EAST MIDLANDS AIRPORT

WINTER OPERATIONS – SNOW PLAN

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AOI Owner - Airfield Operations

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GLOSSARY

ADM	Airport Duty Manager
AIP	Aeronautical Information Publication
AIS	Aeronautical Information Service
AOS	Airfield Operations Supervisor
ATC	Air Traffic Control
ATIS	Automatic Terminal Information Service
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
CFME	Continuous Friction Monitoring Equipment
EASA	European Aviation Safety Agency
EGNX	ICAO Code for East Midlands Airport
EMA	East Midlands Airport
HFAO	Head of Fire & Airfield Operations
GMC	Ground Movement Controller - ATC
ICAO	International Civil Aviation Organisation
IATA	International Air Transport Association
IMC	Incident Management Centre
MAG	Manchester Airports Group (Airport Operating Company)
METAR	Aviation Routine Weather Report
mm	Millimetres
MO	Meteorological Office
MT	Motor Transport
NATS	National Air Traffic Services Ltd
NOTAM	Notice to Airmen
OD	Operations Director
OiC	Officer in Charge
OPMET	Operational Meteorological
RFFS	Rescue & Fire Fighting Service
RTF	Radio Telephony
RTHP	Runway Taxiway Holding Point
RVP	Emergency Rendezvous Point
FSM	Fire Service Manager
SDM	Security Duty Manager
SNOWTAM	Snow Notice to Airmen
TAF	Terminal Aerodrome Forecast
VHF	Very High Frequency
ASR	Airfield Security Ranger

PURPOSE STATEMENT

The Winter Operations Plan details the measures to be taken by East Midlands Airport to enable aircraft operations to continue safely during snow and ice conditions. The Plan focuses primarily on the management of aerodrome facilities. This document is published in accordance with the requirements of CAP32 UK Aeronautical Information Publication and EASA 'Organisation and Operations Requirements for Aerodromes'.

1. INTRODUCTION

Inevitably, winter conditions on the airfield introduce potential hazards to aircraft operations and turnaround activity on the apron. Snowfall can impose significant restrictions on the availability of airfield capacity and can be expected to lead to the disruption of normal flight operations. In prolonged or severe snowfall, disruption can last for several days.

Whilst East Midlands Airport makes every reasonable effort to clear snow and ice from airside areas, it can be a lengthy process, especially when persistent or heavy snowfalls exist. It is therefore essential that all airside users are constantly aware that snow and ice may be present and take extra precautions as appropriate. General safety guidance is made available to all airside operatives in the format of an Operational Advice Notice, issued annually in conjunction with the Winter Operations Plan. It is the responsibility of operational managers to ensure this Notice is made available to all employees working or driving in external airside areas.

This plan concentrates on the planning, organisation and response to winter conditions and the general execution of the clearance of snow accumulations on the airfield. The treatment of frost or ice on the airfield requires a less extensive response. The procedures relating to such events are detailed in Section 12.

The plan also references activation of the Incident Management Centre and the processes for notifying airline customers and service partners of the airport operational status in the event of a disruption scenario.

2. PROCEDURE AND OBJECTIVES

The primary procedures and objectives during periods of snowfall or frost conditions are detailed below. In accordance with the National Snow Plan the clearance of snow and ice will be undertaken as follows (in order of strategic priority): -

a. Runway

b. Primary Taxiway Routings

c. Aircraft Parking Stands

d. Secondary Taxiway Routings

e. Ancillary Areas

2.1. Runway Surfaces

At East Midlands Airport the runway will only be returned to operational service once the removal of snow and ice contamination has taken place and the surface has been treated with anti-icing materials. Any remaining minor deposits of snow or slush in isolated places will be notified to aircraft operators by SNOWTAM and/or ATIS.

Assessments using Continuous Friction Monitoring Equipment (CFME) can provide inaccurate readings when undertaken on contaminated runways and when the air temperature is below +2 degrees centigrade. Additionally, there is no recognised correlation between CFME readings and the effects on aircraft braking. Therefore, UK regulation prohibits airport operators from providing CFME readings to pilots. ATC will be permitted to broadcast braking action reports provided by the pilots of previous aircraft movements. Such broadcasts will include the time of the observation and the aircraft type concerned. However, such information should be treated with caution.

In accordance with latest Civil Aviation Authority guidance, any contamination of surfaces with snow or slush will only be reported according to the percentage coverage, the depth and type of contaminant present on the runway(s). Measurements will be taken over each third of the runway, between 5-10 metres either side of the centreline (and away from any effects of wheel rutting). Conditions will be reported for each third of the runway length (i.e. Touch Down Zone, Mid-Point and Stop End). Contamination will be described as Ice, Dry Snow, Compacted Snow, Wet Snow, Slush or Standing Water. Measurement and the reporting of surface conditions will be carried out frequently during changing conditions to ensure pilots are in receipt of an accurate runway surface state report. This may require increased gaps in the traffic sequence in order to facilitate access to the runway by Airfield Operations personnel.

The height and location of any snow banks will be reported as soon as these are likely to affect safe manoeuvring by the most critical aircraft operating at East Midlands, i.e. the Boeing 777. The regulatory requirements for snow banks are shown in Appendix A.

2.2. Definition of Runway Contaminants

Contaminants are categorised and defined for the purposes of aviation in the CAP 32 UK AIP (Aerodrome Generic) at AD 1.2.2 paragraph 5.1.2. These allow subjective assessment to be made by personnel assessing the density of the contaminant, which is the most significant factor in determining the impact of the deposit on aircraft operations.

Ice: *water in its solid state, it takes many forms including sheet ice, hoar frost and rime (assumed specific gravity 0.92);*

Dry Snow: *a condition where snow can be blown loose, or if compacted by hand, will fall apart again upon release (assumed specific gravity less than 0.35);*

Compacted Snow: *snow which has been compressed into a solid mass that resists further compression and will hold together or break up into chunks if picked up. (assumed specific gravity 0.35 to 0.50);*

Wet Snow: *a composition which, if compacted by hand, will stick together and tend to, or does form a snowball (assumed specific gravity greater than 0.5);*

Slush: *a water saturated snow which, with a heel and toe slap down action with the foot against the ground, will be displaced with a splatter (assumed specific gravity 0.50 to 0.80);*

Associated Standing Water: *standing water produced as a result of melting contaminant in which there are no visible traces of slush or ice crystals (assumed specific gravity 1.0).*

2.3. Runway Clearance Priorities

During light snowfall or following a short duration of snowfall, EMA will endeavour to clear the runway and all associated taxiways of snow deposits. In heavy or persistent snowfall conditions, priority will be diverted to maintaining Runway and the taxiway links (Alpha 1 and Golf) equipped for low visibility operations (Category 2/3). Specific 'clearance priority' details are contained in Section 10 of this document.

2.4. Runway Safety

In order to preserve runway safety and in particular the integrity of Runway Taxiway Holding Points (RTHP'S), emphasis will be placed on clearing snow contamination from illuminated red stopbars. The primary objective will be to ensure RTHP's remain visible to pilots and vehicle drivers at all times, thus reducing the risk of runway incursions.

2.5. Snow, Slush and Ice Runway Surface Conditions Reporting

2.5.1 As soon as the presence of slush, snow ice and associated standing water is detected or observed, contaminated runway surface states will be reported to Air Traffic Control. The following RTF format will be used and the transmission will be made on the relevant VHF frequency. Runway surface states will never be passed to ATC by telephone.

2.5.2 The area in which runway surface conditions are to be assessed should approximate to the central two-thirds of the width of the runway extending lengthways from a point 100m before the aiming point to 100m beyond the aiming point for the reciprocal runway.

2.5.3 The surface condition report shall describe conditions sequentially for each third of the assessed area associated with the Runway to be used. An example would be, "Runway surface is ICE, SNOW, SNOW".

2.5.4 A brief plain language description of any notable quantity of contamination should be appended to the surface condition report.

2.5.5 Similarly, a brief plain language description of any notable quantity of contamination outside the assessed area (e.g. ice collected at the runway edge) should be appended to a runway surface condition report.

2.5.6 The runway surface condition reports should be made in accordance with the descriptions and guidance notes in the following table.

