



GM 14-38

CIVIL AVIATION AUTHORITY OF BANGLADESH

Guidance Manual

Integration of International Aviation Security (AVSEC) Measures into Planning, Designs and Constructions of New Facilities and alterations to Existing Facilities.



Version 2.0
11 August 2024

AERODROME STANDARD DIVISION

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on

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into Planning, Designs and Constructions of New Facilities and alterations to
Existing Facilities.**

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REVISION HISTORY

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FOREWORD


CAR-84; Rule 282 sub-rule (2) (d) and ANO-14 VOL-I, Art 1.5.4 require that aerodrome operator ensure the integration into the design and construction of new facilities and alterations to existing facilities at an aerodrome the architectural and infrastructure-related requirements for the optimum implementation of international civil aviation security measures.

An Aerodrome Operator is expected to comply with the above mentioned requirements. There may be circumstances where compliance of requirements by the Aerodrome Operator becomes difficult because of constraints of trained manpower, training facilities and/or other administrative formalities. These situations require CAAB to establish a guidance manual.

This Guidance Manual is primarily intended as a reference for methods and techniques that can be used by the aerodrome operator in implementing the above mentioned requirements.

This guiding manual has been derived from the ANO-14 VOL-I, ANO-17 and other related ICAO documents.

This Guidance Manual is issued under the authority of Director (AS), CAAB and will become effective on the date mentioned in the document and also will supersede the Civil Aviation Circular (AC(AD) No.13; Edition-1) issued on 11 July 2011 on the same subject.


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Background

Airport security is an integral part of airport planning, design and operations, but its details must be restricted. At each airport a basic level of security is required under normal operating conditions. In addition, extra measures and procedures are required during periods of heightened tension. These requirements will need to be determined at the earliest possible stage in the preparation of plans or designs. Consultation with airport security authority/officials will be essential in order to assure that all security requirements are taken into account. In order for airport security to be effective, a systems approach is required and this includes the basic design of the airport. All of the measures listed in this GM need not be implemented at every airport, but they should be considered against the level of security which it is desired to achieve. They should be implemented in such a way as will cause a minimum of interference with, or delay to, passengers, crew, baggage, cargo and mail. It should be recognized that the airport design is relatively inflexible once the structures are completed and should the security requirements become greater in future, it may be difficult, if not impossible, to modify the buildings and structures at a reasonable cost. Concurrently with determining the level of security to be provided, there is a need to define the areas on the airport to be protected. As a minimum, this would include the airside, but at some airports, protection of the entire airport property may need to be considered. In addition, other functions vital to air navigation which may not be located on the airside, such as air traffic services, radio navigation aids, fuel storage areas, water and electrical power supplies, shall also be protected.

1. Introduction:

This Guidance Manual (GM) has been developed to assist aerodrome operators to ensure that international aviation security measures are integrated into any planning design and construction of new facilities and alteration to existing facilities at the Aerodrome for the optimum implementation of security of air transport. The protection of the airport can be achieved through a combination of physical security measures, systems and operations. The facility should be designed in such a fashion that it accommodates all the elements that will make up the response to a major incident.

In order to achieve a high degree of sustainable performance, it is necessary to apply a multilayered security system combining principles, procedures, programs, technologies and counter-measures to form overall 'system of systems' approach to aviation security.

2. Purpose:

Purpose of this GM is to provide guidance to implement security related provisions of the National Civil Aviation Security Programme (NCASP) into the design and construction of new facilities and alteration to existing facilities at the airports. (Ref: CAR 1984, Part- XVII, Sub-rule 282(2) (d) & ANO 14 Vol I Art. 1.5). This GM has been developed to guide aerodrome operators in ensuring that aviation security measures are integrated into the planning, design and construction of new aerodrome facilities and the alteration to existing facilities at an Aerodrome, for the optimum implementation of aviation security of air transport. The protection of the airport can be achieved through a combination of physical security measures, systems and operations. The aerodrome should be designed in such a way that it accommodates all the security elements that will

make up, in the response to a major incident. In order to achieve a high degree of sustainable performance, it is necessary to apply a multi layered security system combining principles, procedures, programs, technologies and counter-measures to form an overall ‘system of systems’ approach to aviation security. An Acceptable Means of Compliance (AMC) is not intended to be the only means of compliance with a regulation, and consideration will be given to other methods of compliance that may be presented to the Authority.

