



FACILITATION (FAL) DIVISION — TWELFTH SESSION

Cairo, Egypt, 22 March to 2 April 2004

- Agenda Item 5: Modernizing airport facilities and service delivery systems**
5.1: Revision of Annex 9, Chapter 6

THE INTRODUCTION OF THE AIRBUS A380 AIRCRAFT

(Presented by the International Air Transport Association (IATA))

SUMMARY

This working paper presents to the Division a synopsis of the issues for consideration by operators and airports posed by the introduction of the Airbus A380 Aircraft. A presentation illustrating the main points will be made to the Division.

1. INTRODUCTION

1.1 The first Airbus A380 is due for delivery in 2006.

1.2 Airlines such as, Singapore Airlines, Virgin Atlantic, Emirates, Qantas and Air France have placed firm orders.

1.3 The aircraft has a wingspan of 79.6 metres and is 72.7 metres in length. Compare to the A340-600 – length 75.3 and a wingspan of 63.5 metres or the B747-400 – length 70.7 metres and a wingspan of 64.5 metres. The A380 will transport from 550 to 800 passengers, depending upon internal configuration, and the impact of that passenger flow on internal airport infrastructure will be based on the number of loading bridges available for boarding and disembarkation.

1.4 Significant changes will be required to many aspects of existing airport infrastructure. The introduction of the aircraft will present new challenges for airport and airline security as well as border control authorities. It cannot be assumed that the impact of an aircraft of this size on airport facilities will be merely directly proportional to the extra numbers of passengers. It will be shown – by simulation in the presentation – that in some areas, an exponential increase in choke points may be experienced.

2. ISSUES FOR CONSIDERATION

2.1 Key airport systems such as runways, taxiways, aircraft flows, aprons and gates will all be affected. However, these areas are being dealt with in other forums and by other ICAO divisions. The Division should, however, consider the impact of the A380 on the ability of existing airport facilities to manage the increased throughput of passengers and their baggage whilst maintaining adequate service levels.

2.1.1 **Airport facilities.** Airports are interrelated systems that process aircraft, passenger, baggage and vehicle flows. Computer simulation can help to identify possible choke points and identify workable solutions.

2.1.2 **Passenger terminal capacity.** Unlike runways – which have a “hard” capacity definition, the capacity of a passenger terminal relates directly to facility size and design, and the extent of congestion that might be caused by a particular operation. Particularly, any delays and/or interruptions to throughput that might result from that operation will have a significant impact on both terminal capacity and acceptable levels of services provided to the travelling public.

2.1.3 Performance and level of service are based on operating conditions and rules, but also upon passenger behaviour and characteristics and the rate at which passengers flow through the facility. The flow rates for passengers disembarking from A380 aircraft utilizing three (3) contact bridges will be exceptionally high and may result in unpredictable behaviours in more crowded corridors and in queuing areas.

2.1.4 **Aircraft turnaround time.** Savings in boarding/deplaning times do not necessarily convert into reduced aircraft turnaround time. Catering (possibly up to 100 trolleys) will be time consuming. Facilities for handling the loading and unloading of potentially thousands of pieces of hold baggage and freight must be developed and supported to ensure a required level of service.

2.1.5 **Arrivals.** To maintain current maximum queuing times, the numbers of desks available for passport control must be increased, or new technologies must be deployed in order to expedite the flow of passengers and goods, whilst maintaining satisfactory border control checks. Additionally, given the passenger disembarkation rates that might ensue where three (3) contact bridges are utilized, pre-inspection queuing areas will likely need to be enlarged to accommodate greater numbers of passengers awaiting inspection.

2.1.6 **Departures.** The number of security checkpoints and associated x-ray machines in use must also be increased in order to maintain current service levels, and to prevent an unacceptable level of congestion and delay from being introduced into the outbound passenger flow.

2.2 Further developments

2.2.1 The next series of the A380 may carry up to 650 passengers. Each incremental increase in the number of passengers boarding or deplaning from this aircraft will have a direct impact on the terminal's ability to facilitate the movement of passengers and their goods through the airport.

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