REPORTING TERM	**Surface conditions**
DRY	The surface is not affected by water, slush, snow or ice. *NOTE. Reports that the runway is dry are not normally passed to pilots. If no runway surface report is passed, the runway can be assumed to be dry.*
DAMP	The surface shows a change of colour due to moisture. NOTE: If *there is sufficient moisture to produce a surface* film *or the surface appears reflective, the runway will be reported as WET*
WET	The surface is soaked but no significant patches of standing water are visible. *NOTE: Standing water is considered to exist when water on the runway surface is **deeper than 3 mm.** Patches of standing water covering **more than 25%** of the assessed area will be reported as **WATER PATCHES.***
WATER PATCHES	Significant patches of standing water are visible. NOTE. Water patches will be reported when **more than 25%** of the assessed area is covered by water **more than 3 mm** deep.
FLOODED	Extensive patches of standing water are visible. *NOTE. Flooded will be reported when **more than 50%** of the assessed area is covered by water **more than 3 mm** deep.*
ICE	Significant patches of Ice are visible.
SNOW/SLEET	Whenever dry snow, wet snow or slush is present, an assessment of the mean depth over each third of the runway should be made to an accuracy of approx. 20 mm for dry snow, 10 mm for wet snow and 3 mm for slush.

2.5.7 **"The runway surface state is Touchdown Zone XXX% coverage, Contaminant Type, Depth XXX millimetres – Mid Point XXX% coverage, Contaminant Type, Depth XXX millimetres – Stop End XXX% coverage, Contaminant Type, Depth XXX millimetres"**

This information should be recorded on the following form.

East Midlands Airport November 2010

RUNWAY CONTAMINATION RECORD

ASSESSED AREA – as for Wet Runway Reporting
(central 2/3 of the runway from 100m before the aiming point to 100m beyond the far aiming point)

Date: **Time of assessment:** **Assessed By:**

RWY	TOUCHDOWN ZONE			MIDPOINT			STOP END		
	% Cover	Type	Depth	% Cover	Type	Depth	% Cover	Type	Depth
09									
27									

NOTES: Form to be used for assessing runway when contaminated by snow, slush or ice
Form to be used by whoever assesses the runway (eg. Ops, ATC, RFFS etc)
Form to be retained with other records in a manner to be determined.

EMA/ATC/ATSM/FORMC112

2.5.8 ATC are responsible for ensuring runway surface states are promulgated by SNOWTAM and by ATIS. As long as a state of snow, slush, ice and associated water exists, the initial SNOWTAM warning should be followed by further reports as stated below.

2.5.9 A SNOWTAM can be valid for 24 hours, and where no change occurs over 24 hours it should be repeated. Whenever a significant change occurs, a new SNOWTAM must be originated. All items must be completed including those that are unchanged, significant changes relate only to runway conditions, and are classified below:

a. Any changes in surface deposit, i.e., snow turned to slush, water to ice, etc.

b. Changes in depth greater than the following; 20mm for dry snow, 10mm for wet snow and 3mm for slush.

c. Any change in the available length or width of the runway(s) of 10% or more.

d. Any change in the distance apart of snow banks from the criteria declared to be the value from which reporting begins.

e. Any change in the serviceability of runway lighting caused by obscuring of the lights, with particular reference to the threshold.

f. Any other condition known to be significant according to local circumstances.

2.5.10 ATC also ensure accurate runway surface states are passed to flight crews via Essential Aerodrome Information (RTF). This is particularly important when conditions are rapidly changing and the latest ATIS broadcast or SNOWTAM becomes quickly outdated. SNOWTAMS are cancelled as required.

2.6 Taxiways

2.6.1 Taxiways will be cleared in accordance with the Clearance Priorities Plan detailed in Section 10. EMA will endeavour to clear taxiways to full pavement width, although it is possible that some operational taxiways will remain contaminated with snow as the clearing operation continues. Where contamination is such that Aeronautical Ground Lighting is not visible to pilots, or the surfaces are contaminated with ice, the taxiway will remain closed until such time they have been cleared and treated.

2.6.2 Priority will also be diverted to ensuring pavement areas between the taxiway and apron stands are clear of snow and ice in order to improve traction for tugs conducting pushback and towing manoeuvres.

2.7 Pavements General

Where runways and taxiways are cleared to less than the full width, aircraft and operators shall be informed of the width available for use and any part of the runway or taxiway system that is not of sufficient cleared width for the operation of specific aircraft shall not be used.

2.8 Aprons and Airside Roads

2.8.1 Separate sweeping equipment to that used for clearing runways and taxiways will be used to treat airside roads and apron stands. Where practicable, aircraft stands will be cleared of snow after departure. The Airfield Operations Supervisor will manage the clearance and treatment of aircraft stands in accordance with apron capacity needs.

2.8.2 Stands will be checked for suitability for use before aircraft arrival, additional treatment may take place before the aircraft is parked. A clear area must be provided for steps, to allow safe disembarkation of passengers along marked walkways or to waiting buses. De-icing granules will be available to enable Handling Agents and Service Partners to treat isolated patches of ice and create safe passenger routes. As far as possible, stands will be cleared to full width for the maximum size aircraft, therefore minimising hazards during aircraft turnaround.

2.8.3 Airfield Operations will be ultimately responsible for determining whether a stand is "serviceable" and available for use by aircraft. A serviceable stand is one which has been *"cleared of snow and ice contamination, and has been appropriately treated with antI-icing chemicals to prevent further ice formation. The cleared area should account for the footprint of the maximum size aircraft and the areas used by Ground Service Equipment during the turnaround process. Safe access around the aircraft and its wingtips will be maintained as far as possible. Isolated patches of snow and ice may be present and where possible these areas will be treated using the granular de-icing products available."*

2.8.4 It is not possible to fully clear a stand which is already occupied by a parked aircraft and therefore personnel must be extra cautious when preparing such aircraft for departure. The policy outlined in red text above is therefore applicable to arriving aircraft only.

2.8.5 Rock salt cannot be used to treat airside roads due to its highly corrosive nature. Tractor mounted brushes and ploughs will be used on airside roads, supplemented by the use of liquid and solid anti-icing chemicals. The chemicals permitted for use on the airfield are known to be less effective at thawing ice deposits; therefore it is essential that airside drivers take extra caution when using the airside road system and during aircraft turnaround.

2.8.6 A number of apron areas have been designated as "snow dumps", ensuring adequate space can be created to store snow cleared from apron stands and taxiways. As far as possible, snow will be brushed from the head of stand, towards the rear of stand and then ploughed forward to a designated 'snow dump'. The purpose of this strategy is to minimise the impact of snow banks on the equipment parking areas. The locations of designated snow dump areas are detailed in Appendix B.

2.8.7 Stand 4 / 5 will be utilised as a designated forward holding and mobilisation point for the snow fleet from 01st November – 31st March. At all other times, this stand will remain in use as an aircraft parking area. The HFAO will coordinate the use of this stand and mange access and egress for the snow fleet users.

2.9 Passenger Walkways

Passenger walkways will also be cleared of snow and/or de-iced in accordance with the aerodrome snow plan. Should any operational area be found to be icy it should be reported to the Operation Control Room on ext. 2973.

3. FORWARD SEASONAL PLANNING (2018/2019 SEASON)

Planning for the winter season is an ongoing process within EMA. However the following steps will be taken in readiness for the onset of winter: -

- Between April and August, the Head of Fire and Airfield Operations will host meetings to review the resources and plans and agree any changes.
- Training will commence in September for staff operating snow and ice clearing equipment.
- Tabletop exercises will be conducted from September and throughout the season to test and review various components of the Winter Operations Plan.
- Consultation will take place with Airlines & key Service Partners in November.
- The annual Winter Operations Plan and Operational Advice Notice will be published by November 1st, following which all operators must ensure that their staff are conversant with its content.
- At the end of each winter season, the Head of Fire and Airfield Operations will organise an 'internal wash-up' review, the purpose of which will be to review the Winter Operations Plan in the light of experience. As part of this process, airlines and handling agents will be invited to provide EMA with feedback.

4. IMPLEMENTATION

The Winter Operations – Snow Plan will be updated on an annual basis and will be implemented by 1st November each year (or sooner if conditions require). In order to ensure winter readiness the actions detailed below are required to be undertaken throughout the year and during the winter period.

4.1 Serviceability of Equipment

4.1.1 The MT section is responsible for ensuring that all equipment is checked and made ready for use by the 1st November each year. Thereafter, it is the responsibility of RFFS to operate the equipment on a monthly basis through to April to help maintain a state of full serviceability. All equipment is to be run to simulate as near to operational conditions as possible. For this purpose, the West Apron may be used once clearance has been gained from ATC.

