



Presentation on Agenda Item: 6.2 ATC Separation

WP28 : SEPARATION BETWEEN TAXIING AIRCRAFT AND VEHICLE DURING LOW VISIBILITY OPERATIONS

Presented by: Pakistan

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- ✈ This paper discuss the standard requirement of prescribing separation minima between taxiing aircraft and ground vehicles during Low Visibility Operations.
- ✈ While ICAO Annex 11 – Air Traffic Services mandates this requirement, defining numerical or distance metrics remains practically challenging. During such operations, safety margins are maintained through risk-based frameworks combining procedural mitigations, such as geographical block isolation with advanced surveillance technologies (where applicable).
- ✈ Since guidance material is fragmented across multiple ICAO documents, this paper also proposes reviewing existing standard for clarity and issuance of single consolidated ICAO guidance manual.
- ✈ The meeting is invited to note the analysis, discuss the harmonization proposal, and exchange State implementation experiences.

3.8 Control of persons and vehicles at aerodromes

3.8.2 In conditions where low visibility procedures are in operation:

- a) persons and vehicles operating on the manoeuvring area of an aerodrome shall be restricted to the essential minimum, and particular regard shall be given to the requirements to protect the ILS/MLS sensitive area(s) when Category II or Category III precision instrument operations are in progress;
- b) subject to the provisions in 3.8.3, the minimum separation between vehicles and taxiing aircraft shall be as prescribed by the appropriate ATS authority taking into account the aids available;
- c) when mixed ILS and MLS Category II or Category III precision instrument operations are taking place to the same runway continuously, the more restrictive ILS or MLS critical and sensitive areas shall be protected.

Note.— The period of application of low visibility procedures is determined in accordance with ATS unit instructions. Guidance on low visibility operations on an aerodrome is contained in the Manual of Surface Movement Guidance and Control Systems (SMGCS) (Doc 9476).

3.8.3 Emergency vehicles proceeding to the assistance of an aircraft in distress shall be afforded priority over all other surface movement traffic.

PANS – ATM ” Para 7.13.1 & 7.13.5

7.13.1 Control of aerodrome surface traffic in conditions of low visibility

7.13.1.1.2 The longitudinal separation on taxiways shall be as specified for each particular aerodrome by the appropriate ATS authority. This separation shall take into account the characteristics of the aids available for surveillance and control of ground traffic, the complexity of the aerodrome layout and the characteristics of the aircraft using the aerodrome.

7.13.2 Procedures for control of aerodrome traffic when category II/III approaches are in use

- f) special procedures for the control of traffic on the manoeuvring area, including:
 - 1) the runway-holding positions to be used;
 - 2) the minimum distance between an arriving and a departing aircraft to ensure protection of the sensitive and critical areas;
 - 3) procedures to verify that aircraft and vehicles have vacated the runway;
 - 4) procedures applicable to the separation of aircraft and vehicles;

Note.— Further information regarding the requirements for low visibility operations can be found in the Air Traffic Services Planning Manual (Doc 9426) and the All-Weather Operations Manual (Doc 9365).

- ➔ Generally, operations at an aerodrome are dependent on air traffic controllers, pilots and vehicle drivers using visual observations to estimate the respective relative positions of aircraft and vehicles.
- ➔ Pilots and vehicle drivers rely on visual aids (lighting, markings and signage) to guide them along their assigned routes and to identify intersections and holding positions.
- ➔ During periods of low visibility, controllers must rely on pilots' reports and surface movement radar to monitor spacing and to identify potential conflicts.
- ➔ Under these conditions, pilots and vehicle drivers find that their ability to operate “see and be seen” is severely impaired.
- ➔ There are **no prescribed separation minima**, and controllers, pilots and vehicle drivers share the responsibility that operations will not create a collision hazard.

General Principle

- ➔ The primary means of control and surveillance of ground traffic in low visibility conditions can be procedural, using radio voice communication between the aerodrome controller and the pilot or vehicle operator, supplemented by visual information for the pilot and vehicle drivers in the form of lights, surface markings, and guidance signs.
- ➔ The guidance provide visibility conditions (1, 2 & 3) – Number of segments identifiable constitute the block for ground movement
- ➔ In order to ensure safe spacing between taxiing aircraft and vehicle, the required minimum separation may be geographical (aerodrome layout dependent) wherein either vehicle or aircraft is allowed to move in a particular area.
- ➔ Enhanced situational awareness through surveillance systems can further ensure safe operation.

ICAO Provisions for aerodrome control of traffic

- ✈ **Annex 11 “Air Traffic Services”;**
- ✈ **PANS-ATM Doc 4444;**
- ✈ **Doc 9365 Manual of All Weather Operations**
- ✈ **Doc 9476 Manual of SMCGS; and**
- ✈ **Doc 9830 Advanced SMCGS Manual.**

- ➔ The review establishes that determination of such separation minima in terms of numerical value/distance may not be practicable.
- ➔ Rather, set of procedures/protocols can ensure the safe distance/spacing between vehicles and taxiing aircraft.

- ➔ **Annex 11 “Air Traffic Services” standard requirement contained at para 3.8.2(b) requires review to provide more clarity to States and ATS authorities.**
- ➔ **ICAO may also like to consider issuance of dedicated guidance material for more effective implementation of the required standard while combining and improving the existing guidance contained in relevant ICAO Docs.**

Meeting is invited to

- ✈ note the information contained in this paper;
- ✈ discuss the **proposal** presented;
- ✈ **share the experience of application of referred standard**; and
- ✈ discuss any relevant matters as appropriate. .



THANK YOU