SHORT-TERM BAGGAGE STORAGE SYSTEMS *LEAD TO* LONG-TERM SUCCESS

Timing is everything for airlines and airports that are trying to run a successful baggage handling operation. Ensuring the timely arrival of bags on a consistent basis is not an easy undertaking, especially when they are checked-in early or arrive early from connecting flights.

Many early bags end up lost or delayed. For the majority of passengers, this inconvenience is just seen as part of the reality of twenty-first century air travel that the traveling public must endure. For the airline, it is just part of the cost of doing business, and the related costs must be absorbed. The reality is that there is a solution to this ever-present problem: an Early Bag Storage (EBS) system for early check-in or transfer bags. An automated EBS system has the potential to greatly improve the customer experience of the baggage handling process, as well as operational costs and efficiency.

Most airlines employ some type of short-term baggage storage as an essential part of their baggage handling process. However, there is no universal solution. The many factors that must be taken into consideration include available space, size of peak loads, number of transfer passengers, connection times and availability and cost of labor. Larger airports, in particular, find automated EBS systems to be a viable, comprehensive solution.

An automated EBS system decreases the number of human touches per bag in the system, which dramatically decreases the Mishandled Baggage Rate (MBR) (as reflected in the annual SITA Baggage Report) and potentially reduces operational costs. By creating a buffer area within the sortation system, the operator is able to deliver the bag to the make-up area at the correct time. This accuracy and efficiency driven approach reduces the chances of lost or delayed luggage and helps to keep labor and operational costs down.

Assume a traveler has arrived three hours prior to his scheduled flight departure. After the bag has cleared security screening, it passes through a tag reader, bar code or RFID. The information derived from the successful tag read includes the passenger information and the flight on which the traveler is scheduled to depart. In a traditional baggage handling process, the automated sortation system would look up the flight information and route the bag directly to the make-up area.

The traditional baggage sortation system would have delivered the bag to the make-up area nearly three hours before departure. At this point, workers would have manually removed the baggage from the system and transported it to the baggage storage area.

This traditional method of baggage storage proves more costly for many reasons. The high number of human touches means greater chances for mishandles, more required workforce and increased cost. Because bags are manually moved and stored, it becomes workers' responsibility to manage, track and ensure they are properly stored and returned to the sortation system in the proper window of time. Accurate handling of bags is only further complicated by constantly changing shifts. The risk of human error increases, which often results in lost or delayed baggage and ultimately, more costs for the airlines. Plus, manually moving and transporting baggage to storage not only increases the chances of work related injuries, it also means more carts and tugs are in use, which could otherwise be utilized to move bags to and from flights. These effects all equate to increasing costs. Examining the same scenario provided above in an automated early baggage storage system setting, the traveler's bag is identified in the same manner, but it would be routed to one of two types of EBS systems: a lane storage system or a rack storage system.

Lane versus Rack Storage Systems

In a lane storage system, bags are routed into a conveyor lane with other bags scheduled to be released back into the sortation system within the same pre-defined window of time. This timeframe is typically based on the flight time. Lane storage is a simple, economical solution to early bag storage, especially in situations where building height restrictions exist at the airport.

1 A LANE STORAGE EBS SYSTEM

2 A RACK STORAGE EBS SYSTEM, AN IDEAL SOLUTION FOR LARGE VOLUME AIRPORTS

In contrast, a rack storage system is an effective, alternative solution, ideal for large volume airports which have a limited horizontal building capacity but little to no vertical building height restrictions. These systems capitalize on vertical space by using Automatic Storage & Retrieval System (AS/RS) technology, high density racking and cranes. Early check-in or transfer bags are routed to the storage area in individual tubs and loaded directly into the racking by robotic cranes. This strategy provides unique single bag storage and retrieval at the appropriate time and bags are 'pulled' to the make-up area on demand.

No two airports are alike. So, like traditional baggage storage systems, determining the configuration and capital cost of implementation of an Automated EBS system requires careful evaluation of capacity, peak volume and the space where the system will be housed. However, once installed, an EBS systems can rely on technology to minimize the risk of human error and ensure accuracy, efficiency and a more satisfying customer experience at the airport. ✈

BENEFITS OF AN AUTOMATED BAGGAGE STORE SYSTEM

In addition to providing a more efficient passenger experience, use of lane or rack automated baggage store systems and 'pull' technology provides multiple airport stakeholders with significant operational benefits.

AIRLINE BENEFITS
 » A longer period of check-in time for passengers
 » Dynamic management of baggage loads for efficient flight building, leveling labor needs
 » Less equipment during non-peak times means less energy use
 » Efficiency in handling transfer baggage
 » Capability to efficiently manage peak capacity demands within the baggage system
 » More efficient method to handle irregular operation disruptions
 » Potential for reduction of capitol expense of make-up systems

AIRPORT BENEFITS
 » Longer check-in time periods can result in greater time spent in airport retail shops
 » Reduced area required for baggage make-up, less capital tied up in brick and mortar
 » Reducing the amount of human handling improves security
 » Utilization of storage and retrieval systems can reduce the overall electrical energy consumption