


***ETHIOPIAN CIVIL AVIATION AUTHORITY***  
***AERODROME SAFETY AND STANDARDS DIRECTORATE***



***ADVISORY CIRCULAR ON INTEGRATION AND  
OPTIMIZATION OF AVSEC MEASURES IN THE  
DESIGN AND CONSTRUCTION OF AERODROME  
FACILITIES***

March, 2019

	<b>ETHIOPIAN CIVIL AVIATION AUTHORITY</b> <b>Aerodrome Safety And Standard Directorate</b>	Document No.: <b>ECAA/AC/AGA/034/2019</b>	
Title: <b>Advisory Circular on Integration and Optimization of AVSEC Measures in the Design and Construction of Aerodrome Facilities</b>		Issue No.: 0	Page No.: Page 2 of 12

## **PREAMBLE**

**WHEREAS**, it is desirable to consolidate and modernize the aviation Advisory Circular to bring them to international standards,

**WHEREAS**, it is important to set the Advisory Circular as to how the regulatory, administrative, technical and supervisory activities of the Authority shall be performed in the one hand and setting the duties, obligations and standards that shall be respected by operators and aviation personnel,

**WHEREAS**, it is necessary, to provide detailed Advisory Circular for the administration of license, certification, investigation and enforcement of aviation laws.

**NOW THEREBY**, The Authority under its power given by Article 92/2 of the Civil Aviation Proclamation No. 616/2008 issued the following Advisory Circular.


### **1. SHORT TITLE**

This Advisory Circular may be cited as “**ADVISORY CIRCULAR ON INTEGRATION AND OPTIMIZATION OF AVSEC MEASURES IN THE DESIGN AND CONSTRUCTION OF AERODROME FACILITIES ECAA-AC-AGA034/2019**”

### **2. EFFECTIVE DATE**

This Advisory Circular shall come into force as of March 2019.

**Done at Addis Ababa, March, 2019**

	<b>ETHIOPIAN CIVIL AVIATION AUTHORITY</b> <b>Aerodrome Safety And Standard Directorate</b>	Document No.: <b>ECAA/AC/AGA/034/2019</b>	
Title: <b>Advisory Circular on Integration and Optimization of AVSEC Measures in the Design and Construction of Aerodrome Facilities</b>		Issue No.: 0	Page No.: Page 3 of 12

## 1. PURPOSE

Purpose of this circular is to provide guidance to implement security measures into the design and construction of new facilities and alteration to existing facilities at an aerodrome in line with the Civil Aviation (Security) Regulations and Ethiopian Civil Aviation Rules and standards.

## 2. REFERENCE

### 2.1 Ethiopian Civil Aviation Rules and Standards

### 2.2 Manual of Aerodrome Certification Procedures


### 2.3 Aerodrome Manual of Implementing Standards (MOIS)

The authority for setting policies and regulations on aerodrome rests with the DGCA (director general of the civil aviation authority). Aerodrome operators shall establish arrangements with the DGCA and other agencies responsible for coordinating aerodrome security matters in order to implement aerodrome security measures (such as control of access to the aircraft movement areas, aerodrome fencing and security lighting) in accordance with the standards and recommended practices of ICAO Annex 17 under the direction of the DGCA.

## 3. INTRODUCTION

This Advisory Circular has been developed to assist aerodrome operators to ensure that international aviation security measures are integrated into any 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.

	<b>ETHIOPIAN CIVIL AVIATION AUTHORITY</b> <b>Aerodrome Safety And Standard Directorate</b>	Document No.: <b>ECAA/AC/AGA/034/2019</b>	
Title: <b>Advisory Circular on Integration and Optimization of AVSEC Measures in the Design and Construction of Aerodrome Facilities</b>		Issue No.: 0	Page No.: Page 4 of 12

#### **4. APPLICABILITY**


These 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 federal democratic republic of Ethiopia.

#### **5. GENERAL GUIDELINES**

5.1 Airport security procedures and functions are integral part of airport planning, and operations. In this regard, in order to achieve effective implementation of the security requirements, aerodrome operators shall ensure that international aviation security measures are integrated into any design and construction of new facilities including alterations to existing facilities for detailed planning data.