3. Applicability:

Following recommended guidelines are provided for consideration by Aerodrome user- agencies (aerodrome operators, aircraft operators, airport tenants), airport planners, consultants, designers, architects and engineers engaged in renovation and planning, design or construction projects of new airport facilities within the People’s Republic of Bangladesh.

4. General Guidelines:

4.1. Airport security is an integral part of airport planning and operations, but details must be restricted. As a result, to ensure the effective implementation of the requirement for aerodrome operators to ensure that international aviation security measures are integrated into any planning, design and construction of new facilities and alteration to existing facilities for detailed planning data.

4.2 At each airport a basic level of security is required under normal operating conditions. In addition extra measures and procedures are required during periods of heightened tension. These requirements will need to be determined at the earliest possible stage in the preparation of plans or designs. Consultation with airport security authority will be essential in order to assure that all security requirements are taken into account.

4.3 In order for security to be effective, a system approach is required and this includes the basic design of the airport. All of the measures listed in this Guidance Manual (GM) need not be implemented at every airport, but they should be considered against the level of security which it is desired to achieve. They should be implemented in such a way as will cause a minimum of interference with, or delay to, passengers, crew, baggage, cargo, mail & other matters related to airport security. It should be recognized that the airport design is relatively inflexible, once the structures are completed and should the security requirements become greater in future, it may be difficult, if not impossible, to modify the buildings and structures at a reasonable cost.

4.4 Concurrently with determining the level of security to be provided, there is a need to define the areas on the airport to be protected. As a minimum, this would include the air side, but at some airports, protection of the entire airport property may need to be considered. In addition, other functions vital to air navigation which may not be located on the air side, such as air traffic services, radio navigation aids, petroleum storage areas, water and electrical power supplies, will also need to be protected.

4.5 The protection of the airport can be achieved through a combination of physical security measures, systems and operations. This Circular provides guidance in designing security system into airports; specifically, on the consideration of security aspects in the design and construction of new facilities and alteration to existing facilities at the airports.

4.6 For consideration of the above mentioned guidelines, following points shall be taken into consideration:-

4.6.1 Passenger Buildings - Inspection/Screening of Persons:

4.6.2 The most important security consideration in the design of passenger buildings is that it should not be possible for unauthorized persons to pass from the landside to the air side. This requires that access from public areas of the building to operational areas including baggage and cargo areas be strictly controlled.

4.6.3 In this context, adequate provisions must be made for the inspection/screening of passengers and their cabin baggage. For example, adequate space must be provided to separate X-ray devices from walk-through gate-type metal detectors by a minimum of 1 m as well as to separate electromagnetic security equipment from other airport equipment that will generate electrical fields which may adversely affect the operating efficiency of security equipment. This precaution will equally apply to ducts and cable runs provided for security equipment.

4.6.4 Passenger inspection/screening preferably should not take place in the immediate passenger boarding area or near the aircraft door. A preferred location would be a sufficient distance from the aircraft boarding area so as to permit adequate time for security procedures to be initiated in the event of a security alert. The Security Manual for Safeguarding Civil Aviation Against Acts of Unlawful Interference describes the basic plans for the inspection/screening of passengers at gates, hold areas and concourses, and sets out the advantages and disadvantages of each. A room or other facility should be provided in close proximity to each inspection/screening point where manual or other special search of persons may be carried out in privacy.

4.6.5 Regardless of the plan selected it is essential that the design provides for:

- a) The physical separation of persons who have been subjected to inspection/screening from others at the airport; and
- b) the prevention of unauthorized access from land side or air side to passengers waiting in sterile areas prior to boarding an aircraft, after they have been inspected/screened.