4.1.2 All equipment will be checked at least twice weekly. RFFS will check the equipment every Tuesday and the MT section will check the equipment every Thursday of each week. During these checks, any defects found are to be reported to the Motor Transport Department for rectification. Records are to be maintained showing oil, water and fuel levels. In addition to this, the Motor Transport Department is to provide the HFAO with a weekly equipment status report. The contents of this report are to be duplicated onto the equipment status board located in the Station Manager's office to enable accurate briefings to take place.

4.2 Training

4.2.1 All persons who may be called upon to act as drivers during snow clearing operations must be holders of a current airside driving permit for the area they are required to clear, and have been given adequate instructions in snow clearing techniques, plough blade clearance and any other information considered pertinent.

4.2.2 RFFS and Airfield Operations department personnel will use all equipment on a monthly basis, therefore receiving regular training on each piece of equipment. This will avoid last minute refresher training of all personnel just before the anticipated winter period and maintain/improve existing skill levels.

4.3 Personnel

4.3.1 Personnel requirements for snow clearance will vary depending on equipment availability and the prevailing conditions. It will be the responsibility of those controlling the operation to ensure that the Human Resource is closely matched to the snow clearance tasks. The RFFS Station Manager on receipt of a definite snow warning will use his knowledge and experience to call in additional staff as required.

4.3.2 Where one unit is working in isolation, a second crew member will be required. The snow blowers will be a one person operation although an additional crewmember may be required if wet snow conditions require regular clearing of chutes. All equipment operatives require specialist training and ongoing refresher training each year. RFFS will be the operators of the primary clearance equipment. DHL will provide assistance to RFFS for snow clearing operations on the western apron when available.

4.3.3 As Snow Coordinator, the HFAO will be responsible for putting the snow plan into operation and the RFFS Station Manager will be responsible for the running of the plan. The first point of contact for information regarding clearance operations should be the Control Room (extension 2973).

4.3.4 Clearance of pathways on the apron will be carried out under the direction of the AOS in liaison with the HFAO. The Airfield Security Rangers will carry out this task using shovels and a de-icer. It will be essential to provide a thorough briefing and ensure that they are equipped with suitable warm clothing.

4.3.5 If a personnel shortage exists, the AOS may take the place of one of the other operatives. They may also operate the de-icer equipment when required. Additional personnel, if and when available, may be employed with hand shovels clearing any build-up of snow and slush around lights, drains etc.

4.3.6 Personnel for clearance operations will be from RFFS, DHL (west apron) and contractors.

4.3.7 The RFFS Station Manager is to liaise with Air Traffic Control and/or the Operations Control Room at intervals not exceeding 30 minutes throughout any periods of snow closure to ensure that the latest information is passed. The Station Manager is to ensure that wherever possible opening/closing times are passed so that airline operators may make operational decisions based on accurate information.

5. RESPONSIBILITIES

5.1. General

East Midlands Airport is responsible for maintaining an effective Winter Operations Plan and communicating it to all operators and service partners. EMA RFFS will control and manage snow and ice clearing activities when in operation.

5.2. Key Postholder Responsibilities

The **Head of Fire and Airfield Operations (HFAO)** is responsible for the planning, organisation and annual review of the Winter Operations Plan.

The **HFAO** is also responsible for the aerodrome response under the Winter Operations Plan and for ensuring that key postholders and Operations staff are fully conversant with their roles, operational procedures and regulatory requirements.

In addition, the HFAO is responsible for:

- Provision of equipment and resources for anti-icing and snow clearing on the airfield (in conjunction with the Operations Director).
- Mobilisation of snow fleet to its designated forward holding area on Stand 4 / 5. (Seasonal holding for November to March only).
- Ensuring that arrangements are made for suitable supplies of anti-icing/de-icing materials throughout the winter period.
- Ensuring that snow clearing /anti-icing equipment is checked /serviceable for use by 1st November each winter.
- Ensuring that sufficient stocks of anti-icing and de-icing materials are maintained throughout the winter season

- The training of all EMA staff using the specialist snow and ice clearing equipment.
- Coordination/direction the snow or ice clearance operation (as Snow Coordinator) and overseeing allocation of equipment and personnel.
- Communicating tactical activity and decisions, as applicable with the OD.
- Determining and coordinating resource needs in conjunction with the FSM and RFFS SM.

The **RFFS Station Manager** is responsible for**:**

- Monitoring meteorological conditions, forecasts and warnings. Continual assessment of surface temperatures to determine treatment priorities.
- Determining the need for activating RFFS staff call-out according to the threat of snow and ice.
- Initiating airside snow clearance or ice treatment operations.
- (Designated deputy / 'Snow Coordinator' for HFAO) Coordination and Direction of the snow or ice clearance operation and overseeing allocation of equipment and personnel.
- Communicating tactical activity and decisions with OD.
- Determining and coordinating resource needs in conjunction with the HFAO.
- General welfare of staff engaged on standard shift duties.
- Promulgating any changes in operational status of the airfield to ATC, ADM or IMC (if active).
- Ensuring that any equipment faults are reported to MT and maintaining log of equipment/plant that is in/out of service.
- Taking regular measurements of anti-/ de-icing materials and reporting stock levels to HFAO.

The **Airport Duty Manager** is responsible for:

- Activating the Incident Management Centre (if required) via the AI control point notification.
- Ensuring the Operations Control Room Operatives are conversant with their responsibilities under the Winter Operations Plan.
- Ensuring the Operations Control Room maintain detailed logs of clearance and treatment activities/materials used.
- Determine the need for activating staff call-out procedures according to the threat of snow and ice.
- Ensuring communication with RFFS SM, AOS and ATC regarding stand clearance and treatment priorities and availability / operational status of aircraft parking stands is maintained.
- Ensure provision of regular airfield status reports to Terminal / IMC
- Ensuring that information relating to the operational status of the airfield is promulgated to airlines / service partners and Press Office in conjunction with IMC (if active). Such information should include details of snow closures and ATC flow restrictions.
- Ensuring surfaces around security gatehouses remain safe for vehicles and pedestrians.
- General welfare of staff engaged on standard shift duties.
- Initiating and managing the Landside snow clearance or ice treatment operations.
- Liaising with Car Park Operations to determine priorities for gritting operations.
- Ensuring that ongoing Terminal landside and Car Park operations are conducted safely.
- Implementation of Passenger Disruption plans, contained within the Airport Emergency Plan.

- Implementation of the internal communications process during severe snowfall situations, therefore ensuring the entire EMA workforce is conversant with proceedings.

The **Airfield Operations Supervisor** is responsible for:

- Coordinating/informing stand availability and the operational status of aircraft parking stands between ATC, the Operations Control Room (stand allocation) and IMC (if active).
- Ensuring that staff are deployed in accordance with operational needs.
- Conducting assessments of runway surface state in accordance with CAA / EASA requirements.
- Ensuring surface inspections of the Manoeuvring Area are conducted and conditions monitored to ensure that ongoing aircraft operations are conducted safely.
- Conducting and recording regular checks of the operational status of aircraft parking stands, ensuring sufficient clearance has taken place to facilitate turnaround of the maximum size aircraft intended to use that stand.
- Coordination of and communication with apron snow clearing or anti-icing teams in operation.
- Conducting and recording routine surface inspections of airside roads, equipment areas and passenger walkway areas.
- Ensuring agreed stands are closed to facilitate the implementation of snow dumps.

- General welfare of staff engaged on standard shift duties.
- Reviewing stand allocation plans (in conjunction with the Operations Control Room) during periods of prolonged snowfall and operational disruption.
- Ensuring snow clearance / ice treatment of airside roads and walkways
- Ensuring stock of Airside de-icer granules is maintained and available

The **Air Traffic Control Watch Supervisor** is responsible for:

- Monitoring meteorological conditions, forecasts and warnings and disseminating them as necessary.
- Providing meteorological reports through the OPMET system.
- Switching on airfield ground lighting when snowfall commences.
- Ensuring accurate reports of contaminated runway surface state / airfield status are promulgated to pilots using ATIS and essential Aerodrome Information via RTF.
- Ensure communications with AOS, RFFS Watch Manager and the Operations Control Room are maintained regarding stand availability and operational status of aircraft parking stands.
- Promulgate any changes in operational status of the airfield via SNOWTAM and NOTAM.
- Coordination with OD/HFAO/RFFS Watch Manager to establish priorities for snow clearing and to determine the tactical operational capability and flow restrictions to aircraft movements.
- Coordination with the Scottish Control Centre concerning disruption to aircraft movements during snow clearing operations.

