

ETHIOPIAN CIVIL AVIATION AUTHORITY  
AERODROME SAFETY AND STANDARD  
DIRECTORATE

**Guidance on apron management service**


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## Contents

<b>Apron Management Service .....</b>	<b>2</b>
<b>1. GENERAL.....</b>	<b>3</b>
<b>2. WHEN SHOULD AN APRON MANAGEMENT SERVICE BE ESTABLISHED?.....</b>	<b>3</b>
<b>3. WHO OPERATES THEAPRON MANAGEMENT SERVICE? .....</b>	<b>5</b>
<b>4. RESPONSIBILITIES AND FUNCTIONS.....</b>	<b>6</b>
<b>4.1 Aircraft parking/docking guidance system.....</b>	<b>7</b>
<b>4.2 Marshalling service.....</b>	<b>7</b>
<b>4.3 TRAINING.....</b>	<b>Error! Bookmark not defined.</b>
<b>Appendix A.....</b>	<b>9</b>



	<b>ETHIOPIAN CIVIL AVIATION AUTHORITY AERODROME SAFETY AND STANDARDS DIRECTORATE</b>	REF.ECAA-AC-AGA028/2015
	<b>Apron Management Procedure Guidance</b>	

## 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 for Apron Management Procedure Guidance.NO.ECAA-AC-AGA028/2015

### 2. REPEAL AND INAPPLICABLE LAWS


No law, directive, order or practice shall, in so far as it is inconsistent with this Advisory Circular, be applicable with respect to matters provided for by this Advisory Circular.

### 3. EFFECTIVE DATE

This Advisory Circular shall come into force as of April/ 2015.



Done at Addis Ababa, April, 2015

  
Wosaryeteh Hunegnaw (Col.)  
Director General

# I. Apron Management Service

## 1. GENERAL

The air traffic control service at an aerodrome extends throughout the manoeuvring area, but no specific instructions relating to such a service cover the apron. Therefore apron management is required to regulate the activities and movement of aircraft, vehicles and personnel on the apron (Annex 14, Chapter 9).

There are a variety of different approaches to apron management which have been developed and which can, depending on the particular condition, accommodate the requirements of the aerodrome.

Apron management is an essential task at any aerodrome. However, the need to establish a dedicated apron management service is dependent upon three main operational factors. They are:

- a) the traffic density;
- b) the complexity of the apron layout; and
- c) the visibility conditions under which the aerodrome authority plans to maintain operations.

Generally, it is not practicable to exercise total control over all traffic on the movement area. However, in very poor visibility conditions it may be necessary to exercise such a control at the expense of capacity. Within the field of reasonable constraint, which varies according to conditions, safety and expedition depend upon aircraft and vehicles conforming to standard ground movement rules and regulations. The apron management must establish rules related to the operation of aircraft and ground vehicles on the aprons. These rules should be compatible with those for the manoeuvring area.

## 2. WHEN SHOULD AN APRON MANAGEMENT SERVICE BE ESTABLISHED?

Annex 14, Chapter 9, recommends that an apron management service be provided when warranted by the volume of traffic and operating conditions. Guidance on apron management and safety is given in the Airport *Services* Manual, Part 8, and Chapter 10.

It is not possible to define at what levels of traffic volume and under what operating conditions an apron management service should be established. Generally speaking the more complex the apron layout the more comprehensive an apron management service needs to be, particularly when taxiways are included in the apron area.

The decision whether or not to provide an apron management service at a particular airport must rest with aerodrome authority.

Most aerodromes will already have some form of apron management. This may simply be an area set aside for the parking of aircraft, with painted lines to guide pilots to self-manoeuvring aircraft stands. At the other end of the scale, the apron area may be a large part of the movement area with numerous nose-in stands, several terminals and complex taxiways forming part of the layout. A complex apron area such as this will need a comprehensive apron management service including radio communication facilities.

