



## **FACILITATION (FAL) DIVISION — TWELFTH SESSION**

**Cairo, Egypt, 22 March to 2 April 2004**

### **Agenda Item 5: Modernizing airport facilities and service delivery systems**

#### **NEW LARGE AIRCRAFT – SECURITY AND FACILITATION CHALLENGES**

(Presented by the Secretariat)

#### **1. INTRODUCTION**

1.1 The Airbus A-380 is scheduled to enter into commercial service in 2006. Compared to the largest aircraft currently in regular commercial service, the Boeing 747-400 carrying 350 to 400 passengers, the Airbus A-380 is capable of carrying 555 to 800 passengers. Its wingspan is 79.8 metres (250 feet), 50 feet wider than that of the B-747 and, with a take-off weight of up to 560 tonnes, it outweighs the B-747 by approximately 150 tonnes. It is able to upload over 300 000 litres of fuel, giving it a potential range of over 7 000 nautical miles which opens up a range of non-stop options, overcoming some current scheduling constraints. Initially, it is expected to serve a limited number of major destinations but that list will probably grow rapidly.

1.2 This aircraft will require special handling by aerodromes. For the introduction of such large aircraft, reconsideration of the associated security practices will be required, including implications of the inevitable space limitations at existing aerodromes. The significant increase in seating capacity of these aircraft raises some important pre-boarding, boarding/deplaning and in-flight security and facilitation issues. It is timely to reconsider some of the long-accepted, basic concepts and practices of passenger and baggage processing. To gain passenger acceptance, this means no extended delays in passenger processing. A major question in the future will therefore be the preparedness of airports to receive large aircraft, in accordance with the provisions of Annexes 14 (*Aerodromes*), 17 (*Security*) and 9 (*Facilitation*).

#### **2. SECURITY AND FACILITATION ISSUES**

##### **2.1 Impact on check-in areas**

2.1.1 A significant increase in the number of passengers arriving and departing together through one area will have an impact on each location. The effect could be similar to two B-747s arriving or departing at the same time, at the same gate or check-in area.

2.1.2 It is estimated that such a large number of passengers would generate 1 200 to 2 000 pieces of baggage to be checked. Arrangements will need to be made for shared-use terminal facilities to accommodate this requirement. Larger numbers of passengers in the check-in and pre-boarding areas place

greater demands on passenger service staff. Issues such as handling difficult or unruly passengers in the event of unforeseen delays, or more serious incidents, would need to be considered.

## **2.2 Passenger and baggage screening**

2.2.1 It is undesirable to have such large numbers grouped together, both from a security point of view and the potential for passengers' adverse reactions. Further delays and unnecessary restrictions must be reduced or eliminated.

2.2.2 A question arises whether traditional screening methods would manage to process such a large number of passengers in a timely fashion. A simple calculation based on the average time to process a passenger, the estimated number of passengers and an acceptable pre-boarding cycle will dictate the number of screening units which would be required at the check-in area.

2.2.3 Clearly, there is a need to reduce the dependence on individual physical checking. Could a two-tier inspection system with higher-risk passengers, including potentially unruly ones, being given a second and more thorough processing, help to solve the problem? This would require a much higher degree of cooperation and exchange of information between authorities and operators globally, but it could lead to a much better use of resources.

2.2.4 Filtering out of potentially unruly passengers may arguably acquire a greater significance on extremely large aircraft when compared to smaller ones. Statistically, there is a greater chance for an incident to occur which would impact on a larger number of people.

2.2.5 Amendment 10 to Annex 17 requires the certification and training of security staff. Will there be enough staff to meet these increased requirements? What would be the impact on peak-hour operations? Some better advance processing or a different approach could ease this requirement.

2.2.6 Similar challenges will arise with respect to immigration and customs clearance of inbound passengers. Staffing increases cannot be assumed. Progressive processes based on advance information and self-service, automated systems need to be installed.