The **Motor Transport and Fuel Manager** is responsible for:

- Ensuring that all winter operation equipment is checked and serviceable for use by 1st November each winter.
- Ensuring that snow clearing and anti-icing equipment is properly maintained and has an adequate fuel supply.

- Conducting serviceability checks for all snow clearing and anti-icing equipment after each use.
- Provision of trained staff for attending to running repairs to snow clearing and anti-icing equipment when in operation.

The **Terminal Engineering Supervisor** is responsible for:

- Taking appropriate actions to contain drainage systems and thereby prevent contamination of watercourses.
- Providing resources to support contingencies in the event of unexpected failures of essential infrastructure, systems and facilities.

Airlines and Handling Agents are responsible for:

- Ensuring the Winter Operations 'Operational Advice Notice' issued by East Midlands Airport at the beginning of each winter season is circulated amongst all 'front-line' airside workers and incorporated in daily shift briefings and tool-box talks.
- Ensuring operational teams are continually briefed with details of weather warnings disseminated by East Midlands Airport.
- Verifying that aircraft parking stands are suitable for use immediately prior to an aircraft arriving on stand, including pedestrian walkways, access and egress.
- Reporting observed snow or ice contamination on aircraft parking stands to the Operations Control Room on ext. 2973.
- Advising the Operations Control Room (x 2973) in advance of carrying out any aircraft de-icing activity and completion of EMA form OCR7 to report chemical usage during aircraft de-icing operations.
- Ensuring that passengers are not exposed to undue hazards whilst being escorted across the apron for boarding or disembarking, including safety of passenger steps.
- Advising passengers of inclement conditions and the presence of snow deposits where snow is falling or has recently fallen.
- Making use of de-icing materials stored in yellow bins to support the snow and ice clearance effort.
- Ensuring that ground service equipment is parked in marked equipment areas. Pre-positioned equipment on vacant and occupied stands can impede snow-clearing operations.
- Supporting snow clearance activities by providing resources to push back aircraft, thus providing access to parking stands by snow clearing machinery.
- Where possible, assist in the clearance of snow on passenger walkways and access / egress routes.

All **Airside Staff** are responsible for:

- Extra care should be taken when operating airside, or approaching aircraft, during periods of snow or in icy conditions, vehicle speeds should be reduced accordingly.
- Adhering to the guidance and procedures contained in the Winter Operations Plan and Operational Advice Notice issued at the beginning of each winter season, and periodically throughout the season.
- Reporting any areas that are potentially unsafe to the Airfield Operations Supervisor or via their operations office.
- Driving with extreme caution at speeds that take into account the surface conditions and the proximity of aircraft and personnel.

- Minimising vehicle movements over fresh snow as far as practicable. This prevents compaction of snow and thereby helps to make treatment and removal easier to achieve.
- Where possible, assist in the clearance of snow on passenger walkways and access / egress routes.
- Ensuring that ground service equipment is parked in marked equipment areas. Pre-positioned equipment on vacant and occupied stands can impede snow-clearing operations.

NOTE:

As well as de-icing granules, Silica Sand may also be used on passenger walkways and apron stands.

Silica sand has been specially prepared for use on an Aerodrome. Although this product has little thawing characteristics, it will provide greater friction properties to surfaces, when applied to areas where snow and icing is present.

6. RESPONSE INITIATION & NOTIFICATION

6.1. Weather Forecasts and Warnings

Meteorological warnings of snow, frost or freezing conditions are supplied by the Meteorological Office, Exeter on a 24 hour basis.

The method of dealing with meteorological warnings for ATC is laid down in MATS Part 2

Constantly updated forecasts are updated to and can be viewed by utilising the 'Open Runway' system.

6.2. Adverse Weather & Potential Disruption Notifications

The notification will usually take the form of an email unless the warning is received within 2 hours of potential impact, in which case it will be sent by SMS message and email.

The following weather warnings will be issued via AICP:

Thunderstorms	All warnings to be put out on AICP.
Snow	All warnings to be put out on AICP.
Strong Wind / gales	Strong wind warnings over 40 knots only to be issued via AICP.
Extreme cold / heat	All warnings to be put out on AICP.
Volcanic ash	All warnings to be put out on AICP.
Fog	No weather warnings to be issued via AICP. In the event of operational disruption this will be managed under current disruption procedures.
Ice / frost / hail	No weather warnings to be issued via AICP.
Heavy rain	No weather warnings to be issued via AICP.

In addition to the above, in the event that the airport is notified of an event which could cause operational disruption a notification will also be distributed. Examples of this could include periods of industrial action, airspace closures, major incidents on the road network etc.

If you would like your company to receive these notifications, please could you send the following details to laura.tucker@eastmidlandsairport.com:

Name, company, mobile telephone number, email address

Please note that this is restricted to 2 contacts per company. As these will be sent on a 24/7 basis it is recommended that the details of on duty personnel are used rather than senior managers who may already receive emergency notifications via AICP.

6.3. Dissemination of Airport Weather Warnings

Should such warnings be received or freezing conditions be observed, details will be disseminated to airlines, operators and staff, via Chroma 'yellow banner'.

6.4. Local Readiness Procedures

Throughout the winter months ATC will continually monitor the weather forecast to determine the potential threat to airport operations.

During each shift, the RFFS SM will also conduct a winter readiness check to confirm the status of the snow fleet and the available stock of anti-icing media. The stock of liquid anti-icing media should be checked. A summary of each winter readiness check should be included in their daily shift report, thus appraising senior management of the airport readiness state.

6.5. Strong Wind and Gale Plan

During the winter months, there is an increased likelihood that the aerodrome will be subject to wind related disruption. Any notification of strong winds via the Met Office will be promulgated by the Operations Control Room via Chroma banners. Where necessary, conference calls may be initiated.

East Midlands Airport will carry out actions detailed within the Aerodrome Manual under an Airside Operational Instruction (AOI23) 'Inclement Weather Procedures'. This AOI also outlines Non-standard parking provisions.

6.6. Early Warnings of Snow

If a risk of snow with accumulations is indicated by the forecast within a three-day period the HFAO will brief the Operations Director, RFFS Station Manager, Airfield Operations Supervisor and Airport Duty Manager.

The ADM via the Operations Control Room will promulgate the following warning to Airport User's via Chroma Fusion. As an early warning of snow poses no immediate threat to airport operations, this message will only be issued between the hours of 08:00hrs and 22:00hrs.

"EGNX/EMA Early Warning - snow and ice conditions expected from *Date/Time* to *Date/Time*".

The Snow Co-ordinator will, in conjunction with the Motor Transport and Fuel Manager check the status of the snow fleet and consider the need to activate personnel for Stand-by.

6.7. Winter Threat Status System

The Snow Co-ordinator will initiate the airport response to adverse weather as dictated by the weather forecast, specific warnings or actual conditions. In response to the warnings received, the 'Winter Threat Status' process is as follows: -

Winter Threat Status (WTS)	Situation and Actions to be taken
Level 1 (Warning of Snow Preparatory state)	• Possibility of snow in the midday 48 -72-hour forecast. • HFAO will brief OD, RFFS SM, AOS and ADM. • HFAO / RFFS SM to ensure sufficient personnel placed on standby to provide snow clearance resource. • Ensure the snow fleet is in a preparatory state for mobilization **Note:** Stand 4 / 5 area will be made available 1st November – 31st March as a designated parking area for the snow fleet. • ADM to review landside plan to ensure resource and pre-emptive treatments for landside infrastructure.
Level 2 (Warning of Snow)	• HFAO / RFFS SM to promulgate "EGNX/EMA Winter Threat Status – Level 2, snow and ice conditions expected from *Date/Time – provision of snow dump locations may result in increased remote aircraft parking"* by Chroma Fusion. • RFFS SM will activate personnel Call-out. • ATC / AOS to initiate scheduled closure of stands to accommodate snow dumps. • ADM to advise airlines/service partners on the situation.
Level 3 (Snow with accumulations)	• Snowfall with evidence of accumulations • Personnel allocated to equipment • Snow Clearance and Ice Treatment in progress • ATC to issue SNOWTAM • ADM to initiate the Passenger Disruption Plan. • HFAO / RFFS SM to promulgate "EGNX/EMA Winter Threat Status – Level 3, snow and ice conditions will affect the airfield until Date/Time – snow clearance and ice treatment in progress, updates via x 2973" by Chroma Fusion.
Level 4 (Major disruption)	• Significant snow accumulations • Prolonged Airport Closures possible • Significant reduction in airfield capacity • Major Disruption expected, possibility of airfield closures > 3 hours, SNOWTAM reissued as required • IMC activated • HFAO to promulgate "EGNX/EMA Winter Threat Status-Level 4, significant disruption expected, IMC active" by Chroma Fusion.