4.7 VIP Lounges:

VIP lounges should be so designed that they do not permit unauthorized land side/air side access. Persons boarding an aircraft from a VIP lounge shall be subjected to the passenger and cabin baggage inspection/ screening process.

4.8 Visitors' Observation Areas:

Consideration may need to be given to the desirability of providing observation areas for the public to overlook aprons. If observation areas are to be provided, consideration should be given to enclosing them with glass or providing for surveillance by security guards. In cases where persons in the observation area would be able to pass material to departing passengers, the observation area should be made sterile by subjecting everyone to inspection/screening prior to being permitted access.

4.9 Airport Emergency Operation Center and Security Services Center:

The airport design must provide for an Airport Emergency Operations Centre and a Security Services Centre. Security Services Centre may preferably be located in the passenger terminal building.

4.10 Baggage Handling Facilities:

(a) Adequate space will be required to enable the airline operator to establish procedures to ensure that only checked baggage for which a passenger is on board will be allowed to be transported on the aircraft. The exception to this would be if the airline operator has authority for some other form of security control for unaccompanied baggage, such as X-rays.

(b) Another feature, which should be considered in terminal design in relation to baggage handling, is the ability to control access from landside to airside through the baggage conveyor system. If direct access is possible, a method of locking or otherwise controlling the access areas should be provided.

4.11 Many States have prohibited the use of off-airport check-in or curbside baggage check-in. Terminals should be designed in such a way that checked baggage can be handled in the normal fashion if it is necessary to prohibit off-airport or curbside check-in.

4.12 Storage of Mishandled / Misrouted baggage

Consideration will need to be given to providing a secured storage area in the passenger terminal building where mishandled baggage may be stored until forwarded, claimed or disposed of.

Each baggage storage facility should be constructed in a manner to minimize the effects of an explosion occurring from items being handled, stored or contained in the baggage.

Consideration should be given to providing a secured storage area in the passenger terminal building where mishandled baggage may be stored until forwarded, claimed or disposed of. Provision should also be made for screening by trained staff of all items by X-ray or hand search before they are accepted for storage. Airside and security restricted areas should be designed and constructed to prevent passage of articles from non-sterile areas. For example, links or connections among plumbing, air vents, drain, utility tunnels, or other fixtures in restricted security area restrooms and restrooms in non-sterile areas should be avoided to limit the possibility of articles being passed from one area to the other. When planning the construction of nonrestricted or public access suspended walkways or balconies over or adjacent to restricted security areas, it is critical to ensure that they do not facilitate the passing of items into those areas.

4.13 Physical Separation of Arriving / Departing passengers

The design of the passenger terminal building should provide for the physical separation of arriving passengers from departing passengers in the area after the inspection/screening point. There must be no possibility of mixing or contact between passengers who have been inspected/screened and other persons who have not been subjected to that process.

4.14 Cargo Handling Facilities :

Special security facilities may be required for cargo. In certain situations it may be necessary to provide security controls for cargo, such as planned delays or physical or electronic searching. Airport planning should consider special requirements for cargo.

4.15 Airside Security:

4.15.1 Security of operational areas, where aircraft may be present, such as runways, taxiways and aprons will be physically separated from public areas. In any case, separation should be ensured between public and operational areas, although the extensive area required for the latter and the need for public access to passenger terminal buildings makes this difficult to achieve. No precise distances can be given but the greater the separation, the higher the level of security. A particular problem may be runways and taxiways which overpass public roads. Where such overpasses are planned, special measures may be needed to restrict access to runways or taxiways at this point and to counteract the possibility of sabotage to the structure of the bridge. Other potential danger areas are the approach and departure paths to runways where aircraft fly at low altitude. If it is considered necessary to protect these areas, it will be expedient to extend the airport boundaries during the initial design of the airport to include them in the land acquired as airport property.

