1 Scope

1.1 Low Visibility Procedures

Three stages of low visibility are in place at Manchester Airport (EGCC) which describe the Low Visibility Procedures (LVP), which once completed, allow the safe movement of aircraft during Low Visibility Operations (LVOs) The three stages of LVP safeguarding are defined as LVP Alert, LVP Cloud & LVP Visibility (LVP VIS). The following table shows the trigger points for each visibility state:-

		IRVR (Visibility)			
		Greater than 800m	800-600m	599-201m	200m or less
CLOUD CEILING	Greater than 300ft		**LVP ALERT**	**LVP VIS**	**LVP VIS (Block2Block)**
	300-201ft	**LVP ALERT**	**LVP ALERT**	**LVP VIS**	**LVP VIS (Block2Block)**
	200ft or less	**LVP CLOUD (23 DUAL/05L)**	**LVP CLOUD (23R/05L)**	**LVP VIS**	**LVP VIS (Block2Block)**

1.1.1 LVP Alert (LVP 'Safeguarding')

LVP Alert (or the process of safeguarding the airfield for Low Visibility Operations),will be requested when any IRVR reading is 800m and forecast to deteriorate and/or cloud celling is 300ft and forecast to deteriorate.

When triggered, Air Traffic Control (ATC) will inform the Airfield Operations Duty Manager (AODM) who will initiate LVP Alert as per the actions detailed in paragraph 4, and once complete, will advise ATC that the airfield is in LVP Alert.

LVP Alert is the state when the airfield is prepared for Low Visibility Operations, but LVP Cloud or LVP Vis are not in force.

1.1.2 LVP Cloud

LVP Cloud will be the airfield state when the IRVR is 600m or greater and the cloud ceiling is 200ft or less.

LVP CLOUD operations are only permitted on 23 DUAL / 23R Single Runway or 05L Single Runway.

1.1.3 LVP VIS

LVP VIS will be the airfield state when the IRVR is 599m or less.

LVP VIS operations are only permitted on 23R Single Runway or 05L Single Runway.

1.1.4 LVP VIS (Block2Block)

The block system applies when the IRVR is 200m or less. In this sub-state of LVP VIS, only one aircraft (or vehicle), at a time, is allowed to taxi/transit within a block. This will be coordinated by ATC, Ground Movement Control (GMC). However, if a Airfield Operations 'follow-me' is requested by ATC during 'block2block' operations, an aircraft and vehicle will operate within the same block.

2 Driving Restrictions

When LVPs are in initiated, the following driving restrictions are imposed on the airfield:

2.1 Manoeuvring Area

a) All vehicles should withdraw from the manoeuvring area immediately. All vehicles should use the apron road system for all activities. Crossing of red Illuminated stop bars at Runway Holding Points (RHP) or Intermediate Holding Points (IHP) is not permitted at any time, unless explicit authorisation from ATC is provided.
b) Airfield Operations will provide 'follow-mes' on the manouvering area during all Low Visibility States and have free-range privileges during LVP Alert & LVP Cloud. During Low Visibility states LVP Vis & LVP Vis (Block2Block), Airfield Operations require point-2-point clearances via ATC. Airfield Operations vehicles entering the manouvering area during LVOs should be MLAT enabled.
c) RFFS have free-ranging privileges during LVOs when responding to an emergency. All vehicles should be MLAT enabled.
d) Any other airside drivers requiring entry onto the manoeuvring area require pre-authorisation from the AODM and a 'follow-me' from Airfield Operations.
e) If driving is required on the taxiways, drivers should operate to the left of taxiway centrelines to avoid oncoming traffic, however, to assist ATC with Surface Movement Radar (SMR) monitoring, vehicle drivers shall aim to drive as close to taxiway centrelines as practically possible.
f) All vehicle drivers should come to a complete stop at uncontrolled taxiway crossing points. Drivers should demonstrate increased situational awareness during low visibility operations, using both visual and noise indicators, ensuring the taxiway is clear of both aircraft and/or vehicles before crossing.
g) Aircraft pushback procedures remain unchanged.

2.2 Runway Access

When essential access to the runway is required, two R permit holders per vehicle must be present in the vehicle. 'Sterile' working conditions whilst driving on the runways is a mandatory requirement.

2.3 Vehicle MLAT Failure

In the event of full MLAT failure, vehicles may be used on the manouvering area with a functioning light bar & a functioning radio base set (VHF) if approved by the AODM & ATC Watch Manager.

3 Implications of LVPs

3.1 Equipment

3.1.1 Instrument Landing System

To provide the requisite additional protection for the ILS signals, the Localiser Sensitive Area (LSA) is activated. The LSA extends 137m either side of the runway centre line commencing at the ILS Localiser and extending the full length of the runway.