6.8 Airport Ice Warning System (Ice Only Threat)

In the event the weather predicts a threat of surface ice, or ongoing prevailing conditions indicate hazardous surface conditions, an "Ice Warning" message will be displayed on the CHROMA FUSION message bar. The message will detail the duration of threat from date/time to date/time. In the event ice conditions prevail over several days, a reminder warning will be issued periodically (at least once every 12 hours) to ensure all shift groups receive details of the warning.

6.9. Notification Cascade

If a significant threat of Snow is indicated by the forecast (i.e. WTS Level 2) ATC will notify: -

- Head of Fire and Airfield Operations
- Fire Service Manager
- RFFS Station Manager
- Airfield Operations Supervisor
- Air Traffic Services Manager
- Airport Duty Manager

The Airport Duty Manager will notify

- Security Duty Manager
- Car Parks Manager
- Passenger Services Manager

The control room will follow the Adverse Weather and Potential Disruption Notifications procedure

Should snow accumulate without warning ATC will notify: -

- RFFS Station Manager
- Airport Duty Duty Manager
- Head of Fire and Airfield Operations
- Fire service Manager

The Head of Fire and Airfield Operations will brief the Operations Director and Press Office Duty Officer.

The Operations Director will brief the Managing Director.

The Airport Duty Manager will brief the Customer Services & Security Director.

The Managing Director will brief the MAG Executive Committee (EXCO) and Chief Executive Officer, as appropriate.

6.10. Operational Briefing

When snowfall is expected and circumstances allow, the HFAO will chair a 'pre-meeting' alongside the FSM & RFFS SM to verify that all available snow equipment is ready for immediate use and to brief clearance teams on:

- Clearance Priorities, techniques to be employed and the extent of clearance desired over those areas.
- The importance of improving braking action.
- The importance of minimizing the possibility of aquaplaning
- Minimising the height of snow banks (whenever/wherever possible below 25cms).
- A warning about the avoidance of damage to runway and taxiway lighting.
- The location of Snow Dumps (if different to those detailed in the Winter Operations Plan) and
- Methods of communication.

The HFAO will also provide an overview of the weather forecast (severity, duration etc.), and procedures for the mobilisation and forward holding of the snow fleet. The HFAO is responsible for ensuring the appropriate communications channels are established and monitored in readiness for snowfall.

Whenever possible, a hard copy 'SNOW BRIEF' will be prepared in advance of snowfall. A copy of the brief will be issued to all staff engaged in snow clearing operations.

The Airfield Operations Supervisor will liaise with the ADM/Operations Control Room to discuss the stand allocation plan for the forthcoming period and determine the priorities for inspecting, clearing and treating stands. The RFFS SM will allocate personnel to snow clearing teams and equipment.

All personnel standing by for snow-clearing duties will remain in situ in anticipation of a request from the HFAO/RFFS SM to initiate snow clearance operations.

6.11. Radio & Telephone Communications

The HFAO/RFFS SM will ensure all Snow Clearance staff are transmitting on the appropriate radio frequencies as follows: -

- Runway Clearance Teams (UHF Channel 4)
- Stand Clearance Teams (UHF Channel 5)

The HFAO and RFFS SM will hold their usual mobile telephones. The Control Room will be responsible for the central coordination of inbound and outbound messages via Landline (x2973). The HFAO / RFFS SM will monitor UHF CH4 and 5.

6.12. Downgrading of Winter Threat Status Level

In order to ensure airports users and EMA Senior Managers are conversant with the latest threat status, the HFAO must ensure messages displayed on the Chroma Fusion message bar are issued to confirm any downgrade in threat status. For example, if Winter Threat Status Level 4 is in force, snowfall has ceased and airport operations are relatively normal, message should be issued confirming the most relevant threat status (Level 2 if further snow is forecast). The Chroma Fusion message should include a plain English statement of the latest position, e.g. "EGNX: Snowfall ceased, ice will continue to affect the airfield from XXXXX to XXXXX" or "EGNX: Snowfall ceased, ice will continue to affect the airfield from XXXXX to XXXXX, further snowfall expected from XXXXX to XXXXX".

7. ORGANISATION & STRUCTURE

Overall responsibility for the management and coordination of snow clearing operations rests with the HFAO as Snow Co-ordinator in conjunction with the Operations Director, under the command of the rostered RFFS Station Manager. Management of snow clearing operations will operate from the Fire Station. RFFS SM is responsible for managing and coordinating the personnel and equipment involved in the snow clearing activity.

Full details of the East Midlands Airport 'Winter Operations Organisational Structure are contained at Appendix C.

7.1. Snow Coordinator

As Snow Co-coordinator, in addition to the management of snow clearing operations, HFAO will also coordinate the distribution and exchange of information on operational matters during periods when the airport is affected by snow.

Snow Co-ordinator, or RFFS SM as designated deputy will allocate resources to snow clearing teams as required. All communication from customers and service partners regarding snow-clearing operations should be routed via the Operations Control Room.

In addition, the Airfield Operations Supervisor will provide a link which enables coordination of the clearance of snow from aircraft parking stands according to operational needs. The AOS will also be responsible for updating the Snow Coordinator on the overall status of aircraft parking stands.

8. SURFACE INSPECTION REGIME

8.1. General Policy

Once the Winter Operations Plan has been activated, or when freezing conditions are anticipated, a process of routine inspections of airport surface areas will commence. These inspections will take place at regular intervals and will be logged. Whilst not practicable to carry out continuous monitoring of all areas, the inspections are determined to be suitable for aiming to keep as many of the accessible surfaces as possible free from ice and snow.

8.2. Division of Responsibilities

In order to ensure accurate records of surface inspections are maintained, the Operations Control Room will maintain records of all operational decisions taken (i.e. runway / taxiway closure and reinstatement, details of areas cleared and treated, records of surface inspections, etc.

Airfield Operations are responsible for ensuring that inspections of all airside areas (inc stands, roadways and passenger walkways) are undertaken at intervals of not less than two hours.

The RFFS SM will also be responsible for conducting and recording inspections of Fire Station Forecourts, Emergency Access Routes and Rendezvous Points.

Areas of concern that are identified during the inspection process will be relayed to the Snow Coordinator for clearing/treatment action to take place. If necessary, areas will be closed to pedestrians or traffic until treatment has taken place. Inspection frequency may be altered at the discretion of the Snow Coordinator if conditions are rapidly changing.

9. SNOW CLOSURE POLICY (SNOCLO)

9.1. Initiation

The presence of even small accumulations of wet snow can significantly affect the performance of aircraft. A plan to clear the runway will be initiated when the depth of accumulation is expected to exceed 3mm of slush or wet snow. The time of any snow closure will be notified to ATC and the airport community as far in advance as possible thus enabling operators to manage pushback, turnaround and de-icing activities in the most efficient manner.

Flight operations may continue until such time the runway is formally closed for snow clearance, however, once snow has started to accumulate continued operations will necessitate frequent inspections of the runway to ensure accurate surface state reports are available to pilots. Surface State reports will include the coverage, type(s) and depth of contaminant present in each third of the runway, as described in Section 2.1. The decision to close a runway will account for the need to remove contaminants from the runway surface in a manner which minimises operational impact, but considers the risk that any accumulations of slush, standing water or wet snow may freeze if left untreated.

9.2. Light Snowfall

During or after a light snowfall, experience has demonstrated that a period of approximately 90 minutes is required to clear and anti-ice the runway. In these circumstances a 'SNOCLO message' will be issued by SNOWTAM & NOTAM with an expected duration of 90 minutes. This will be accompanied by a message displayed on the Chroma Fusion system.

