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ASSEMBLY – 35TH SESSION

PLENARY

Agenda Item 2: Statements by delegations of Contracting States and of Observers

PREPARING CHANGI AIRPORT FOR AIRBUS A380 OPERATIONS

(Presented by Singapore)

INFORMATION PAPER

SUMMARY

This paper outlines Changi Airport's preparations to accommodate the operation of the Airbus A380, a new larger aircraft type that will enter into commercial service in 2006. It covers modifications required of ground infrastructure, such as the airfield, aprons as well as passenger terminal facilities, in order to ensure that airport safety, efficiency and service quality are not compromised.

1. INTRODUCTION

1.1 The first commercial flight of the new Airbus A380 aircraft will be launched by Singapore Airlines in Year 2006. As the home base for Singapore Airlines, Singapore Changi Airport has embarked on a series of upgrading projects to prepare its airfield facilities and passenger terminals to serve this new aircraft type.

2. AIRBUS A380 AND ITS CHALLENGES TO AIRPORT DESIGNERS

2.1 With a maximum ramp weight of close to 600 tonnes and occupying a size bracket of 80m by 80m, the new family of Airbus A380 aircraft is classified under a new Code 'F' aircraft category in ICAO Annex 14, Vol. I. Compared to the 65m by 71m B747-400, which weighs only up to 400 tonnes, the A380 poses considerable challenge to the airport designers and planners in adapting their existing runway, taxiway and apron facilities to ensure its safe and efficient operation.

2.2 Carrying up to 555 passengers in a typical 3 class configuration, the A380 has 30% more passengers compared to the 400 seat B747-400. Operation of the A380 at busy airports could bring about a surge in number of peak hour passengers, which could strain existing passenger terminal processing facilities and processes.

2.3 At Changi Airport, upgrading works to prepare for A380 operations are focused on three key areas, namely:

a) Ensuring safety of A380 operations in the airfield;

b) Maintaining aircraft handling and passenger processing efficiencies at the apron and terminal; and

c) Enhancing level of service and experience of A380 passengers.

3. SAFETY IN THE AIRFIELD

3.1 Fortunately for Changi, airport planners during the construction stage of the airport had exercised good foresight and sound judgment in allowing sufficient separation between runways, taxiways and objects/obstacles within the airfield. Changi is able to accommodate most of the requirements for the new A380 in accordance with the Standards and Recommended Practices stipulated in ICAO Annex 14 Vol. I for Code 'F' aircraft operations. Costly and disruptive modifications, which many other airports have encountered, are avoided.

3.2 Changi also has sufficient provisions to meet ICAO's recommendations for runway and taxiway widths and adjacent strips for Code 'F' aircraft type. The designed runway and taxiway pavement strength is also adequate to meet the loading requirement of the A380.

3.3 However, Changi would still need to widen the widths of its runway shoulders to protect the A380 engines from foreign object ingestion. The width of Changi's taxiway fillets also has to be widened to allow safer manoeuvring of A380 at taxiway intersections. As these modification works have to be carried out in a fully operational environment, risk assessment and safety management measures are carried out to minimize inconvenience to aircraft operations and to ensure that airside safety requirements are observed at all times.

3.4 Changi is also upgrading its rescue and fire-fighting equipment to comply with ICAO Annex 14 Vol. I Category 10 requirements for Code 'F' aircraft types.

4. AIRCRAFT HANDLING EFFICIENCY

4.1 Changi has planned for some 20 suitably-sized passenger aircraft stands, distributed across Passenger Terminals 1, 2 and the future Terminal 3 to accommodate the A380 aircraft. This represents around 22% of all the total aerobridge stands. Should there be further demand for A380 aerobridge stands in future, more of the existing stands can be retrofitted to accept this larger aircraft, albeit with downsizing of adjacent stands to overcome space constraints.

4.2 When selecting the parking stands which are to be designated for A380 operation, factors considered include passenger walking distance between gate and terminal, forecast aircraft fleet mix,

aircraft pushback distances and constraints, gate holdroom expansion costs and the level of inconvenience to users when the stands are closed for aircraft fuel pit, aerobridge arm, docking guidance system and apron lighting modifications.

4.3 To cut down on the time required for embarkation and disembarkation of the large number of passengers carried by the A380, a third aerobridge arm is being added for each A380 aerobridge stand to serve passengers seated on its upper deck directly.

4.4 On the aircraft parking apron, a larger staging area has been planned for parking of baggage containers and other aircraft ground handling vehicles and equipment to serve the A380. New remote aircraft stands and freighter aircraft sized for the A380 are also being constructed.

5. PASSENGER PROCESSING EFFICIENCY

5.1 Within the passenger terminals, various processing facilities are also being reviewed with the aim of identifying areas that will require improvement or upgrading in order to avoid deterioration in efficiency or service levels when handling the surge of passengers from A380 flights. For instance, in Terminal 1, more check-in counters have been added to ensure that existing check-in processing and queuing time performance standards can continue to be met. Additional sets of X-ray machines, metal detectors and security search counters will also be provided at each A380 gate holdroom so as to upkeep the stringent security checks without giving rise to long waiting times for passengers. Where necessary, immigration and customs counters may also be added.

5.2 To maintain the current baggage presentation time standard for arriving flights, the baggage handling area would be reconfigured to allow up to six baggage container off-loading positions for each baggage claim belt. A number of these baggage claim belts within each terminal will also be extended to provide at least 90m frontage for passengers from A380 flights to collect their bags. A high-speed baggage conveyor system and a new People Mover System will also be installed by 2008 to facilitate quick transfers of bags and passengers amongst the 3 passenger terminals.

6. ENHANCED LEVEL OF SERVICE

6.1 The A380 is likely to strengthen the hub-and-spoke network of air traffic and bring about a greater proportion of transfer passengers to hub airports. In this respect, Changi has also taken steps to facilitate and better serve the increasing volume of transfer passengers using the airport.

6.2 As far as possible, airlines with a high proportion of interline transfer passengers are housed within the same terminal so as to reduce the minimum connection time for passengers. Using Information Technology, flights with a known high proportion of connecting passengers would be arranged to park as close to one another as possible so as to minimise walking distances for transfer passengers.

6.3 We are also reviewing the passenger terminal space and facility provisions requirements to cope with the greater surge of passengers. The transit lounge in Terminal 2 is currently being expanded to cater room for more passenger amenities and event promotions. Similar upgrading works have also been planned for Terminal 1 to provide more transit lounge space for shops and services, seating and general circulation.

7. CONCLUSION

7.1 In summary, airports are currently facing challenging times as a result of changes taking place in the aviation industry. The introduction of A380 is but one of such challenges. Changi Airport is committed towards improving and upgrading airport facilities to ensure safe operation of the A380 while maintaining high efficiency and service standards.

7.2 Changi will continue to work with its users, such as airlines, pilots, handlers and passengers, to bring about these enhancements.

8. ACTION BY THE ASSEMBLY

8.1 The Assembly is invited to note the work done by Singapore Changi Airport to accommodate the operations of the Airbus A380.

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