4.15.2 To adequately protect air operation areas from unauthorized access, it is important to consider physical security measures including fencing or other barriers, lighting, locks, alarms, guards and guard houses in the planning process of air side facilities.

4.15.3 Buildings may be used as a part of the physical barrier and incorporated in the fence line provided measures are taken to restrict unauthorized passage through the buildings. Care should also be taken to ensure that the roofs of the buildings do not provide a possible route for unauthorized access to the air side. For additional security, flood- lighting of the perimeter fencing and/or the installation of an alarm system may be considered.

4.16 Airport Roads

Roads located on the air side should be for the exclusive use of airport personnel. Separate means of access to public buildings not involving travel on the airside will need to be provided for non-airport personnel. Perimeter roads around the air side area, normally just inside the airport fencing, shall be provided for the use of both maintenance personnel and security patrols.

4.17 Fencing:

(a) Physical barriers shall be provided to deter the access of unauthorized persons into non-public areas. These should be permanent barriers and, normally, fencing is the most suitable means. Care must be taken to ensure that the provision of fencing does not conflict with the operational requirements of the airport. Access points shall be made in the fence to allow the passage of vehicles and persons; the number of access points should be kept to a minimum and equipped so that they can be securely closed whenever required. If a gate is used frequently, a security guard will be required, together with a shelter for protection against the elements. The shelter should be designed in such a way so as to permit maximum visibility over the immediate area of the gate and to provide easy access for the guard to carry out the duties of inspecting vehicles and their contents. When night use is anticipated, the area surrounding the gate should be illuminated. Discreet communications should be provided between the security post and the airport security services office as well as a discreet and audible alarm by which assistance may be summoned in the event of emergency. Security of an

airport will require that underground service ducts, sewers and other structures which provide access to the air side or other restricted area be barred. If access to these facilities is required for maintenance purposes, locked doors or gates should be provided.

(b) Airport perimeter fence may be any of the following types, based on safety and security risk assessment:

(i) Chain link fencing- steel wire woven together in a grid like pattern and should be weatherproof coating to slow down deterioration and rusting of the wire.

(ii) Palisade fencing- made of materials such as expanded metal or welded mesh closely spaced vertical steel poles.

(iii) Concrete slab/block- Concrete slab of minimum height of 8 feet or 2.44 meters.

(c) The feature of the perimeter fence shall include but not limited to the following:

(i) Height - minimum height of 8 feet or 2.44 meters above ground level;

(ii) Orientation - construct in a straight line for ease of surveillance;

(iii) Visibility - the whole of the fence should be visible for patrolling;

(iv) Clear Zone - establishes a clear zone of 5 meters on both sides of the fence;

(v) Anti-Climb - barbed wire or concertina should be used at the top of the fence;

(vi) Gates - Constructed to a comparable standard to the fence;

(vii) Lighting - illumination for deterrence and effective surveillance; and

(viii) CCTV- installed in conjunction with the intruder detection system.

(ix) Perimeter road is required for ease of patrolling and security signage to deter intruder

4.18 Access Gate Requirement

The minimum requirements for Access Gates should include:

(a) standard security gate;

(b) drop arm barrier/speed breakers;

(c) adequate shelter to withstand weather conditions;

(d) guard house with necessary conveniences;

4.19 Security Lighting:

(a) Security lighting can offer a high degree of deterrence to a potential intruder in addition to providing the illumination necessary for effective surveillance either directly by guards or indirectly through CCTV system. It further helps:

(i) To allow guard to see intruders before they reach their objectives

(ii) Conceal the guards from intruders

(iii) Deter intruders or hinder them in their purpose.

