

RA 3274 - Low Visibility Procedures

Rationale

Air System operations during reduced visibility or low cloud conditions create additional operating hazards and require measures to mitigate the associated hazards.

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Regulation

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3274(1) Aviation Duty Holders (ADH) and Heads of Establishment (HoE) **shall** have Low Visibility Procedures (LVP) at aerodromes that operate in weather conditions where Air Traffic Control (ATC) are not always able to maintain full visual control of the Movement Area.

Acceptable Means of Compliance 3274(1)

Low Visibility Procedures

1. Aerodrome operators **should** develop LVP utilizing extant safety management processes¹ in order to limit unnecessary access to the Movement Area, determine the movement rate that can be sustained and the LVP that will adequately support this rate.
2. **Visibility Conditions.** The point at which LVP are initiated will vary from aerodrome to aerodrome and **should** be clearly defined in relation to Runway Visual Range (RVR) / visibility conditions, as detailed in RA 3275▶²◀.
3. **Declaration of LVP in Force.** It is essential that all LVP measures be verified as in place before LVP are declared to be in force by ATC. In the event of suitable gaps in flying operations, some LVP measures can be relaxed to allow efficient use of resources; such procedures **should** be detailed in Local / Unit orders³. All LVP measures **should** be verified as in place prior to the resumption of flying operations. When flying is in progress, LVP **should** be declared as cancelled before the aerodrome operator withdraws any measures.
4. **Conversion of Reported Meteorological (Met) Visibility to RVR.** At aerodromes where RVR measurements are not made, or in case of unserviceability of RVR measuring equipment, LVP **should** include criteria for implementation and withdrawal based on the reported Met visibility².
5. **Aerodrome and Runway Incursions.** It is accepted that during periods of low visibility the likelihood of aerodrome and runway incursion may be increased. Personnel **should** report all aerodrome and / or runway incursions in accordance with (iaw) RA 1410▶⁴◀.
6. **Precision Instrument Approach LVP Operations.** As the RVR deteriorates to the minimum at which Category (Cat) I precision approaches can be made (typically below 600 m but the exact value is determined by a variety of factors), or the cloud ceiling reduces to 200 ft, the withdrawal of non-essential vehicles and personnel from the Manoeuvring Area **should** be completed.
7. **Approach End Barrier**⁵. In low visibility conditions, the ability of aircrew or ATC to recognise that the approach end barrier has been inadvertently raised is significantly diminished. Consequently, and despite the presence of alarm systems, when LVP are declared, the approach end barrier **should** be isolated.
8. **Wildlife Control Operations.** Wildlife control operations **should** continue during LVP, but procedures **should** ensure that adequate time between movements is afforded to permit wildlife control measures to be implemented iaw RA 3270▶⁶◀.

¹ Refer to RA 1200 – Air Safety Management.

² ▶Refer to RA 3275 – Runway Visual Range. ◀

³ Military variance is less stringent than civilian equivalent for continuous LVP in CAP 168 - Licensing of Aerodromes.

⁴ ▶Refer to RA 1410 – Occurrence Reporting and Management. ◀

⁵ Refer to RA 3268 – Air System Arresting Systems.

⁶ ▶Refer to RA 3270 – Aerodrome Wildlife Control. ◀

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9. **Visibility Conditions – Guidelines:**
- a. **Visibility Condition 1.** Is defined as visibility sufficient for the pilot to taxi and to avoid collision with other traffic on taxiways and at intersections by visual reference and for ATC personnel to exercise control over all traffic on the basis of visual surveillance. No additional requirements for the protection of ground operations by Air Systems are required.
 - b. **Visibility Condition 2.** Is defined as visibility sufficient for the pilot to taxi and avoid collision with other traffic on taxiways and at intersections by visual reference, but insufficient visibility for ATC to control traffic by visual surveillance. The actions required will be dependent on the dimensions of the Movement Area and position of the Visual Control Room (VCR):
 - (1) Procedures and visual aids will allow the pilot to determine ► **their** ◀ position and follow the required route. However, measures will need to be put in place to limit the potential for undetected aerodrome incursions, such as limited taxi routing, Surface Movement Radar (SMR) and stop-bars or physical barriers at runway access points.
 - (2) When the visibility decreases to a value equivalent to 1000 m RVR, and is expected to fall further, the withdrawal of vehicles and personnel involved in construction, Maintenance and other non-essential activities on the Manoeuvring Area will normally be initiated. Routine Maintenance on visual and non-visual aids may be suspended and the Instrument Landing System (ILS) and / or Precision Approach Radar (PAR) Sensitive Area will be cleared of all traffic.
 - (3) As the RVR deteriorates to 600 m, or the cloud ceiling reduces to 200 ft, all activities on the Manoeuvring Area will be brought under specific control by ATC (eg all activities subject to individual clearances as opposed to unrestricted movement).
 - c. **Visibility Condition 3.** Is defined as visibility equivalent to an RVR of less than 400 m. In such visibility conditions it is likely to be necessary to restrict further the operation of vehicles and persons on the Movement Area and initiate stringent control measures in response to the individual unit requirement.
10. **Hazards.** The following scenarios may be considered during the safety management process to ensure that the hazards associated with LVP are managed appropriately:
- a. Human error leads to an Air System using the Runway whilst it is occupied by another Air System, vehicle or pedestrian that may be unsighted due to low visibility.
 - b. The Air System uses the Runway whilst wildlife or Foreign Object Damage / Debris (FOD) is undetected on the surface due to low visibility.
 - c. Air Systems operating on taxiways / dispersals / aprons are unable to apply adequate separation from other Air Systems and / or vehicles due to low visibility.
 - d. Inadvertent barrier selection whilst an Air System is on final approach, undetected due to low visibility.
 - e. Delayed aerodrome rescue and fire fighting (ARFF) response to an Air System incident or accident due to low visibility. Although it is unlikely that ARFF response time will be significantly affected in visibilities down to 200 m, temporary relocation of vehicles to strategic points may be necessary for a large or complicated aerodrome. In visibility below 200 m there is greater probability that response times will be affected.

