

The Hashemite Kingdom of Jordan
Civil Aviation Regulatory Commission



Guidance material
Apron Management Services

Issued On the Authority of the Chief Executive Officer of the Civil Aviation
Regulatory Commission

Original
March, 2017



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DOCUMENT APPROVAL

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Apron Management Service

1. General

- 1.1 Apron management is required to regulate the activities and movement of aircraft, vehicles and personnel on the apron (JCAR Part 139 Appendix I).
- 1.2 There are a variety of different approaches to apron management which have been developed
- 1.3 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.
- 1.4 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
- 1.5 JCAR Part 139 Appendix I, recommends that an apron management service be provided when warranted by the volume of traffic and operating conditions.
- 1.6 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.
- 1.7 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.

2. Who operates the apron management service?

- 2.1 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-ordinated control between ATS and the aerodrome authority or operating company.

2. 2 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.
2. 3 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.
2. 4 One form of the co-ordinated apron management service is where radio communication with aircraft requiring start-up or push-back clearance on the apron is vested in the air traffic service unit
2. 5 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.

3. Responsibilities and Functions

3. 1 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

Overall responsibility for aircraft stand allocation should be retained by the airport operator 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 control 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.



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.

c) Start-up clearances

Normally these are given by the ATC unit. 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.

d) 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, nonavailability of facilities, snow clearance plans and low visibility procedures.

e) 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.

f) 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.



g) Apron discipline

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

4. Apron Safety

4.1 Blast precautions

- 4.1 All apron users should be made aware of the hazards arising from jet effluxes and propeller slipstreams. Where necessary apron design will have incorporated blast fences and the best use must be made of these to protect equipment. All vehicles and wheeled equipment must be left properly braked and, where appropriate, on jacks to minimize the risk of movement when subjected to jet blast or propeller slipstream. Particular care must be exercised with apron equipment having a large flat side surface area. Litter or rubbish can constitute a risk when acted on by blast and it is thus necessary to ensure that aprons are kept clean. Responsibility for the marshalling of passengers across aprons rests with the airline or its agent. However, airport staff should be aware of the risk to passengers on aprons from jet blast and should be prepared to give warning where this seems necessary.

4.2 Aircraft refueling

- 4.2 Airlines and fuel companies are responsible for the observance of safety procedures during the fuelling of aircraft. All personnel working on aprons should, however, be made aware of the major safety precautions and should report any apparent breach to the person in charge of the fuelling operations, the fuelling overseer, The main points to be observed are:

- a. no smoking or naked lights within the fuelling zone;
- b. auxiliary power units and ground power units shall not be started during the fuelling operation;
- c. a clear exit path maintained to and from the aircraft to allow the quick removal of fuelling equipment and persons in an emergency;



- d. aircraft and supply sources shall be correctly bonded and the correct earthing procedures employed;
- e. fire extinguishers of a suitable type should be readily available; and
- f. fuel spillage should be immediately brought to the attention of the fuelling overseer. Detailed instructions should be laid down for dealing with fuel spillage. When necessary, aircraft fuelling companies should be given instructions with respect to the acceptable positioning of vehicles relative to the aircraft to ensure that taxiing clearance limits are not infringed. Guidance on precautionary measures to be taken while fuelling operations are carried out is contained in the Airport Services Manual, Part 1 - Rescue and Fire Fighting.

4.3 Apron sweeping

- 4.3 The cleanliness of paved areas is vital to prevent foreign object damage (FOD) to the engines of taxiing aircraft. A regular programme should be instituted for the mechanical sweeping of aprons and taxiways so that in a given period of time all the operational paved areas where aircraft taxi or park will have been swept. In addition, sweeping should be available "on request" to deal with those areas on which loose material has accumulated since the last regular sweeping and which represent a hazard to aircraft. It is unlikely that there will be any requirement to sweep the runway on a regular basis unless the airfield is located in a dusty or sandy area.

4.4 Apron cleaning

- 4.4 At regular intervals, aircraft stands should be withdrawn from service and scrubbed with a chemical solvent to remove oil, grease and rubber marks. This is also required prior to repainting stand markings. The solvent may be applied from a bowser using spray booms and the stand is then scrubbed using a mechanical rotary brush. It is important that the stand being scrubbed should not be used by aircraft during the scrubbing operation.