Aerodrome authorities must therefore consider what scope of management is needed for the activity on their apron areas to ensure the safe and efficient operation of aircraft and vehicles in close proximity. This is particularly important where low visibility operations are contemplated.

**❖ When considering what scope of management may be needed on an apron area, the following Points should be considered:**

- a) Is the apron area sufficiently large, complex or busy to merit a separate staff to manage it?
- b) What RTF facilities do the staffs need to exercise control over their own vehicles, airline vehicles and, if necessary, over aircraft using apron taxiways?
- c) If apron management staffs are required to exercise control over aircraft and vehicles on the apron area to ensure safe separation, then such staff should be properly trained and licensed and their legal authority clearly established.
- d) Will the apron management service issue its own instructions such as start up, push back, taxi
- e) Clearances, and stand allocation or will these be given by the ATS unit as an element of the apron management service?
- f) How will the various airline service vehicles be regulated on the apron as well as on airside roads serving aircraft stands? Is there a need for roads, controlled or uncontrolled, crossing apron taxiways?
- g) Who will be responsible for inspection, maintenance and cleanliness of the aprons?

- h) What size marshalling service, including leader van service (follow-me vehicles), is required to meet aircraft parking needs?
- i) Are low visibility operations contemplated at the aerodrome? If so what procedures need to be developed to ensure safety on the apron area?
- j) Are there procedures to cater for contingencies such as accidents, emergencies, diversion aircraft, and flow control when the stands are nearly all occupied, maintenance work, stand cleaning and security?

### **3. WHO OPERATES THE APRON MANAGEMENT SERVICE?**

Apron management services may be provided by the air traffic service unit, by a unit set up by the aerodrome authority, by the operator in the case of a company terminal, or by co-ordinate control between ATS and the aerodrome authority or operating company.

Some States have found that a preferred system of operating aprons has been to set up a traffic management control procedure in which a single unit takes over the responsibility for aircraft and vehicles at a pre-determined handover point between the apron and the manoeuvring area. Generally, the edge of the manoeuvring area represents the handover point. In any event, the handover point should be clearly indicated on the ground and on appropriate charts, for example the aerodrome chart, for the benefit of aircraft vehicle Operators. The apron management unit will then assume responsibilities for managing and co-ordination all aircraft traffic on the apron, issuing verbal instructions on an agreed radio frequency, and managing all apron vehicle traffic and other apron activities in order to advise aircraft of potential hazards within the apron area. By arrangement with the aerodrome ATS unit, start-up and taxi clearance to the handover point will be given to departing aircraft where the ATS unit assumes responsibility.

One form of the co-ordinate apron management service is where radio communication with aircraft requiring start-up or pushback clearance on the apron is vested in the air traffic service unit, and the control of vehicles -- is - the responsibility of the aerodrome authority or the operator. At these aerodromes, ATS instructions to aircraft are given on the understanding that safe separation between the aircraft and vehicles not under radio control is not included in the instruction.

The apron management service maintains close communication with the aerodrome control service and is responsible for aircraft stand allocation, dissemination of movement information to aircraft operators by monitoring ATC frequencies, and by updating basic information continuously on aircraft arrival times, landings and take-offs. The apron management service should ensure that the apron area is kept clean by airport maintenance and that established

aircraft clearance distances are available at the aircraft stand. A marshalling service and a leader van (follow-me vehicle) service may also be provided.

#### **4. RESPONSIBILITIES AND FUNCTIONS**

Whichever method of operating an apron management service is provided, the need for close liaison between the aerodrome authority, aircraft operator and ATS is paramount. The operational efficiency and safety of the system depends very largely on this close co-operation. The following items are of importance to both ATS and the aerodrome authority:.

##### a) Aircraft stand allocation

The aerodrome operator normally retains over-all responsibility for aircraft stand allocation although for operational convenience and efficiency a system of preferred user stands may be established. Instructions should clearly state which stands may be used by which aircraft or groups of aircraft. Where considered desirable, a preferred order of use of stands should be laid down. Apron management staff should be given clear guidance on the stand occupancy times to be permitted and the steps to be taken to achieve compliance with the rules. The responsibility for stand allocation may be delegated to an airline where that airline has a dedicated terminal or apron area.