## **2.3 Baggage management**

2.3.1 Annex 17, Standard 4.4.8 requires 100 per cent baggage screening by 1 January 2006. Given the likely quantity of baggage to be screened, this will require faster and more reliable screening equipment, which raises the question as to whether it can be achieved at a price that airports, airlines and their customers can afford. In the absence of any significant improvement in the processing rate, long delays on the ground can be expected to dilute the productivity advantage of these new aircraft. The methods of screening, recognizing the physical limitations of the equipment as well as space and time constraints, will need to be reviewed.

## **2.4 Increased passenger risk**

2.4.1 A predictably larger number of passengers arriving or being processed at any known time for a particular flight on a new large aircraft may pose a tempting target to terrorists. This could include increased waiting lines both inside and outside of secure areas, including parking areas, where an attack could be made with fewer risks of detection.

## **2.5 Sterile areas**

2.5.1 Once security-checked, a large number of passengers must be kept isolated from inbound passengers and external threats. Suitable combinations of pre-boarding lounges will be needed and this

requirement could pose a problem for operators, which may be further aggravated in the case of technical or weather delays.

2.5.2 Unruly passengers in a crowded area with many hundreds of others can pose a serious problem. Staff will now require additional skills in crisis management and/or negotiation in order to respond to such incidents in a timely manner.

## **2.6 Embarkation issues**

2.6.1 Moving such large numbers onto and off the aircraft will also present a challenge to ground handling staff. This will be influenced by the aircraft class configuration and the number of available loading bridges. Where apron or stand capacities limit access by new large-body aircraft (remembering the significantly increased wingspan), dedicated stands or areas may be required. Such predictability may not always be welcomed by the security authorities which may in turn impose scheduling constraints. When unforeseen delays arise that block dedicated stands, use of alternative facilities will slow or complicate passenger boarding or deplaning, which in turn could stretch resources and pose security questions.

## **2.7 Pre-flight security screening**

2.7.1 Pre- and post-flight aircraft security screening must also be considered. With significantly larger aircraft, more trained, security-cleared screeners will be required. In addition, as with all other aircraft, large-body aircraft will need to be kept sterile until boarding begins.

## **2.8 Aircraft parking areas**

2.8.1 Apron space restrictions may require dedicated parking areas, possibly remote, posing their own enhanced security challenges. Aerodrome layout may dictate alternative and predictable taxiing routes that could rapidly become known to terrorists, making an attack easier. Parking sites would need to be carefully selected since an aircraft with an 80ft (25.6 m) tail will be easily identifiable.

## **2.9 In-flight**

2.9.1 Increasing the number of passengers raises the question of how they will react to any form of incident or pressure, including delays, bad weather or unruly passengers. The risks will most likely increase in proportion to the numbers of passengers carried. With the potential for 200 upper deck passengers, what implications would there be to handling an emergency of a security nature?

2.9.2 How many sky marshals will be required in a 550- to 800-seat aircraft, and would their role be the same as in smaller aircraft at present? How would the flight crew now be constituted? What would the role of cabin staff be? What sort of training would be required?

2.9.3 Additional numbers of passengers would increase the frequency of unforeseen events and companies would wish to reduce the incidence of medical emergency diversions. On-board facilities away from passenger view may be required. What sort of training or level of qualification would the first caregivers require, and would this be to internationally agreed standards? Would they be indemnified against prosecution, and what special equipment would be required?

2.9.4 Restraint of unruly passengers assumes greater importance with larger numbers of passengers. In such an environment, a disturbed passenger could cause a considerable amount of trouble for fellow passengers and crew. Powers of restraint would be required and perhaps another secure area to detain that person.

**2.10 Threat posed by man-portable air defence systems  
(MANPADS)**

2.10.1 The threat posed by MANPADS is increasing and new large aircraft could pose a huge and attractive target. With its gross take-off weight and fuel capacity, the potential exists for massive destruction in the unfortunate event of an incident in the vicinity of a major city.

**3. ACTION BY THE DIVISION**

3.1 The Division is invited to exchange views on this subject and recommend that the challenges posed by deployment of the new large aircraft be taken into account when developing/amending the Standards and Recommended Practices contained in Annex 9 as well as Annex 7.

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