5. Aircraft parking/docking guidance system

- 5.1 The apron guidance system provided will depend upon the accuracy of parking required and the types of aircraft operating on the apron. Guidance on apron markings is given in the Aerodrome Design Manual, Part 4. Where more accurate parking/docking is required then one of the guidance systems conforming to the specifications in JCAR Part 139 Appendix E must be installed. Details of these systems are given in the Aerodrome Design Manual, Part 4, Chapter 12. 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.

Marshalling service

- 5.2 An aerodrome marshalling service should be provided where parking or 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. 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 marshaller 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 coloured dayglow 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 signalling is necessary to close down engines.

6. Special procedures for low visibility conditions

- 6.1 The special procedures related to low visibility conditions are described in chapter 5 of guidance material 34/SMGC published on CARC website.

7. Training

- 7.1 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.
- 7.2 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.
- 7.3 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.
- 7.4 Aircraft marshallers require training to ensure that they are properly qualified to direct aircraft movements. Their training should focus on:
- a. signalling;
 - 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.
- 7.5 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 spacings. A thorough



knowledge of the aerodrome layout with an ability to find one's way in low visibility is important.

8. vehicle control on manoeuvring area

8.1 Air traffic control responsibility

Air traffic control is responsible for the control of the movement of vehicles on the manoeuvring area. To maintain such control, vehicles operating on the manoeuvring area should be fitted with RIT on the appropriate channel, or closely escorted by an R/T equipped vehicle.

8.2 Airport responsibility:

The airport operator is responsible for ensuring that all possible steps are taken to co-operate with air traffic control in discharging its responsibility for control of vehicles on the manoeuvring area. In particular, action should be taken to see that:

- a. a system of vehicle passes is established and only authorized vehicles permitted on the manoeuvring area;
- b. R/T equipment is provided on vehicles and is maintained in a fully serviceable condition;
- c. drivers are fully conversant with:
 - proper RIT procedures;
 - the terms and phrases used in air traffic control, including the ICAO spelling alphabet;
 - the meaning of visual signals on the airport, with particular emphasis on those intended to prevent inadvertent infringement of active runways;
 - the geography of the airport;
 - the "rules of the road" relating to vehicles and aircraft; and
 - the need to avoid infringement of the restricted areas associated with radio navigation facilities unless specifically exempted, vehicles are fitted with appropriate obstacle marking and lighting as specified in JCAR 139 Appendix F. The airport operator is responsible for the supply, fitting and maintenance of signs, lights and markings needed for the control of traffic on the manoeuvring area.

8.4 On apron areas air traffic control responsibility.

Air traffic control normally has no responsibility for control of vehicles on apron areas.

8.5 Airport responsibility on apron areas.

The airport operator is responsible for regulating vehicular traffic movement on the apron in order to reduce to a minimum the risk of aircraft/vehicle and vehicle conflict and to promote the safety of pedestrians and to achieve efficient traffic flows.

Control can be exercised by regulating the vehicles that can enter the apron and by instruction of driving .

All vehicle used on the apron areas shall display an air side or apron pass and the person responsible for a given vehicle shall ensure that all drivers are properly briefed. An airside or apron pass should not be issued unless the vehicle operator can produce a certificate showing that the vehicle is in good working condition.

The person responsible for a vehicle shall bring the following points to the attention of the driver:

- a. speed limits - in specific or general terms;
- b. authorized routes;
- c. an airport plan is displayed in the cab of all vehicles indicating the boundaries of the manoeuvring area and the runway crossing points
- d. rules relating to rights of way of aircraft and vehicles; and authorized parking are.

9. DIVERSIONS

- 9.1 Contingency arrangements should be made at each airport to deal with the possibility of apron congestion due to a large influx of diverted aircraft. These arrangements should include the setting up of a liaison committee of all parties concerned to enable quick decisions to be made. Warning arrangements should be made to alert operators to any approaching saturation of apron or terminal facilities.