9.3. Prolonged or Heavy Snowfall

During or after heavy snowfall, a longer duration of snow closure may be necessary. In these circumstances, a 'SNOCLO message' will be issued by SNOWTAM & NOTAM promulgating the expected duration of closure. If circumstances dictate, the Snow Coordinator will consider the need to extend the estimated closure duration. This decision will be agreed between the OD (if present), Snow Coordinator and Air Traffic Control. The 'SNOCLO Matrix' in Appendix H details and estimated period of airfield closure dependent on the depth of snow accumulation present on airfield surfaces.

9.4. Runway Possession

Whilst snow clearance is in progress on the Runway it will be closed by ATC and will remain under the control of the Head of Fire & Airfield Operations or the RFFS Station Manager in the absence of the Head of Fire & Airfield Operations. The remainder of the Airfield Manoeuvring Area will continue to be under ATC control. The Runway will remain closed until sufficient clearance of the Priority Areas detailed in Section 10.1 and appendix B have been completed to allow safe operations to resume.

9.5. Runways – Return to Service Procedure

Snow Coordinator / RFFS SM will adopt the following procedure when reinstating a runway for operational use under the control of ATC.

1. Ensure that the runway surface has been inspected for FOD and is safe for use by aircraft.

2. Ensure that all Snow-clearing Vehicles have vacated the runway. The RFFS SM will confirm that all Snow-Clearing vehicles are aware of the operational status of the runway by making a general broadcast on Channel 4. Appropriate read-backs must be obtained to confirm the information has been received and understood by all parties.

3. Ensure, when necessary, that the Aerodrome has been safeguarded for Category 3 operations and that all personnel are aware of the LVP State in force.

4. Undertake a confirmatory runway inspection to verify the points 1-3 are in order.

5. Confirm that an appropriate level of Fire Category is available.

NB. Upon closure RFFS will deploy personnel to undertake snow clearing duties and therefore the RFFS Station Manager must liaise with ATC to determine the available level of Fire Category before allowing operations to continue. Subject to the schedule of movements (i.e. the maximum size of aircraft expected), the Snow Coordinator / RFFS SM may elect to declare a reduced level of Fire Category to allow a limited number of RFFS personnel to continue snow-clearing duties. Any reduction in Fire Category must be promulgated to operators via Essential Aerodrome Information (RTF) and NOTAM.

During snow clearing operations, any messages passed ***between*** RFFS crews operating snow vehicles will be made via Channel 6 (RFFS 'BA' channel). This is to avoid excessive RT traffic on Channel 4.

On completion of actions 1-5, RFFS SM will make a RTF transmission directly to Air Traffic, stating:

"Runway XXX is serviceable and available for use under your control. All vehicles have vacated. The surface state is XXX/XXX/XXX (plus amplifying comments)".

This message must not be made by telephone.

10. SNOW CLEARANCE - PRIORITIES & TECHNIQUES

10.1. Manoeuvring Area Clearance Priorities

In accordance with the policy and objectives at Section 2, clearance operations will commence immediately after the plan has been put into action. Clearance priorities will always commence with the runway using all available equipment and would then proceed on to the taxiways and aprons.

10.1.1 Runway 09/27 (with access to runway for fire appliances). The aim is to clear a full width 45 metres “black top” condition as soon as possible along the entire runway length. Snow banks should be no higher than 25cm (10 inches) and particular attention is given to the runway ends to prevent such build-ups. The height and distance apart of snow banks are to be reported to ATC, as soon as they are likely to affect safe manoeuvring by the most critical aircraft using the aerodrome.

10.1.2 The following instructions are intended as a guide as to the techniques to be used:

1. All combinations (prime movers sweeper/blowers) will move in echelon from the upwind edge of the runway working downwind across the runway, working 09/27 until clearance operations are complete. (Refer to snow plan map runway/taxiway). Every endeavour must be made to keep the drain pit gratings clear along the southern edge of the runway.

2. The approximate clearance width of 4 ploughs in echelon is 16 Metres. Runway width to be cleared 46 metres, 153 feet minus the initial sweep of the single unit 14 feet leaves 139 feet. Therefore, it will take approximately 3 passes to clear the required 45-metre width. Similar calculations for the taxiway would mean completing 2 passes on the taxiway.

3. Four vehicles fitted with 16' ploughs and towing the sweeper/blowers will lead the clearance operation and will move, as far, as is practicable, in echelon.

4. The blades of the ploughs will, when dealing with snow, have been set at ½" ground clearance such that each plough will reduce the snow depth to a depth with which the sweeper/blowers can readily deal.

5. Runway clearance operations will continue on the runway as long as weather conditions require and/or until the bulk of precipitants have been removed beyond the runway edges.

6. Hand clearing around the runway lights may be necessary and all available personnel are to be called upon to assist.

7. As mechanical clearing may leave some patches and rutting of compacted snow, the plough/sweeper combination should continue operations on the runway if necessary after the other vehicles have completed their work.

8. If, during clearance operations, the snow is melting, every effort must be made to assist the drainage of water, and it may be necessary to provide channels through any snow between the cleared area and the drainage channel at the south edge of the runway.

9. The RFFS Station Manager is to keep ATC advised on the progress of operations and particularly if the cleared width of 45 metres has not been achieved, and/or the height of significant snow banks exceeds 25cm (10 inches), and/or the depth of slush/standing water on the runway has reached or exceeds a depth of 3mm. (AIP AD 1.2.3)

10. To ensure the snow cutter can clear snow banks effectively, the first and last sweep are to be kept away from the runway edge lights so as not to cover them over with snow.

11. Snow banks on the north edge/side of the runway, east of the ILS Glide path aerial may affect/restrict the use of the ILS. The Station Manager is to inform the Air Traffic Engineer of any snow banks in this area. They in turn will advise ATC of any restrictions

10.1.3 Following on from the runway clearance, priorities will move to taxiways and bellmouths. These priorities will depend on the time of day. During daytime operations Sierra and Romeo will be the priority route. Night-time operations would prioritise Hotel and Juliet / Whiskey and Victor.

Access to Airport rendezvous points should be maintained during clearance operations.

10.1.4 Remainder of parallel (Alpha) taxiway system, initially to allow access via Mike taxiway.

10.1.5 Remainder of taxiway system (including access to maintenance area).

10.2 Apron Clearance Principles

10.2.1 General Principles

Whenever a threat of snow with accumulation is forecast, stands 1, 23 and 33 may be closed to aircraft and reserved for storing cleared snow.

Persistent or Heavy Snowfall

In the event a severe snowfall scenario is forecast, additional stands may be closed to facilitate the prompt and efficient movement of snow from high priority stands. When conditions allow, snow dumps will be moved to more permanent storage locations.

Snow clearance plans along with the location and distribution of snow dumps are detailed in Appendix B.

Storage of Snow on Grassland Areas

Storage of cleared snow on grass areas is to be avoided wherever possible, snow should be positively swept into drainage systems that collect run-off and contaminants for containment.

Stands used for storing cleared snow will remain closed until such time a natural thaw occurs, or snow dumps can be moved to an alternative storage location. These areas may be adjusted according to the severity and longevity of snowfall.

10.2.2 Apron and taxiway lights are to be switched on at night whilst clearance operations are in progress.

10.2.3 Operators should note that if a Sicard unit is used in conjunction with a prime mover fitted with a 10ft plough then the brush should not be excessively loaded.

10.2.4 The AOS in conjunction with ATC will determine the clearance objectives with regard to apron priorities, i.e. which apron to clear first depending upon stand allocation etc. (see Appendix 1). The RFFS may have personal and equipment available to assist, if fire category cover allows.

10.2.5 A black top condition is not necessarily to be the intention of the apron and taxiways, except at the holding points on the taxiways where aircraft might carry out run-ups. Such run-up areas are to be cleared to black top conditions.

10.3 Apron Clearance Priorities

The following is a basic clearance plan, which may require adaptation to suit prevailing weather conditions (as detailed).

10.3.1 **Central apron**

Priority 1

Initial clearance of the apron taxiway (Charlie and Charlie-Alpha) and stand centre-lines.

Priority 2

Stands 8 – 17, central west apron stands 40 – 45, apron roadway and walkways.

Priority 3

East side stands 6– 7, north edge stands 20 – 25 and north-west corner stands 30 - 33

Snow will be pushed onto the southern edge of head of stand road, head of stand 33, head of stand 23 and stand 1 / 2 area and will be removed by either RFFS or on-site contractor.