⁷ CAP 168 Appendix 2B Low Visibility Operations and ICAO Doc 9476 Manual of Surface Movement and Guidance Control Systems, Ch 5. EASA EU139/2014 Annex II Part-ADR also refers.

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11. **Vehicular and Air System Controls.** The following control measures may be considered:
- a. Reducing vehicular access and use of the Movement Area. This could be introduced in stages as weather conditions deteriorate, and may include the suspension of non-essential working parties on the Aerodrome at an appropriate point or temporarily closing defined parts or all of the Movement Area to vehicular traffic.
 - b. The enforcement of positive control measures for essential aerodrome vehicles, following the suspension of non-essential activity, to include: positive radiotelephony (RT) clearances before entry onto the Movement Area; and subsequent separation of vehicles and Air System movements through positive control:
 - (1) By informing vehicles and Air Systems of each other's presence, or;
 - (2) Only allowing one Air System or vehicle on segmented sections of the Movement Area at a time.
 - c. The enforcement of vehicles to use dipped headlights when LVP are declared and the application of appropriate reduced speed limits.
 - d. Applying a simplified taxi pattern where possible, restricting the use of crossing or converging active taxiways, back-tracking of runways etc.
 - e. Reducing the number of Air Systems on the Manoeuvring Area at the same time, alternatively, the Manoeuvring Area could be segmented with only one Air System / vehicle allowed into each segment at a time, using taxi / driving clearance limits.
 - f. The use of a 'follow me' vehicle to guide Air Systems to or from the Runway to reduce the potential for aircrew to take incorrect routings. This could be applied to all Air System movements or limited only to unfamiliar visiting Air System. This measure is particularly relevant at aerodromes with complicated taxi patterns and increased potential for error.
 - g. Increased vehicular inspections of the Runway to reduce the potential for unknown obstructions or FOD to be on the surface.
 - h. Vehicles positioned at runway threshold holding points and key holding / crossing points to help prevent runway incursions and to promptly report those that do occur to ATC.
12. **SMR.** SMR may be provided at aerodromes with instrument approach aids that enable operations in RVR conditions below 550 m⁸. Unless procedures limit the number of Air Systems either on the Manoeuvring Area or on final approach within 5 nm, to one at any given time, and robust physical and procedural measures are in place to control the access of vehicles onto the Movement Area.
13. At aerodromes that are limited by instrument approaches with minimum RVR conditions of 550 m, SMR may still be required and may be considered where traffic density and operating conditions are such that acceptable levels of safety cannot be provided by alternative procedures and physical measures.
14. **Stop-Bar Lighting.** Stop-bars are highly effective in RVR conditions of less than 800 m, however the use of stop-bars in all lighting conditions is to be considered, as runway incursions are not limited to low visibility conditions. Aerodromes with Cat I and Cat II precision instrument approaches or take-off in RVR less than 800 m may consider the benefits of installing stop-bar lighting systems to enhance the effectiveness of their LVP. The specification for stop-bar lighting is detailed in RA 3515(18)⁹.
15. **Runway Guard Lights.** Runway Guard Lights are highly effective in RVR conditions less than 1200 m, however the use of Runway Guard Lights in all lighting

⁸ ICAO Annex 14 currently recommends the provision of SMR at aerodromes where operations in RVR less than 400 m take place. Multilateration based systems are an acceptable alternative within Surface Movement Guidance and Control Systems (SMGCS).

⁹ ► Refer to ◀ RA 3515(18): Taxiway Lights – Stop Bar Lights.

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conditions is to be considered, as runway incursions are not limited to low visibility conditions. Aerodromes with Cat I and Cat II precision instrument approaches, non-precision approaches or take-off in RVR less than 1200 m may consider the benefits of installing Runway Guard Lights to enhance the effectiveness of their LVP. The specification for Runway Guard Lights are detailed in RA 3515▶◀¹⁰.

Runway Incursions and Aerodrome Movement Area Incursion. These are defined in MAA 02▶¹¹◀.

16. **Protected Area.** A surface designated for the landing and take-off of the Air System. This is to be interpreted as the runway strip up to and including holding points appropriate to the type of runway. It also refers to those portions of an aerodrome used for the take-off and landing of Air Systems, such as flight decks and helicopter operation areas, other than designated runways. This will, in addition, include instrument approach aid Critical Areas at all times and ILS / PAR Sensitive Areas during LVP operations. These areas are defined as:

- a. **Critical Area.** An area of defined dimensions extending about the ground antennae of precision instrument approach equipment, within which the presence of vehicles or Air System will cause unacceptable disturbance of the guidance signals.
- b. **Sensitive Area.** An area extending beyond the Critical Area where the parking and / or movement of Air Systems or vehicles will affect the guidance signal to the extent that it may be rendered unacceptable to Air Systems using the signal.

17. **Precision Instrument Approach LVP Operations.** Precision approaches are defined as:

- a. **Cat I Operation.** A precision instrument approach and landing with a decision height not lower than 200 ft and with either a visibility not less than 800 m, or a RVR not less than 550 m.
- b. **Cat II Operation.** A precision instrument approach and landing with a decision height lower than 200 ft but not lower than 100 ft, and a RVR not less than 300 m. See MAA 02.

¹⁰ ▶ Refer to RA 3515 – Permanent Fixed Wing Aerodrome: Lighting.

¹¹ Refer to MAA02: MAA Master Glossary.◀