

Handling business

Finavia's Reijo Tasanen takes us behind the scenes of Helsinki Airport's €150 million state-of-the-art baggage handling system and how passengers are enjoying a new long-haul experience.



Reijo Tasanen

Reijo Tasanen was chief resident engineer and department head at the National Board of Aviation between 1974-1990, project manager at the Civil Aviation Administration between 1991-2003, head of Airport Engineering between 2004-2006 and director of Finavia's Airports Department from 2007 to the present day.



In December 2009, the Helsinki Airport terminal extension opened for long-haul flight passengers. The three-storey terminal extension offers a new baggage handling system utilising the latest technology and has

the capacity to handle over 16 million passengers per year and 13.5 million items of baggage per year.

"The extension of the existing terminal facilities is always a complicated field of work. It takes detailed planning to make sure that the construction work does not have a negative effect on day-to-day airport operations," explains Reijo Tasanen, senior vice-president, Business Area Airports, Finavia.

the unloading area for transfer bags and in the multi-level screening area. However, for longer transportation e.g. between different terminals, faster conveyors have been built.

"The main aim was to provide a state-of-the-art handling system to guarantee reliable baggage handling," says Tasanen.

The bags will lie on the special 'totes', which will be moved by Crisbag-conveyor lines. These conveyor lines

"The airport has a major competitive advantage due to its location on the shortest route from Asia to Europe."

Reliable luggage handling

The complete baggage handling system is a combination of tried-and-tested and cutting-edge conveyor technology. One part of the system is based on conventional belt conveyors, situated in

will be equipped with hybrid reading stations, including the RFID readers and barcode readers.

The full capacity will be approximately 7,000 bags per hour, in which the peak for transfer bags could be 3,000 bags per



The new terminal features a Via Lounge, Via Spa and a new restaurant.

hour through screening, and an additional line for 'clean' bags (bags without hazardous materials) with the capacity of 1,200 bags/hour.

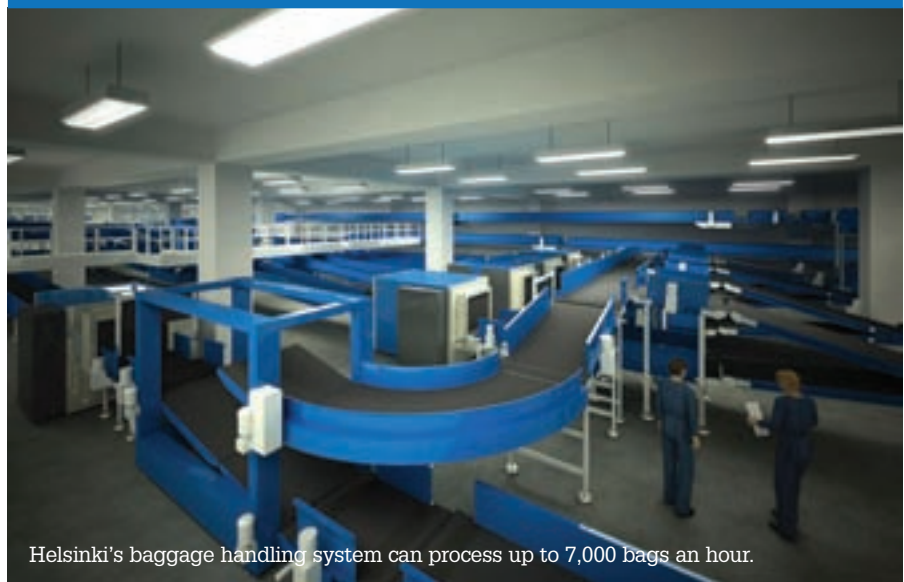
The baggage from three wide-body aircraft can be handled in 15 minutes. So for the purposes of calculations, three wide-body aircraft can be considered to contain 750 bags. Therefore, in transfer traffic, it is possible to handle 3,000 bags in one hour, and 3,500 bags per hour from departing passengers arriving through check-in. The system includes an early bags store that will have room for approximately 1,500 bags.

The handling of bags for transfer traffic takes a minimum of eight minutes, and a maximum of around 14 minutes. For departure traffic, the times are always under 13 minutes. With regard to checked-in bags for departure traffic, it is not as challenging to stay on schedule as it is for baggage handling for transfer traffic, as departing passengers usually arrive at the airport well in advance.

82 sorting chutes and three carousels have been dedicated to baggage sorting and all lines have been built as redundant, so that if there is an energy failure, at least half of the handling capacity will remain.

Terminal extension facts

- The total estimated cost of the extension is €143 million, of which more than half has been invested in a new baggage handling centre.
- The new extension covers a total area of 39,000m².
- The extended terminal has been designed to handle 16 million passengers and 13.5 million items of baggage per year.
- The baggage handling system is over 10km long and has a peak capacity of 7,000 items of baggage per hour.
- Following the opening of the extension, Helsinki Airport will have eight jet ways intended for wide-bodied aircraft. The new jet ways accommodate all Airbus A330-A340/A350 and B777/B747 aircraft types.
- The extension's chief designer and architect is Parviainen Arkkitehdit Oy.



Helsinki's baggage handling system can process up to 7,000 bags an hour.

“The system was designed first, so the extension building itself will be built ‘around’ the system.”

East meets west

Helsinki's role as a transfer airport between Europe and Asia is becoming more prominent. It handled 12.6 million passengers in 2009, of which 10.2 million were international passengers. In 2009 the number of international transfer passengers was over 2 million. The most popular destinations in Asia were Thailand (348,900 passengers), Japan (321,500 passengers) and China (287,100 passengers).

In order to keep up, Helsinki Airport will be under major renovation until the end of 2011. The departure haul areas will be renovated and updated to today's requirements. In addition to this, the rail connection to the airport, which began construction in the autumn of 2009, will be completed in spring 2014. The new rail connection will also provide much better land connections to the airport.

Increasing transfer traffic

Helsinki provides over 60 direct weekly flights to ten destinations in Asia and the US, and there are direct flight connections from Helsinki to over 60 destinations in Europe. It has an edge over other airports due to its location on the shortest route from Asia to Europe,

and a key objective of the terminal extension is to prepare for growth in transfer passenger traffic between Asia and Europe. Around 75% of passengers from Asia transfer their flight at Helsinki Airport. Therefore, the Asian traffic also strengthens frequencies and the destination network in Europe.

A new design

The new building has three floors where the two lowest floors will serve bus gates, baggage handling and technical areas. The baggage handling areas located in the lower floors of the extension and will handle most of the baggage at the airport. The gross floor space of the building is 37,000m², of which a gross area of 20,000m² will serve baggage handling. The apron will be expanded by 45,000m² and 120,000m² of existing apron will be refurbished.

The design of the new baggage handling system was prepared in cooperation with the consulting firm SKS Airport Logistics and Finavia's experts. The system was designed first so that the extension building itself would be built around the system.

For baggage handling, speed and accuracy are crucial for productive and efficient operations. ■