##### b) Aircraft arrival/departure times

Foreknowledge of arrival and departure times scheduled, estimated and actual is required by ATS, apron management, terminal management and the operators. A system should be established to ensure that this information is passed between all interested parties as quickly and efficiently as possible.

###### a) Start-up clearances

Normally the ATC unit gives these. Where an apron management service operates its own radio communication on the apron area procedures will need to be established between the apron management service and the ATC unit to ensure the efficient co-ordination and delivery of such clearances.

###### b) Dissemination of information to operators

A system should be established to ensure the efficient distribution of relevant information between apron management, ATS and operators. Such information could include notification of work in progress, non availability of facilities and low visibility procedures.



c) Security arrangements

In addition to normal security arrangements there are security requirements which are of interest to many parties who operate on the apron. These would include contingency plans for such eventualities as baggage identification on the stand, bomb warnings and hijack threats.

d) Availability of safety services

The rescue and fire fighting services (RFF) are normally alerted to an incident on the movement area by ATS. However, at aerodromes where aircraft on the apron area are controlled by the apron management service, a communication system needs to be established to alert the RFF when an incident occurs in the apron area of responsibility.

e) Apron discipline

The apron management service will be responsible for ensuring compliance by all parties with regulations relating to the apron.

#### **4.1 Aircraft parking/docking guidance system**

The apron guidance system provided will depend upon the accuracy of parking required and the types of aircraft operating on the apron. The simplest form of stand guidance, where precise accuracy is not required, will comprise stand identification and centre line paint markings. Guidance on apron markings is given in the Aerodrome Design Manual, Part 4. The apron management service should monitor all paint markings to ensure that they are maintained in a clean condition to retain maximum visibility. Where more accurate parking/docking is required then one of the guidance systems conforming to the specifications in Annex 14, Chapter 5 must be installed. Details of these systems are given in the Aerodrome Design Manual, Part 4, Chapter 12 and visual aids document issued by ECAA. The apron management service should monitor these systems and associated guidance lights to ensure that they are inspected at least weekly to maintain high standards of serviceability.

#### **4.2 Marshalling service**

An aerodrome marshalling service should be provided where parking, docking guidance systems do not exist or are unserviceable, or where guidance to aircraft parking is required to avoid a safety hazard and to make the most efficient use of available parking space. Proper training arrangements should exist for marshallers and only those who have demonstrated satisfactory competence should be permitted to marshal aircraft. Where aerodrome marshalling is provided, comprehensive instructions should be written for marshallers including:

- a) The absolute necessity for using only authorized signals (copies of these should be displayed at suitable points);
- b) the need to ensure that prior to using the authorized signals the marshaller shall ascertain that the area within which an aircraft is to be guided is clear of objects which the aircraft, in complying with his signals, might otherwise strike;
- c) the circumstances in which one marshaled may be used and the occasions when wing walkers are necessary;
- d) the action to be taken in the event of an emergency or incident involving an aircraft and/or vehicle occurring during marshalling, e.g. collision, fire, fuel spillage;
- e) The need to wear a distinctive jacket at all times. This jacket can be of the waistcoat variety colored day glow red, reflective orange, or reflective yellow; and
- f) The action to be taken when re-positioning of aircraft is to be carried out by tractor and signaling is necessary to close down engines.

### **4.3 TRAINING**

The functions of the apron management service require that its staff be appropriately trained and authorized to carry out their respective responsibilities. This applies particularly to those responsible for the operation of an apron management centre or tower, to marshallers and to leader van (follow-me vehicle) operators.