No aircraft or vehicle is permitted to infringe the LSA ahead of an arriving aircraft from the time it is 2nm from touchdown until it has completed its landing run. In the case of departing aircraft, the LSA only exists between the position of the departing aircraft and the localiser aerial.

When an A380 is active an increased protection area, the Dynamic Localiser Sensitive Area (DLSA) exists. The DLSA is contained within parallel lines, 137m/190m/160m reducing to 137m either side of the runway centreline. This also extends between the beginning of the runway and the ILS localiser aerial.

No A380 is permitted to infringe the DLSA ahead of an arriving aircraft from the time it is 4nm from touchdown until it has completed its landing run. In the case of departing aircraft, the DLSA only exists between the position of the departing A380 and the localiser aerial.

To achieve the latter requirement, the Category II/III holding points are the closest point to the runway at which aircraft and vehicles can be held. Additionally, certain routes will be closed to aircraft/vehicles. The process of protecting the LSA from unauthorised entry is known as 'LVP ALERT'.

3.1.2 Instrumented RVR (IRVR)

This is a requirement for operations in CAT II/III conditions.

3.1.3 Lighting

Approach and runway lighting appropriate to the conditions must be provided during low visibility operations. The following lighting is required and assists both pilots and drivers to know where they are located on the airfield relation to the runway and LSA.

3.1.4 Stopbars

There are two types of stopbars in use. Each one having its own unique alphanumeric or designator:

Runway Holding Position (RHP)

Lit stopbars located at the outer edge of the LSA. These stopbars are in use H24 and are provided to protect the LSA and runway incursions. They provide a 'ring of red' around the runway and LSA.

Intermediate Holding Position (IHP)

Lit stopbars are also provided at intermediate holding points on the manouvering area. In IRVR 200 meters or less these stopbars are used to operate the 'block to block' system in which only one aircraft or vehicle is permitted 'within a block' at any one time (unless an aircraft 'follow-me' is required).

3.1.5 Runway Guard Lights (Wig-Wags)

Runway Holding position stopbars are supplemented by "Wig-Wags" (amber flashing lights). Intermediate holding position stopbars do not have "Wig-Wags".

3.1.6 Taxiway Centre Line and 'follow-me' requirements

This taxiway centreline ground lighting is green. However, the links between the runway holding position and its termination on the runway centreline alternates between green and amber centreline ground lighting. The links between the runway centreline and the runway holding position also alternate between green and amber lighting. This indicates to pilots and vehicle drivers if they are within the LSA. During periods of Low Visibility operations, a follow-me vehicle will be provided within the manouvering area whereby there is no ground lighting available.

Taxiway centreline ground lighting on Taxiway Zulu Blue will alternate between blue & green lighting. Taxiway centreline ground lighting on Taxiway Zulu Orange will alternate between orange and green lighting

3.1.7 Runway Centreline

The Runway Centreline ground lighting is white. However, at 900m from the end, the lighting becomes alternate white/red and in the final 300m of the runways become red to indicate to pilots the end of the runway is approaching

3.1.8 Surface Movement Radars (SMR)

SMR is radar equipment specifically designed to detect all principal features on the surface of an airport, including aircraft and vehicular traffic, and to present the entire image on a radar indicator console in the control tower. During Low Visibility, the SMR is integral software which supports ATC with safe and efficient ground movement control.

3.1.9 Aircraft Parking / Docking Guidance

When IRVR is 600 meters or less (LVP Vis) Safedock AVDGS may be withdrawn from use at the discretion of the AODM and all aircraft are to be marshalled onto stand by Airfield Operations. The AODM will place an advisory message to this effect on CHROMA. ATC Watch Manager will update ATIS.

3.2 Power Supplies

It is essential that there is a continuous power supply whilst aircraft are operating during Low Visibility Operations. In practice this means that in the event of a power failure, the standby system must be available immediately (within one second), however standby generators cannot meet this requirement.

Therefore, during Low Visibility Operations it is standard practice to use the standby generators and use the 'mains' supply as the standby facility. This changeover, if required, can

meet the time criteria. If standby generators fail and power switches to the mains supply, operations should be drawn to a close until such time as a suitable secondary power supply which can achieve a one second changeover is restored.

3.3 RUNWAYS

MA will revert to 23R or 05L single runway operations during 'LVP Vis'.. However, in an 'LVP Cloud' state, departures from runway 23L will be permitted. When operating in an easterly direction (05), the onset of any LVP state will require single runway operations on runway 05L.

3.3.1 LVO Taxiway Restrictions

The table below shows aircraft taxiway restrictions. However, dependent on the aircraft type, transiting along the above taxiways are permitted with Airfield Operations – Follow-Mes.

