Case Study – Sydney Airport Domestic Terminal 2 1999 - 2000

Sydney, Australia

Introduction

Glidepath Limited was contracted in March 1998 by Thiess Contractors on behalf of Ansett Australia Limited to provide an Automated Baggage Handling System for the then Ansett Sydney Domestic Terminal. Glidepath completed installation of the system in June 2000 and has since won the six monthly Operation and Maintenance Contract for the system.

The scope of supply included 31 check-in, tag, and induction conveyers, an out of gauge check-in, integrated sortation tilt tray, 9 destination laterals, 6 Multipath reclaim carousels and a sort make-up carousel.

Configuration

The completed system is comprised of 31 check-in positions each with a scale conveyor, tag conveyor and induction conveyor. The check-ins are grouped in pairs each with an individual transport conveyor which declines through a penetration in the floor slab enabling the passengers to walk between the pairs of check-in positions after checking in. The declines feed the transport system in the bag hall where it is inducted onto a tilt-tray sorter. Baggage is then tipped off to one of the 8 lateral conveyors, which is designated to a particular flight for loading. Baggage can also be inducted into the system via the Group Check-in system or the Domestic Interline Input system.

Automatic Sortation

The new BHS system is an Automatic Sortation System using both Tracking from Check-in and Bar Code Scanners. This is a step up from a standard Automatic Sortation system where only bar code scanners located in the bag hall on the BHS read the bag tags and sort them to their destination lateral. The baggage is only 'tracked 'once it passes through the scanner. The bar code reader is located as close to the laterals as possible to reduce tracking error between the scanner and the unload point.

The system matches the passenger bag and flight information and automatically 'tracks' every bag from the moment an item is accepted onto the check-in conveyor through to the required lateral designated to its flight

Tracking is the term used in the computer model to simulate and follow the bag and its identification throughout its journey in the system. Ie. the system knows where every bag is from the moment the bag tag is printed, up until the bag is removed from its destination lateral in the bag hall.

Bar code scanners are also used, and the combination of both scanning the bag tag in the field and tracking it from check-in will ensure close to 100% automatic sortation rate. With a standard automatic sortation system the bag tag 'read rate' is typically up to 95%. This is due to a number of factors such as tag print quality, tag presentation to the scanner and tag damage. Therefore there is a requirement

for manual encoding where all non read bags are diverted for manual intervention. This is a full time position as well as additional equipment which is non efficient.

By incorporating tracking from check-in this cost will be reduced considerably. At present there are approximately 5 sites throughout the world which use tracking from check-in technology.

Controls

There are two main levels of control in the baggage handling system.

(i) High Level Controls which receive the BSM (baggage source message) from the airport system. This data is time-stamped and matches the acceptance of bags into the check-in system with its flight data. This then defines which lateral the bag is to be delivered to and passes this information to the low level control system.

(ii) The Low Level Control System tracks the bag along each conveyor via photo eyes and constantly updates the computer model. The bag passes through the bag tag scanner to confirm the bag with its flight number. The bag is then simply tipped off the sorter at its designated lateral point.

The Glidepath High Level Controls interface with the Low Level Controls and the Crisplant System. The system has a full Maintenance Diagnostic System, thus enabling the operator to determine any problem that may occur on the system such as bag jams, motor faults or emergency stops. PLC's (Programmable Logic Controllers) along with a device net and distributed control are used for overall control and operation functionality of the conveyors from the 'check-in' area on level three to the baggage 'make-up' area on level one.