5.2 At each aerodrome a basic level of security is required under normal operating conditions. In addition extra measures and procedures are required during periods of emerging threats. These requirements will need to be predetermined at the earliest possible stage in the preparation of architectural and engineering layouts and designs. Consultation with aerodrome authority will be essential in order to assure that all security requirements are taken into account before approval is made to the architectural or engineering drawings.

5.3 In order to effectively implement security measures, a systematic approach is required and this includes the architectural and engineering layout design of the aerodrome facilities. All measures listed in this Advisory Circular may not be required to be implemented at every aerodrome, but they should be considered against the level of security which is desired to be maintained. They should be implemented in such a way that will cause minimum interference with, or delay to, passengers, crew, baggage, cargo and mail. It should be recognized that the aerodrome design is relatively inflexible, once the structures are completed and should the security requirements become

	<b>ETHIOPIAN CIVIL AVIATION AUTHORITY</b> <b>Aerodrome Safety And Standard Directorate</b>	Document No.: <b>ECAA/AC/AGA/034/2019</b>	
Title: <b>Advisory Circular on Integration and Optimization of AVSEC Measures in the Design and Construction of Aerodrome Facilities</b>		Issue No.: 0	Page No.: Page 5 of 12

greater in future, it may be difficult, if not impossible, to modify the buildings and structures at reasonable cost.


5.4 Concurrently with determining the level of security to be provided, there is a need to define the areas on the aerodrome to be protected. As a minimum, this would include the airside, but at some aerodromes, protection of the entire aerodrome facility 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, petroleum storage areas, water and electrical power supplies, tunnels, ducts, will also need to be protected.

5.5 The protection of the aerodrome can be achieved through a combination of physical security measures, systems and operations. This AC 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 aerodromes.

## **6. SCREENING OF PERSONS AT THE TERMINAL BUILDING**

6.1 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;

6.2 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 walkthrough 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;

	<p align="center"><b>ETHIOPIAN CIVIL AVIATION AUTHORITY</b> <b>Aerodrome Safety And Standard Directorate</b></p>	<p>Document No.: <b>ECAA/AC/AGA/034/2019</b></p>	
<p>Title: <b>Advisory Circular on Integration and Optimization of AVSEC Measures in the Design and Construction of Aerodrome Facilities</b></p>		<p>Issue No.: 0</p>	<p>Page No.: Page 6 of 12</p>

6.3 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.

6.4 Passenger inspection/screening should explicitly separate domestic passengers from international passengers. The demarcation of passengers is required to be considered during the planning and design so that security measures and immigration operations are adequately enforced.


6.5 Consideration should be made to manage and streamline transfer passengers arriving at an aerodrome to ensure that they are smoothly guided to the transfer lounges before boarding aircraft. It is recommended that screening is conducted prior to boarding of connection flights.

6.6 Regardless of the plan selected it is essential that the design provide for:

- a) The physical separation of persons who have been subjected to inspection/screening from others at the aerodrome; 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.

## **7. SIGNAGES IN THE TERMINAL BUILDING**

The design and layouts should incorporate signage plans to guide passengers to different service areas such as boarding gates, shops, toilets, resting areas, smoking areas, bookshops etc. Normally, specific drawings shall be produced for assessment during the design stage.

	<p align="center"><b>ETHIOPIAN CIVIL AVIATION AUTHORITY</b>  <b>Aerodrome Safety And Standard Directorate</b></p>	<p>Document No.:</p> <p align="center"><b>ECAA/AC/AGA/034/2019</b></p>	
<p>Title:</p> <p align="center"><b>Advisory Circular on Integration and Optimization of AVSEC Measures in the Design and Construction of Aerodrome Facilities</b></p>		<p>Issue No.:</p> <p align="center">0</p>	<p>Page No.:</p> <p align="center">Page 7 of 12</p>

## **8. VIP LOUNGES**

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

## **9. 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.


## **10. 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.

## **11. BAGGAGE HANDLING FACILITIES**

11.1 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.