Taxiway	Point	Restriction
A	A4 - D1	Route not available in LVP VIS
C	C2	An aircraft on taxiway D shall not be permitted to pass behind an aircraft holding at C2.
	C2 - P3 (right turn)	Route not available in LVP VIS
D	D1 - A4	Route not available in LVP VIS
P	P3 - C2 (left turn)	Route not available in LVP VIS

For clarity, any unlit taxiway centrelines require a 'follow-me' escort via Airfield Operations during LVOs. Aircraft 'follow-me' escorts are also required from Signature Aviation and Light Aircraft Parking Areas, Rompa & Taton.

LVP CLOUD – Westerly Operations

- All Runway 1 crossing points are available North to South. Only B-BZ is available South to North.
- For Runway 1 single runway operation, aircraft are to enter via J1 or M1.
- All exits are available.

LVP CLOUD – Easterly Operations

- All Runway 1 crossing points are available.
- Aircraft are to enter Runway 1 via A1, AG1 or AF1.
- All exits are available.

LVP VIS - Westerly Operations (Runway 23R)

- Aircraft are to enter via J1 or M1.
- Aircraft may vacate at BD, AE, AG1 or A1.

LVP VIS - Easterly Operations (Runway 05L)

- Aircraft are to enter via A1, AG1 or AF1.
- Aircraft may vacate at H1, M1 or J1.

3.3.2 Movement Rates

Due to the requirement to keep the LSA clear during aircraft landings, together with the reduced visibility from the ATC Visual Control Room, a restricted movement rate may be applied. This will be confirmed by the ATC Watch Manager.

3.4 Responsibilities and Procedures

A significant number of personnel are involved in a range of actions which must be completed before the LSA can be deemed protected, prior to the LVP Alert status being applied. The various actions are listed below.

3.4.1 ATC Watch Manager

a) Notifying the AODM when LVP Alert actions are required
b) Informing the AODM when the LVP state changes
c) Selecting the appropriate Airfield Ground Lighting (AGL) setting on the AGL panel for LVPs.
d) Determining and communicating appropriate aircraft flow rates to the AODM.
e) Operating a 'block to block' system on the manoeuvring area when the IRVR falls below 200m
g) Notifying the AODM when all LVPs are cancelled
h) Operating in accordance with the MATS Part ll LVPs
i) Communicating LVP states via ATIS.

NB - Communication with the AODM will be via telephone.
NB - NATS will incorporate these MA requirements into their ATC specific MATS Part ll document.

3.4.2 Airfield Operations Duty Manager

When informed by ATC that LVP Alert action is required, the AODM is responsible for taking the following actions:

a) Completing the LVP Supplementary Action List (LOP001)
b) Removing all contractors from the manoeuvring area (unless specific procedures have been agreed between Manchester Airport and the contractor, enabling continuation of work in a secure area).
c)
d) Requesting that the Airfield Safety & Compliance Officers (ASCO) close the gates across Perimeter Road at B1C sub-station.
e) Requesting that the ASCOs close the gates across the Perimeter Road near stand 58
f) Request that the Airfield Security Team Manager activates Low Visibility Operations signage at:

- Airside Operations Centre
- West Gate, North Gate, T1 & T3 Pedestrian Security Access Points
- STD 61R Head of Stand

h) Fire station watch manager is responsible for activating the South Side Fire Station LVP sign (via RFFS Watchroom).
i) Authorising any vehicle 'follow-mes' on the manoeuvring area

The AODM is responsible for ensuring all the safeguarding actions have been implemented and positive confirmation from all stakeholders that actions are completed must be communicated to the AODM without delay. This will allow the AODM to confirm to the ATC Watch Manager that all arrangements are in place and CAT II/ lll approaches may then commence.

3.5 Equipment Failures

3.5.1 SMR

In the event of an SMR failure, the 'LVP Cloud' state is not permitted, in the event minima meets the requirements for LVP Cloud, LVP Vis procedure will be adopted.

3.5.2 Aerodrome Lighting

In the event of any lighting unserviceability or deficiency, the AODM is to be informed immediately.

The AODM is responsible for:

- Informing the Engineering and Baggage Duty Manager (EBDM) immediately to ascertain the exact nature of the lighting deficiency.
- Informing the AST (Asset Support Team) immediately.
- Informing the ATC Watch Manager of the deficiency, agreeing the implication for aircraft operations and determining what actions are to be taken. ATC Watch Manager to update ATIS if deemed appropriate.
- Taking necessary actions to enable continued operation of the aerodrome in the prevailing conditions.
- Promulgating any operational changes without delay via RTF and NOTAM.