(b) The various types of security lighting shall be as described such as:

(i) Perimeter lighting is designed to cast a strong light on the perimeter. This may be provided by overhead lamps or by low-mounted lamps that will create a glare effect to dazzle and deter intruders. If the latter are used, care should be taken to ensure that they do not create a nuisance or hazard to aircraft;

(ii) Area lighting is intended to illuminate areas inside the perimeter through which intruders may cross in order to reach their objectives. This increases the guards' ability to detect intruders and acts as a powerful deterrent. Ideally, the illumination shall be even and without shadows. Every part of each area to be illuminated shall be lit by at least two lights to guard against lamp failure;

(iii) Local lighting shall illuminate those areas inadequately covered by area lighting and which might conceal an intruder. Small bulkhead lights, tough and resistant to interference, shall be used. Fluorescent or tungsten halogen lamps can be used as miniature floodlights. All dark spots shall be eliminated. Roofs, fire escapes and emergency exits shall be illuminated by such local lighting; and

(iv) Floodlighting shall be used to illuminate surfaces (e.g., buildings and fences), which intruders may pass in front of to reach their objectives. At the low illumination levels typical of security lighting, the eyes rely mainly on the ability to recognize outline shapes. A moving silhouette can readily

4.20 Isolated Parking Position

4.20.1 Where practicable an isolated parking position should be designated to which aircraft suspected of carrying explosive or incendiary devices may be taken. It should be located at the maximum distance possible at least 100m from other aircraft parking positions, buildings or public areas and the airport fence. If taxiways and runways pass within this limit, they may have to be closed for normal operations when a "suspect" aircraft is in the area. The isolated parking position may also be used to handle unlawfully seized aircraft which land at an airport and require servicing and attention. Care should be taken to ensure that the position is not located over underground utilities such as gasoline, aviation fuel, water mains, or electrical or communications cables.

Where such a designation is not possible, the aerodrome control tower shall be advised of an area or areas suitable for the accomplishment of above mentioned objectives.

4.20.2 Facilities for the examination of baggage, cargo, mail and stores removed from an aircraft subjected to an act of unlawful interference should be provided as part of the isolated parking position and consideration given to the provision of shelter in the case of inclement weather.

4.21 General Aviation Parking Areas

It is advisable to designate a parking area for general aviation aircraft separate from that used by commercial air transport aircraft. This practice safeguards against the possible use of a general aviation aircraft as a means of circumventing security control at the airport.

4.22 Explosive Holding Area

A holding area should be provided for any suspicious articles found on the airport or on an aircraft. It should be located in a remote area, and in order to allow bomb disposal experts to deal with any devices, the provision of a shelter, bunker or building is recommended. This should be constructed in such a way that vehicles used to transport explosive devices can be driven inside for unloading.

5. Procedures for application of this Guidance Manual.

5.1 Construction of New Airport or alteration to existing facilities

In case of planning, designs and construction of a new airport or any major new facility or alteration to existing facilities, Chairman, CAAB shall form a committee comprising of-

- 1) Member (Ops. & Plan.), CAAB HQ.
- 2) Member (FSR), CAAB HQ.
- 3) Member (ATM.), CAAB HQ.
- 4) Member (AVSEC.), CAAB HQ.
- 2) Chief Engineer, CAAB HQ.
- 3) Director (Aerodrome Standard), CAAB HQ.
- 4) Director (ATM), CAAB HQ.
- 5) Director (CNS), CAAB HQ.
- 6) Director (Planning), CAAB HQ.
- 7) Representatives from concerned aerodrome,
- 8) Representative from concerned aircraft operator(s),
- 9) Representative from concerned tenants (if applicable),
- 10) Representative(s) from any other concerned organization (if applicable).

5.2 Functioning of the Committee

- a) The committee shall verify the proposed construction / alteration plan against this manual,
- b) If the proposed plan satisfies the security requirements as per this manual and at the same time does not conflict with the requirements for the provision of other essential/ operational services then the committee will recommend the plan for approval by Chairman, CAAB.
- c) If the proposed plan does not satisfy the security requirements as per this manual, including the requirements for the provision of other essential / operational services then the committee will advise the changes to be made in the plan and submit to Chairman, CAAB for his approval.
- d) After approved by Chairman, CAAB, the proposal shall be sent back to the applicant / operator for onward action / correction and resubmit, as applicable.