one-way trip for picking up is over 3 hours, it means more than six hours for picking up and returning back to airport, which is very time-consuming and unreasonable. Especially during the COVID-19 epidemic, some areas have to isolate and observe the incoming personnel and vehicles [6]. Therefore, hand carry companies should cooperate with some reliable and reputable local delivery agents for the cities with large business volume. Picking up by local delivery agents eliminates the time consumption of outbound journey and the local driver will be more familiar with the local area, which can greatly save the picking time and enhance the efficiency of the entire process.

#### **5.4. Arrange an Airport Operator**

Arrange an airport operator who shall be responsible for on-site customs declaration and airport consignment. Hand carry companies are generally registered as freight forwarding companies in

China and cannot apply import and export declaration rights, so most hand carry companies need to entrust customs broker to do the import and export customs declarations. Due to the large business volume of customs brokers, if errors in documents cannot be corrected and feedback in time, the customs declaration can be delayed. In addition, as an important logistics node, the airport operator can receive the cargo from the pick-up driver, which do not need the driver to wait until the courier arrive at the airport, then pack it according to the requirements of air consignment, and finally hand over the packed cargo over to the courier. When the quantity of the cargo is large, it can also assist the courier with the consignment procedures. These all tasks require an experienced professional operator to communicate and connect.

### **5.5. Optimization of the Delivery Problem at Destination**

Timeliness is definitely the most important element of hand carry service. After customs releases cargo at destination, it is normally the courier that deliver it to the door in person, which is undoubtedly the best way to achieve the logistics seamless. However when the delivery distance exceeds 30km, local delivery agents shall be the better way to deliver to the door to ensure the quality and timeliness of the service. In addition, under the COVID-19 epidemic situation, this way is free of the local quarantine policy [7].

### **5.6. Develop New Business Models**

Hand carry companies shall make full use of their leading advantages in global emergency logistics and develop new business models to cope with the negative impact on their core business during the special periods. At present, some hand carry companies are actively exploring the life science cold chain market, and providing professional life science cold chain logistics service for biomedical laboratories, clinical medical institutions, and government public welfare organizations [8], from which the products generally have high requirements for timeliness, privacy and safety. Through special and professional cold chain package, hand carry service can provide dedicated care from the special person in the whole journey.

## **6. Conclusion**

With the development of the Internet technology, the survival and competition space of enterprises has gradually extend from traditional markets to online markets. As traditional enterprises, hand carry service can increase online promotion channels. Some hand carry companies have developed their own online APP software, such as Shundai App, which moves the hand carry service from the offline to the online. In addition, hand carry service providers can also use their business advantage to develop cross-border e-commerce and other business. In a word, under the implementation and promotion of the national “the Belt and Road “initiative and Intelligent Logistics, the emergency logistics industry represented by hand carry service will be surely create new splendour and glory.

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