Snow on the Central West apron will be pushed onto the western edge of Taxiway November and will then be blown onto the grass within the Maintenance Area.

10.3.2 **East apron**

Priority 1

Initial clearance of the apron taxiway (Delta) and stand centre-lines

Priority 2

Stands 70 – 80 and head of stand roadway

Snow will be pushed onto the rear of stands and the equipment parks abeam stands 70 and 73. Snow dumps will be removed by either RFFS or on-site contractor.

10.3.3 **West apron**

Priority 1

Initial clearance of the apron taxiways (Bravo and Juliet) and stand centre-lines

Priority 2

Stands 99 – 114, stands 120 - 125 and head of stand roadway

Snow will be pushed onto the rear of stands and the eastern edge of the apron, abeam taxiway Juliet.

10.4 Disposal of Standing Water

It is generally accepted that the only practicable way of accelerating the drainage of water is by the use of mechanical brushes. As there is a danger that aircraft may aquaplane in water depths as low as 3mm, brushes should be employed where water drainage is too slow.

11. LANDSIDE SNOW CLEARANCE PLAN

11.1 Responsibilities

The responsibility for the initiation of the landside snow plan lies with the Airport Duty Manager at all times. The Airport Duty Manager is also responsible for updating the landside snow plan, calling out additional assistance, informing the HFAO of rock salt requirements and ensuring that the grit bins (locations detailed at Appendix J) are checked and where necessary refilled.

11.2 Scope

The following areas are covered by the landside snow plan:

a. All landside roads and footpaths. This includes the roads around Pegasus Park and the road to the roundabout at the western entrance to the airport (DHL road).

b. The terminal frontage roads including the car park and footpaths.

c. Footpaths to car parks 1, 2, 3, 4, 6 and 7, plus the short stay car park.

d. Footpaths within the short stay car park.

e. VIP car park.

f. Car parks and footpaths to the following buildings – 9, 21, 29, 30, 33, 34, 100, 101, 111, 120, Portakabin car park (Vanguard Road) and diagonal footpath from staff car park (Building 34) to Ambassador Road (bus stop).

g. Car parks and yards at cargo 4 and the waste materials recycling facility.

11.3 Order of Priority for Snow Clearance and Gritting

An order of priority for snow clearance and gritting has been established to ensure that essential areas are treated immediately. The landside areas are split into three priority groups which are detailed in the following sections.

First priority

- Roads to the Emergency Services Rendezvous Point 1 (ESRVP1) via Central Gatehouse 1 and Emergency Services Rendezvous Point 2 (ESRVP2) via West 2 Gatehouse.
- The main circulatory road network in the passenger terminal area, coach area, the main entrance, Beverley Road, the Cargo West entrance and Pegasus Park.
- The main road through the airport including roads to Buildings 13, 22, 35 and 107.
- The footpath from the staff car park (Building 34) to Ambassador Road.
- The footpaths from the VIP car park corner to Long Stay Car Park 1 via the Operations Control Room (Building 113).

- The ramp to the Cargo 4 yard.

- In the absence of snow but where freezing conditions are reasonably expected Priority 1 areas will be gritted once. If freezing conditions do transpire, these areas will be gritted as and when required.

Second priority

- Gritting all other landside roads including the right of way at the side of the petrol station and the footpaths in the short stay car park, plus the waste materials recycling facility off Beverley Road.

- Gritting all other car parks and yards on the list including vehicle lanes together with footpaths and roads leading to the courtesy coach exit from car parks 1 and 2.

Third priority

- Gritting foot paths or roads which have been previously gritted or cleared.

- All other car parks and yards around vehicles, lanes as mentioned in point b above.

- If snow or freezing conditions persist, additional gritting and clearing of any build-up of snow or ice in the car parks.

In addition to the above priority areas, Car Parks will undertake the following tasks:

- Gritting all walkways on the Terminal Front, including zebra crossings to and from the Terminal and the walkway to Building 113 (Control Room). See Appendix I

- All short stay car park walkways.

- The VIP car park including the walkways around the car park and to the Prestige building.

- All of the coach park area, including the walkways.

11.4 Requests for Assistance

The landside operations callout procedure will be used wherever it is deemed necessary by the Airport Duty Manager.

The landside snow plan will be triggered by weather forecasts and/or local conditions and will be actioned by the Airport Duty Manager. The Snow Coordinator has responsibility for the aerodrome snow plan.

Additional assistance is required is available from Heaths contracts –
office@thheathcontracts.co.uk
Mob: 07774 711836
Tel: 01530 412919

Each callout must be logged on the Gritting Schedule on the EMA Public drive network.

If rock salt needs to be reordered, the Airport Duty Manager should make the request to the HFAO

11.5 Individual Responsibilities for Employers and Employees

Under Health and Safety at Work legislation each employer has a duty of care to employees and each employee has a duty to take care. It will be the responsibility of employers to take steps to safeguard their employees and visitors in premises not listed above, for example the Yards and footpaths of premises built on ground leases or leased in their entirety to individual companies.

For buildings where EMA grit the car parks, grit bins will be provided and located by the main entrances to the buildings so that occupants can themselves spread grit/salt mixture on footpaths and steps.

Individual employees of all companies based at the Airport, and their visitors, have a duty of care to themselves and others. In conditions of snow or ice the roads/footpaths/car parks are unlikely to be totally free of ice or snow at all times, particularly during early stages or during prolonged snow fall. Driving with care according to the prevailing conditions and wearing appropriate footwear is essential.

12. FROST AND ICE CONTROL

12.1. General Guidance

Compared to snow events, the prevention of frost or ice on airfield runways, taxiways and aprons is more frequent but requires a less extensive response. This resource will be drawn from the RFFS. No further activation of the Winter Operations Plan is normally required.

The method of improving braking action on ice (including black and rime ice and ice formed by compaction of snow) which has been adopted at East Midlands Airport is by use of liquid de-icer chemicals applied by specialist spreader units.

As frost or ice can form quickly over a large surface area, it is not possible to guarantee that all areas will be treated, particularly when a ‘flash-freeze’ scenario occurs. All airside users should be alert to the presence of ice hazards and take appropriate care. ‘Flash-freezing’ is a common feature of UK winter weather and usually occurs following a rapid decrease in surface temperature as precipitation dissipates and the sky clears. A ‘flash-freeze’ scenario can occur within a period of minutes, providing only a short window of opportunity to carry out anti-icing as precipitation ceases and the temperature falls. Airside users should also be aware that the temperatures will often subside during the period immediately following daybreak, posing a greater risk to operations during the busy morning peak period.

Where compacted snow or ice are deemed to be a hazard to traffic on the apron roadways, then pearlite acetate may be used in order to degrade the problem. Should it be required, the Chafer de-icer unit has the capability to spread liquid acetate at a 6m spray pattern which will suffice for these road widths.

12.2. Stand / Walkway De-icing Granules ("Self Help")

Solid de-icing granules for the purpose of enabling treatment of specific ice or snow hazards are available from Airfield Operations for use on apron walkways and pedestrian access to aircraft (see also Section 5.2 – Responsibilities of All Airfield Staff).

12.3. Aircraft De-icing

Details of chemical usage should be recorded on EMA form OCR 7 and submitted to the Airport Company via email (controlroom@eastmidlandsairport.com).

12.4. Airfield Anti-Icing Strategy

Whenever ice conditions are likely the RFFS Station Manager should undertake pre-emptive airfield anti-icing in an attempt to prevent the accretion of ice. The following factors should be considered when taking a decision to anti-ice: -

- The amount of surface water present on the Movement Area and the potential for anti-icing chemicals to become diluted consideration to sweeping before applying must be given.
  - Forecast Surface Temperatures.
- Current weather and likelihood of sleet/rain in advance of snowfall.
- Practicality of undertaking anti-icing from an operational perspective.
- The application rate at which anti-icing chemicals should be applied (see section 12.7).

12.5. Holdover Considerations

The RFFS SM should remain alert to the potential for significant dilution of anti-icing media during and after precipitation. It is possible further applications of anti-icing media will be required in order to prevent the formation of ice. However, this will largely depend on prevailing and forecast surface temperatures, and the intensity of snowfall.

The RFFS SM will remain alert to the weather conditions, and in particular, the extent of any precipitation post anti-icing in order that an assessment of the likely holdover time can be made. This information will be passed across subsequent shifts in order to ensure well balanced decisions can be taken over a period of several days.