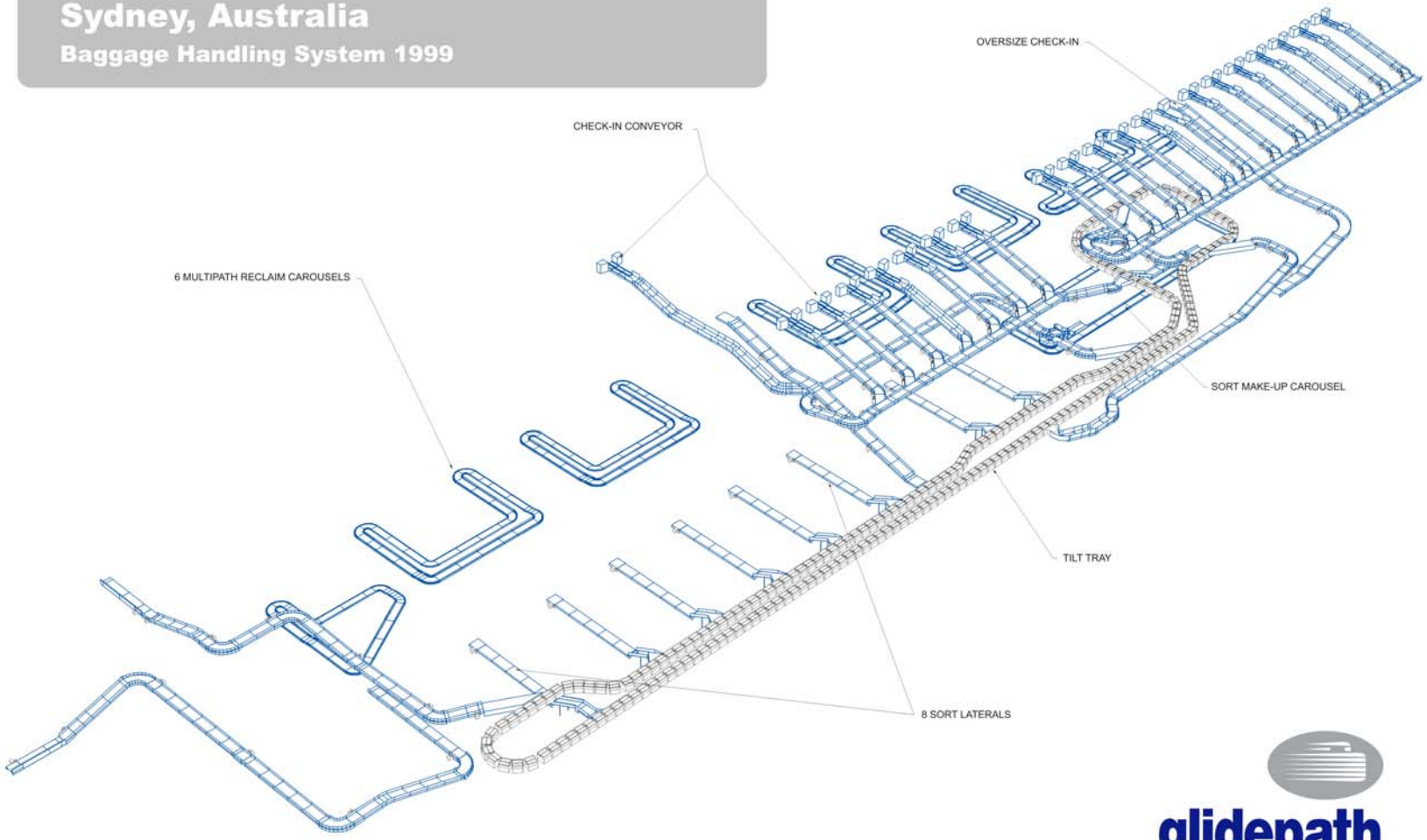
System Installation

Most of the system is supported by a hanging system anchored to the building structure. The total length of belt conveyor is 750m comprising of 31 check-in positions, two oversize systems, 8 lateral conveyors, one group check-in system and one interline input system. There is also one Pallet loop make up unit 120m in length, 6 Multipath reclaim loops totalling 450m in length and the tilt tray sorter at 300m long.

Staging

The project was broken into 2 main stages. Stage 1 has been completed which providing 23 check-in positions with the transport system feeding one make up loop for manual sortation. The balance of the baggage handling system including the sorter was bought on line in June 2000 providing full auto sortation in time for the Sydney 2000 Olympics. The system sorts bags at a rate of 60 bags per minute.

Ansett Sydney Domestic Terminal (T2)
Sydney, Australia
Baggage Handling System 1999



glidepath

Client Reference

AIRPORT ALLIANCE
2 RUSSELL STREET
MORLEY WA 6062
PH: (08) 9276 7649
FAX: (08) 9276 7693
MOBILE: 0418 947 323
EMAIL: airport.alliance
@bigpond.com

TO WHOM IT MAY CONCERN:

PERFORMANCE OF GLIDEPATH PTY LTD IN CARRYING OUT THE DESIGN AND INSTALLATION OF THE AUTOMATED BAGGAGE SYSTEM AT THE ANSETT SYDNEY DOMESTIC TERMINAL

I was employed by Ansett Australia on the Ansett Sydney Domestic Terminal Baggage System as a specialist baggage system consultant.

In the course of performing my role as Ansett's specialist consultant, I had close involvement with the design and delivery of the system.

The project requirements for the system presented a number of challenges for the contractor from both design and installation perspectives.

- The Ansett requirements in regard to the sortation accuracy were very demanding with a primary sortation accuracy of 99.5% specified.
- The system involved the use of a tilt tray sorter which required to be integrated to a newly developed control system.
- The control system required a high level of diagnostic features and reporting capabilities.
- The new system had to be installed within an existing building, which was undergoing an extensive phased redevelopment program to an aggressive schedule, without disruption to the normal processing of passengers.

Glidepath successfully completed the project in time to meet the programme for the Sydney 2000 Olympics.

Glidepath's performance in regard to delivery of this project was of the highest standard.

- In meeting the design and installation challenges new and innovative solutions were developed.
- On site project management was co operative, effective and efficient.
- The control system commissioning team was co operative, effective and efficient.

As a result of employing new innovations the Ansett Sydney system is currently delivering the highest known levels of primary sortation accuracy in Australia and probably the world.

Cunningham & Associates (Aust) Pty. Ltd. ACN 080 228 020
as Trustee for the Cunningham Family Trust
Trading as Airport Alliance