11.2 Another feature which should be considered in terminal design in relation to baggage handling is the ability to control access from land side to air side through the baggage conveyor system. If

	<b>ETHIOPIAN CIVIL AVIATION AUTHORITY</b> <b>Aerodrome Safety And Standard Directorate</b>	Document No.: <b>ECAA/AC/AGA/034/2019</b>	
Title: <b>Advisory Circular on Integration and Optimization of AVSEC Measures in the Design and Construction of Aerodrome Facilities</b>		Issue No.: 0	Page No.: Page 8 of 12

direct access is possible, a method of locking or otherwise controlling the access areas should be provided.

11.3 Many States have prohibited the use of off airport check-in or curb-side 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 curb-side check-in.

## **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.

## **13. PHYSICAL SEPARATION OF ARRIVING AND 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.


## **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 handling.

## **15. AIRSIDE SECURITY:**

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.



	<p align="center"><b>ETHIOPIAN CIVIL AVIATION AUTHORITY</b> <b>Aerodrome Safety And Standard Directorate</b></p>	<p>Document No.: <b>ECAA/AC/AGA/034/2019</b></p>	
<p>Title: <b>Advisory Circular on Integration and Optimization of AVSEC Measures in the Design and Construction of Aerodrome Facilities</b></p>		<p>Issue No.: 0</p>	<p>Page No.: Page 9 of 12</p>

No precise distances can be given but the greater the separation, the higher the level of security. A particular problem may be runways and taxi ways 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.

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.


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.

## **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.

## **17. FENCING**

Physical barriers should 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

	<b>ETHIOPIAN CIVIL AVIATION AUTHORITY</b> <b>Aerodrome Safety And Standard Directorate</b>	Document No.: <b>ECAA/AC/AGA/034/2019</b>	
		Title: <b>Advisory Circular on Integration and Optimization of AVSEC Measures in the Design and Construction of Aerodrome Facilities</b>	Issue No.: 0

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.

Lighting system and dedicated perimeter intrusion detection system (PIDS) or Closed Circuit Television (CCTV), normally forming part of the perimeter security measures, may be installed.


## **18. ISOLATED PARKING POSITION**

18.1 An isolated parking position will need to 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.

18.2 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.

## **19. AIRCRAFT PARKING AREAS FOR GENERAL AVIATION**

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.


	<b>ETHIOPIAN CIVIL AVIATION AUTHORITY</b> <b>Aerodrome Safety And Standard Directorate</b>	Document No.: <b>ECAA/AC/AGA/034/2019</b>	
Title: <b>Advisory Circular on Integration and Optimization of AVSEC Measures in the Design and Construction of Aerodrome Facilities</b>		Issue No.: 0	Page No.: Page 11 of 12

## **20. 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.

## **21. AREA ALLOCATED FOR AIRCRAFT MAINTENANCE HANGARS**

Security measures should be made for areas allocated for aircraft maintenance hangars. The design of such areas may create interconnection with airside movement areas and characterized by movements of technical personnel and aircraft company officials working in the airside. It is important to provide screening/inspection operations to control authorized movements into the maintenance hangars.

	<b>ETHIOPIAN CIVIL AVIATION AUTHORITY</b> <b>Aerodrome Safety And Standard Directorate</b>	Document No.: <b>ECAA/AC/AGA/034/2019</b>	
Title: <b>Advisory Circular on Integration and Optimization of AVSEC Measures in the Design and Construction of Aerodrome Facilities</b>		Issue No.: 0	Page No.: Page 12 of 12

## Appendix A

### **Verification from Ethiopia's National Intelligence and Security Service (NISS)**

This Circular has been developed to assist aerodrome operators to ensure that international aviation security measures are integrated into any 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 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.

Finally aerodrome operators required having appropriate verification from Ethiopia's National Intelligence and Security Service (NISS) about international aviation security measures are integrated into any design and construction of new facilities and alteration to existing facilities at the Aerodrome for the optimum implementation of security of air transport.

  
.....  
**Wosanyesh Hunegnaw (Co.)**  
**Director General**  
**Ethiopian Civil Aviation Authority, Director General**





This document was created with the Win2PDF "print to PDF" printer available at <http://www.win2pdf.com>

This version of Win2PDF 10 is for evaluation and non-commercial use only.

This page will not be added after purchasing Win2PDF.

<http://www.win2pdf.com/purchase/>