Staff operating an apron management centre or tower have the responsibility for managing and, at some aerodromes, controlling aircraft movement within their area of responsibility. To a considerable extent their function is similar to that of ATC control on the manoeuvring area and similar training of staff is required. Among the issues addressed by a training programme will be:

- a) ATS unit/apron management co-ordination;
- b) start-up procedures;
- c) push-back procedures;
- d) gate holding procedures;
- e) taxi clearances; and
- f) En-route clearances.

Aircraft marshallers require training to ensure that they are properly qualified to direct aircraft movements. Their training should focus on:

- a) signaling;
- b) aircraft characteristics, both physical and operating, that relate to manoeuvring of aircraft within the confines of the apron; and
- c) personal safety around aircraft and particularly engines.

At aerodromes where leader vans ("follow me" vehicles) are in use, local regulations should ensure that drivers are suitably qualified in RTF procedures, know visual signals and have a suitable knowledge of taxiing speeds and correct aircraft/vehicle spacing. A thorough knowledge of the aerodrome layout with an ability to find one's way in low visibility is important.

# Appendix A

## Examples of Apron Management Services

### 1. HEATHROW AIRPORT, LONDON, UNITED KINGDOM

#### 1.1 *Traffic* 1983/84

Passengers 26 749 200 (84 per cent international)

Air transport movements 260 100

Cargo (tones) 469 700

1.2 *General.* The airport is owned and operated by the British Airports Authority and the air traffic control service is provided by the National Air Traffic Services of the Civil Aviation Authority.

1.3 *Layout.* Three passenger terminals are located in the centre of the airport, and are served by a total of eight piers which are surrounded by 116 aircraft stands. On the south side of the airport is a large cargo terminal which has a further 25 stands. A fourth passenger terminal is under construction which will have a further 22 stands.

1.4 *Stand guidance.* The majority of stands are equipped with azimuth guidance for nose-in stands (AGNIS), complemented by parallax parking aid (PAPA) or side marker boards. The airport authority provides a marshalling service for the remaining stands.

1.5 *Apron maintenance.* The apron areas have their own management organization responsible to the chief of airside safety and operations. Staff of the apron safety unit inspects all aprons regularly, as do members of operations management, and defects are reported to airport engineers for maintenance or repair. Stands are swept by sweeper vehicles when required and, in addition, there is a regular programme for the stands to be wet-scrubbed. Fuel spillages are reported to the apron safety unit who arrange for the cleaning.

1.6 *Visual aids.* All aircraft stands have standard paint markings and all apron taxiways have switchable green centre line lights and stop bars. Most aircraft stands have yellow aircraft stand maneuvering guidance lights. Aprons are marked in white paint to delineate equipment areas, inter-aircraft stand clearways and airside roads. The boundary between the aircraft stands and the taxiway is indicated by a continuous double white line. This line is also the boundary between the maneuvering area and the apron area.

1.7 ***Air traffic control.*** All movements on the airport except vehicles on aprons are controlled by the air traffic control service. As soon as aircraft are pushed back onto the taxiway they are on the maneuvering area and are controlled by the ground movement controller. Having the maneuvering area boundary between the stands and the apron taxiway has proved very successful, not only at Heathrow, but at other major British airports. The air traffic control service exercises positive R/T control over all movements on the apron taxiways. This provides high standards of discipline on apron taxiways and also means that the apron management service does not need to employ licensed controllers to exercise control over aircraft movements in the apron area.

1.8 ***Apron control.*** The apron control room is staffed by employees of the airport authority. Apron control is the focus for information on arriving and departing aircraft and is responsible for the allocation of the majority of aircraft stands at the airport. The allocation of aircraft stands serving one of the central area terminals is delegated to British Airways. Apron control staffs have no direct communication with aircraft and all information is passed through the ground movement controller in the tower.

1.9 ***Low visibility procedures.*** As the apron area comprises only aircraft stands there is very little involvement in low visibility procedures. Low visibility operations safeguarding is carried out on the manoeuvring area by another unit of operations staff.

Apron staff close certain vehicle crossings on taxiways and provide a "follow me" service as required.