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CAR/SAM REGIONAL PLANNING IMPLEMENTATION GROUP (GREPECAS)
First Meeting of the GREPECAS Aviation Security Committee (AVSEC/COMM)
Passenger/Cabin Baggage Screening Task Force (AVSEC/PAX/BAG/TF/1)
Montego Bay, Jamaica, 31 January- 1 February 2008

Agenda Item 1: PAX/BAG Screening Systems
1.1 PAX Screening Systems

Passenger/Cabin Baggage Screening Checkpoint Design and Staffing

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

SUMMARY

Passenger and cabin baggage screening is one of the key front line security measure that helps ensure the security of international civil aviation.

This paper aims to discuss best practices at passenger and cabin baggage screening checkpoints with regards to layout, number of checkpoint, equipment and staffing

Further, it is important to remind that while security is the main focus at the cabin baggagescreening checkpoint, facilitation and throughput consideration need to be addressed as well.

References:

- IATA Airport Development Reference Manual (ADRM) **(Appendix)**

1. Introduction

1.1 Screening and searching of passengers and their baggage is an essential and basic part of aviation security. States and air carriers have a responsibility to make sure that people and baggage boarding the aircraft will not decrease the safety and security of a flight.

1.2 In order to have efficient passenger and cabin baggage screening, it is important that screeners can fulfill their duties in a working environment that provides the necessary amount of equipment as well as the proper equipment in optimal operational conditions.

1.3 Further, having appropriate staffing will ensure that the screening personnel will be able to perform their duties to the best of their abilities without feeling over-worked or over-pressured to focus on passenger processing time rather than prohibited items detection.

2. Screening Point Layout

2.1 The screening checkpoint should represent the division between landside and airside. The area beyond the screening point should only be accessible to passengers, air carrier staff and authorised personnel. The airside should be sterile of prohibited objects.

2.2 If the design of the airport permits, the screening checkpoint should be centralised for all flights at a particular terminal.

2.3 If possible, a screening point should be reserved for cabin and flight crews and authorised visitors.

2.4 VIPs should be screened in a special area reserved for them. All VIPs, with the exception of Heads of State, should undergo screening.

2.5 There should be sufficient screening checkpoints to permit the airport to cope with peak periods. When conceptualizing screening checkpoints, this number along with peak traffic should be taken into account. (Please refer to **Appendix** for more details)

2.6 Congestion should be anticipated and the appropriate cordons to create a snake queue, should passenger volume increase, should already be in place. Long single file waiting lines are to be avoided as they create the appearance that the waiting period will be excessive. Congestion at the screening checkpoint should be the exception rather than the norm.

3. Equipment

3.1 All screening checkpoints should have the following screening equipment:

- Walk-Through Metal Detectors (WTMDs): They should be adequately calibrated to avoid too many false-positives yet be able to detect potentially dangerous metal objects. WTMDs should be tested regularly. Prior to installation it should be verified that there are no structural components that could interfere with the screening equipment.
- X-ray machine for carry-on baggage: each station should have an X-ray machine where all carry-ons and all loose objects carried by the passengers are to be placed.
- Hand-Held Metal Detector (HHMD): for secondary screening of passengers who have triggered the alarm at the WTMD.
- Explosive Trace Detection (ETD) equipment: To verify if carry-on baggage has explosive traces.
- Security Staff: For hand searches of carry-on baggage when there is doubt about the contents and for hand searches of passengers when they trigger both WTMDs and HHMDs.

3.2 For all pieces of equipment, it is important that brand name and model number are not visible to the public and passengers. Strengths and weaknesses of screening equipment are readily available. It can be easy for potential perpetrators to find a way to elude the equipment used by a certain airport if the name and model are visible. Any security equipment must meet the minimum specifications of the appropriate national authority.

4. Staffing

4.1 Staff employed at screening checkpoints need to be carefully selected following stringent requirements and adequate training implemented by the appropriate national authority. At a minimum, a screening checkpoint should be staffed by the following:

- Travel document/ticket checker: located at the entrance to the screening checkpoint, makes sure only ticketed passengers enter the screening area. Should also make sure that passengers are at the right location. These staff members should be trained in passenger risk assessment to identify which passengers should be subjected to increased screening measures. Training for these staff members does not need to be the same as screening checkpoint employees. Moreover, they can be employed by a different (often the air carrier) organisation than screeners.
- X-ray loader: makes sure baggage is appropriately loaded on the conveyor belt. Will also make sure that all electronic items (laptop computers, cameras, etc.) are removed from main carry-on baggage and put in another container for screening. Will also ask passengers to empty their pockets of loose metal articles.
- X-ray operator: reads the image projected by the X-ray machine and selects bags for searches that may cause a concern due to prohibited contents or unclear images. The X-ray operator should not stay in his/her position for more than 20 minutes.
- Bag searcher: manually searches the bags signalled by the X-ray operator. The number of X-ray operators/bag searchers should be such that a rotation can be performed without slowing the screening process.
- Passenger searcher: the number of searchers should be dependent on the passenger flow but there should be at a minimum two people, one of each gender. They are responsible for secondary screening of passengers who trigger the WTMD.
- Explosive Trace Detection equipment operator: Responsible for swabbing baggage highlighted by the X-ray operators for explosive trace components.
- Supervisor: Responsible for the overall efficiency of the screening checkpoint. Should not get involved with the operation of the screening equipment.

5. Security and Facilitation Balance

5.1 Security screening is a step that every passenger has to go through. When a person decides to travel by air, they expect that some time will have to be allocated to the various security measures.

5.2 However, in recent times, some States have been requiring screening measures that have obligated passengers to arrive a substantial time before the scheduled flight departure time.

5.3 Also, screening measures are not always customer friendly. The so-called hassle factor of flying has pushed many people away from flying. If the security process dissuades a significant number of potential passengers from flying, then the security process has accomplished one of the terrorist's major goals of negatively affecting a State's economic activity.

5.4 Amendment 11 to ICAO Annex 17 – *Security*, Recommended Practice 2.3 states: *Each Contracting State should whenever possible arrange for the security controls and procedures to cause a minimum of interference with, or delay to the activities of, civil aviation provided the effectiveness of these controls and procedures is not compromised.* In this context, airport authorities should aim to have layouts of screening checkpoints and procedures that favour passenger flow.

5.5 Management of the Security and Facilitation balance is a very important component of airport security measures and therefore screening procedures should be drafted with flexibility in order to ensure that the proper level of security is constantly being implemented no matter what the threat level may be.

6. Recommendations

The Passenger/Cabin Baggage Task Force is invited to:

a) note the guidance material on used to determine the number of passenger/cabin baggage security screener servers required
b) note the guidance material on the various security equipment that is desirable to have a passenger/cabin baggage screening checkpoint in order to maximize screener performance
c) note the guidance material detailing the various post that should be fulfilled at passenger/cabin baggage screening checkpoints in order to ensure efficiency and effectiveness
d) take into account the balance between security, facilitation, passenger flow and the safety of passengers and staff when implementing passenger and carry-on baggage screening checkpoints.

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APPENDIX

Centralized Security Check Number Rules of Thumbs

The centralized security check system is also designed to process the check-in maximum throughput to ensure overall capacity balance.

The rule of thumb is used to determine the number of security servers required. The following procedure is used:

A) Calculate the peak 10-minute check-in counters throughput.
B) Calculate the number of security check servers.
C) Calculate the maximum number of passengers queuing (Max # Q) assuming a single (bank) queue.

Step A) Calculate the peak 10-minute check-in counters throughput.
Peak 10-minute demand = #CIY * (600 / PTci) +%J
Where:

#CIY	=	number of economy class check-in servers assuming common use
PTci	=	average processing time at check-in in seconds
%J	=	% of business class passengers

Step B) Calculate the number of security check servers
#SC = Peak 10-minute demand from A) x (PTsc / 600)
Where:

#SC	=	number of security servers
PTsc	=	average processing time at security check in seconds

Step C) Calculate the maximum number of passenger queuing (Max # Q) assuming a single queue:
Max # Q = (MQT x #SC x 60) / PTsc
Where:

MQT	=	Maximum queuing time in minutes
#SC	=	number of security servers
PTsc	=	average processing time at security check in seconds

Example

A) Peak 10-minute check-in throughput
As calculated in the previous example, the 38 economy class desks plus the business class desks generate a peak 10-minute demand of 175 originating passengers. The average processing time is 12 seconds.
Peak 10-minute demand = #CIY x (600 / PTci) x (1+%J)
Peak 10-minute demand = 38 x (600/150) x (1.15)
Peak 10-minute demand = **175 passengers**

B) Number of security check servers
#SC = Peak 10-minute demand from A) x (PTsc / 600)
#SC = 175 x (12/600)
#SC = 3.5 = **4 servers**

C) Maximum number of passenger queuing (Max # Q) assuming a single queue at a maximum queuing time of 3 minutes

Max # Q = (MQT x #SC x 60) / PTsc
Max # Q = (3 x 4 x 60) / 12
Max # Q = **60 passengers**

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