



INTERNATIONAL CIVIL AVIATION ORGANIZATION

**THE SECOND MEETING OF THE APANPIRG AERODROMES
OPERATIONS AND PLANNING – WORKING GROUP (AOP/WG/2)**

Yogyakarta, Indonesia, 3 – 5 June 2014

Agenda Item 4: Provision of AOP in the Asia/Pacific Region

AERODROME OPERATIONS UNDER THUNDERSTORM CONDITIONS

(Presented by Macao China)

SUMMARY

This paper presents the measures on handling emergency cases of passengers with life in danger and unruly passengers during adverse thunderstorm conditions. It also proposes ICAO to provide respective guidance on airport operations under thunderstorm conditions.

Strategic Objectives:

A: Safety – Enhance global civil aviation safety

1. INTRODUCTION

1.1 Working on the operational area of an airport in thunderstorm conditions exposes staff to the risks of lightning strike; therefore it is a major hazard and safety concern. All staffs involved in airside activities such as loading, refueling, marshalling, servicing and inspecting an aircraft and maintenance activities must be warned of approaching thunderstorms onwards to the airport perimeter and whenever necessary be withdrawn from technical and/or operational activities in open areas.

1.2 In this connection, the thunderstorm warning system is established in most of the airports in this region that are regularly affected by this weather phenomenon.

1.3 Warning procedures to safe guard staff exposed have been adopted in several airports such as Hong Kong, Macau, Malaysia and Singapore.

2. DISCUSSION

2.1 Macau International Airport frequently faces adverse weather conditions such as typhoon, low cloud/visibility and thunderstorm in most of the months along the year. The thunderstorm warning procedure was established on October 2002 and has been constantly updated according to the technological advancement on thunderstorm detection throughout these years.

2.2 Currently when red thunderstorm warning is in force (thunderstorms are within 5km from the reference point on the middle of apron with latitude 2209.45 N and longitude 11334.62 E and are directly affecting and posing immediate dangers to the aerodrome), the following procedures and practices are observed:

- Activation of the red thunderstorm warning system;
- Activation of a 30-second sound warning repeating every 5 minutes for additional warning to the staffs;
- Suspension of marshalling service (follow-me guidance will continue);
- Suspension of any works on the airside and grounding of any systems that are equipment with this facility. Any workers outside should remain in shelter until signal is lowered;
- Suspension of embarkation or disembarkation both on loading bridges (if it is not connected before the warning is in effective) and/or on remote stands;
- Suspension of refueling and catering services; and
- Suspension of circulation of vehicles on the airside, except those with drivers cabs.

2.3 As such, the whole airport operations are strongly affected during the period of red thunderstorm signal being hoisted, sometimes suffering delays of up to a few hours. Apart from the dissatisfaction that may arise from passengers and airlines, risk assessment has been made to justify that special arrangement must be made available to provide emergency services to safety situations, such as persons on board in case of life threatening or security situations like disruptive or unruly passengers.

2.4 There is guidance on airport operations under adverse weather conditions (ice, frost, freezing rain, strong winds, rain, fog or low visibility and snow) in the Aerodrome Services Manual (Doc 9137), Part 8 – Airport Operational Services. However, thunderstorm conditions are not included. It is also found that there is very limited guidance material for airport on handling emergency cases under thunderstorm conditions from ICAO or other civil aviation organizations.

2.5 The following exemption measures for emergency cases are proposed to this meeting for discussion and recommendation to ICAO on providing respective guidance:

- i. Emergency situations shall be identified and declared by the captain.
- ii. Whenever the cabin crew identifies a case of life in danger or unruly passenger, it shall be communicated immediately to the airline representative, requesting medical or security force assistance.
- iii. After receiving such information, the Airport Duty Manager will inform related entities that exemption measures will apply for the referred flight.
- iv. For arrival aircrafts, preferential stand allocation will be given to stands equipped with loading bridge.
- v. Airport Duty Manager will contact the respective Emergency Services.

Exemption Measures for Stands Equipped with Loading Bridges for Arriving Aircraft

- Aircraft will taxi to the designated stand and follow the AVDGS information, or in case of failure the marshalling signals.
- After stopping, the pilot shall set the parking brakes, shut down all engines and switch off anti-collision beacons, APU shall remain ON. The wheels will not be chocked when thunderstorm warnings are in effect.
- The crew will indicate to the loading bridge operator to connect the loading bridge for emergency medical assistance.

- As an additional measure, aircraft earthing points shall be available at all stands. Ground handling representative or line maintenance operator shall connect the aircraft to the earthing points with a suitable cable during the period when thunderstorm warnings are in effect.

Note: Loading bridges and marshalling platforms shall also be connected with earthing points whenever thunderstorm warnings are effective.

Exemption Measures for Remote Stands for Arriving Aircraft

- Aircraft will be guided by the follow-me vehicle to the designated stand. Captain shall follow strictly the follow-me vehicle and stop when indicated by the follow-me vehicle.
- After stopping, the pilot shall set the parking brakes, shut down all engines and switch off anti-collision beacons, APU shall remain ON. The wheels will not be chocked when thunderstorm warnings are in effect.
- Ground handling representative or line maintenance operator shall connect the aircraft to the earthing points with a suitable cable during the period when the thunderstorm warnings are in effect.
- Emergency service will be guided to the designated stand by the follow-me vehicle.
- The crew will indicate to the ground handling operator to connect the stair truck to the aircraft and proceed with the Emergency Evacuation.
- As an additional measure, aircraft earthing points shall be available at all stands.

Besides, all involved entities, personnel and equipment shall be properly covered with insurance for working at airside under thunderstorm warning. These situations are also extensive to aircraft on ground while the thunderstorm signal is effective.

2.6 Taking into consideration that arrangement must be made available to provide emergency services to safety situations, such as life in danger or unruly passenger under adverse thunderstorm conditions when most airfield operations are suspended, and that limited guidance can be archived, it is recommended that ICAO can provide guidance materials on airport operations under adverse thunderstorm condition.

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the information contained in this paper; and

3.2 It is recommended that guidance materials can be provided by ICAO to the Contracting States on the airfield operations under adverse thunderstorm conditions.

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