12.6. General Considerations

Anti-icing operatives should treat full runway and taxiway widths. Particular attention should be paid to treating taxiway turns and intersections where it is likely an aircraft bogey will deviate from the central portion of the taxiway during any ground swing or taxi manoeuvre.

Hard-standing areas between the minimum taxiway width and parking stands should be treated comprehensively. Successful treatment of these areas will prevent loss of traction and grip during pushback, and whilst aircraft are turning onto stand.

12.7. Anti-Icing Media – Application Rates

The manufacturers guidelines will be used as a guide for determining the application rates at all times.

13. INBOUND DIVERSION POLICY & ATC FLOW MANAGEMENT

13.1. Diversion Policy

Widespread winter weather conditions across the UK can result in flight diversions due to airport snow closures or reduced airfield capacity and air holding delays.

Subject to availability, East Midlands Airport is prepared to accept diversions, up to and including Boeing 747 aircraft. Diversionary aircraft will normally be allocated a remote parking stand, except in exceptional circumstances. Priority will normally be given to commercial operations, over Military and Private flights.

13.2. Capacity Monitoring

In order to protect our normal schedule of flights, Airfield Operations will closely monitor the operational capability of UK Airports and determine the number of parking stands available for diversionary aircraft. This assessment will be made at intervals of not less than 12 hours between the months of November and March inclusive.

The HFAO will set an “inbound diversion cap” and notify ATC of any capacity limitations. The “cap” is intended to identify the number of inbound aircraft which can be accepted without impacting upon stand allocations plans associated with our normal schedule of flights. In the event of a mass diversion scenario, the HFAO and ADM will activate the IMC.

Further information concerning the procedures for handling excess traffic can be found in the Aerodrome Manual Part 2.

In the event of significant disruption at East Midlands Airport and limited availability of parking stands, a decision may be taken not to accept inbound diversions. Such decisions will be promulgated by NOTAM and Chroma Fusion. Requests from East Midlands Airport airline customers to accept inbound diversions and extra flights will be considered on a case-by-case basis by the OD / HFAO and ATSM, subject to the provision of a Ground Handling service.

In the interests of passenger welfare and to protect our scheduled services, the decision to no longer accept diverted traffic into East Midlands Airport may be based upon lack of available resources from Ground Handling and Fuelling services.

13.3. ATC Flow Management

During periods of reduced airfield capacity and adverse weather, it may be necessary to implement ‘ATC flow control’ measures to ensure the number of arriving aircraft does not exceed airfield capacity. This will usually occur when the number of available parking stands is reduced due to the presence of winter contaminants, or runway capacity is reduced due to the availability of associated taxiway infrastructure. In such cases, the level of flow to be implemented will be determined by Air Traffic Control (ATSM / Watch Supervisor and OD / HFAO.

ATC flow measures will not be implemented if the available airfield capacity exceeds demand. Flow measures will be notified to the airport community via the message banner on Chroma Fusion.

14. ENVIRONMENTAL CONSIDERATIONS

14.1. Drainage System Requirements

Prior to the instigation of anti-icing / de-icing procedures, Terminal Engineering/Facilities should confirm that the drainage system has been placed into 'winter setting' in the relevant Catchments Areas. This is to prevent anti-icing / de-icing materials from contaminating local watercourses, and is a mandatory requirement of the Environment Agency. During the winter months, following a review of the midday weather forecast, the RFFS SM should advise Terminal Engineering/Facilities of the likelihood of anti-icing action.

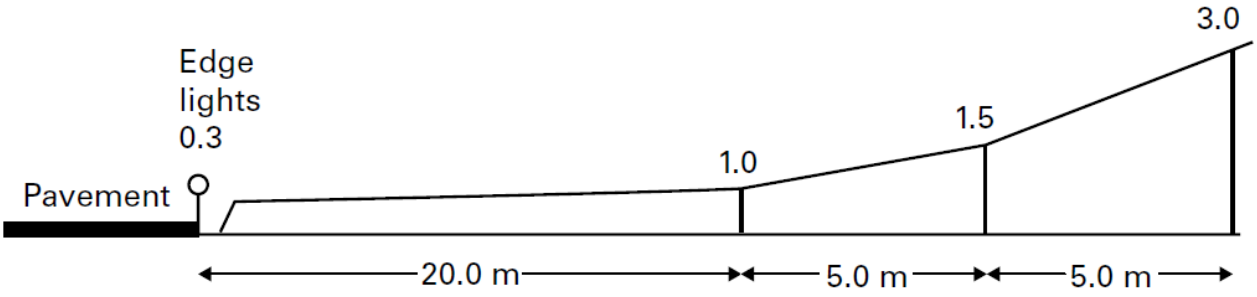
14.2. Chemical usage

To allow the Airport to manage the environmental impact of de-icing operations, operators are required to provide information of aircraft de-icer usage to the Airport on a daily basis. This information is to be scanned and emailed to the Airport Company at controlroom@eastmidlandsairport.com using form OCR7 (Appendix G). Alternatively an electronic version of OCR7 is available on request. Details of anti-icing / de-icing chemicals used by RFFS or Airfield Operations on the airfield and within the maintenance area should be recorded.

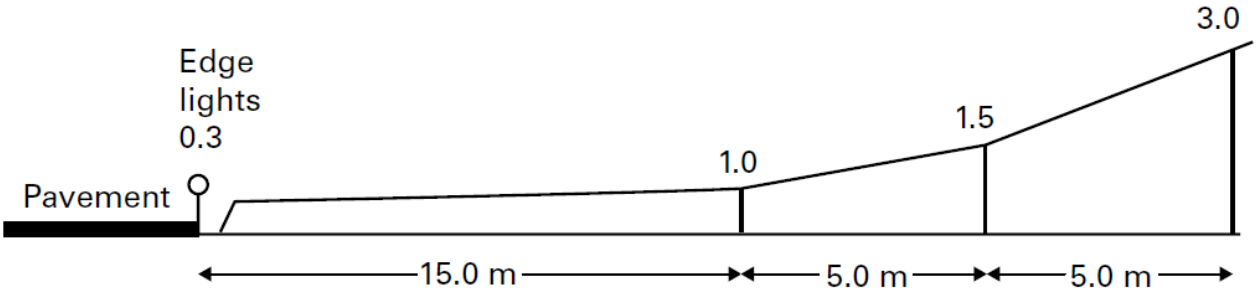
14.3 In order to enhance existing procedures and better manage the amount of chemical usage, the Airport restricts the use of aircraft de-icer rigs for aircraft de-icing to areas which are already subject to increased levels of environmental control. These areas are the central, central west, east and west aprons. Aircraft de-icer rigs are not to be used in any other area. The use of small agricultural type hand sprayers (normally used on light aircraft) is however, permitted within the Aircraft Maintenance Area.

14.4 Operators are to ensure that they have adequate procedures in place to minimise the exposure of passengers and other apron users to aircraft de-icing operations. During aircraft embarkation / disembarkation processes, aircraft de-icing operations are not to be carried out in the immediate vicinity of the passengers.

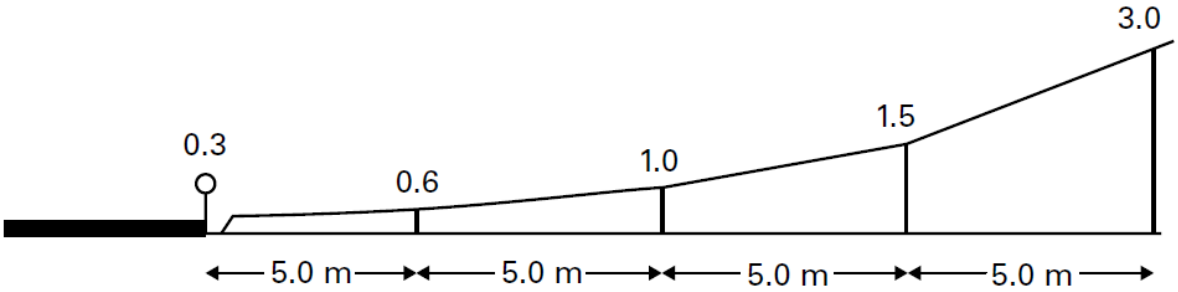
APPENDIX A – SNOW BANK PROFILES



(i) Runways used by A380

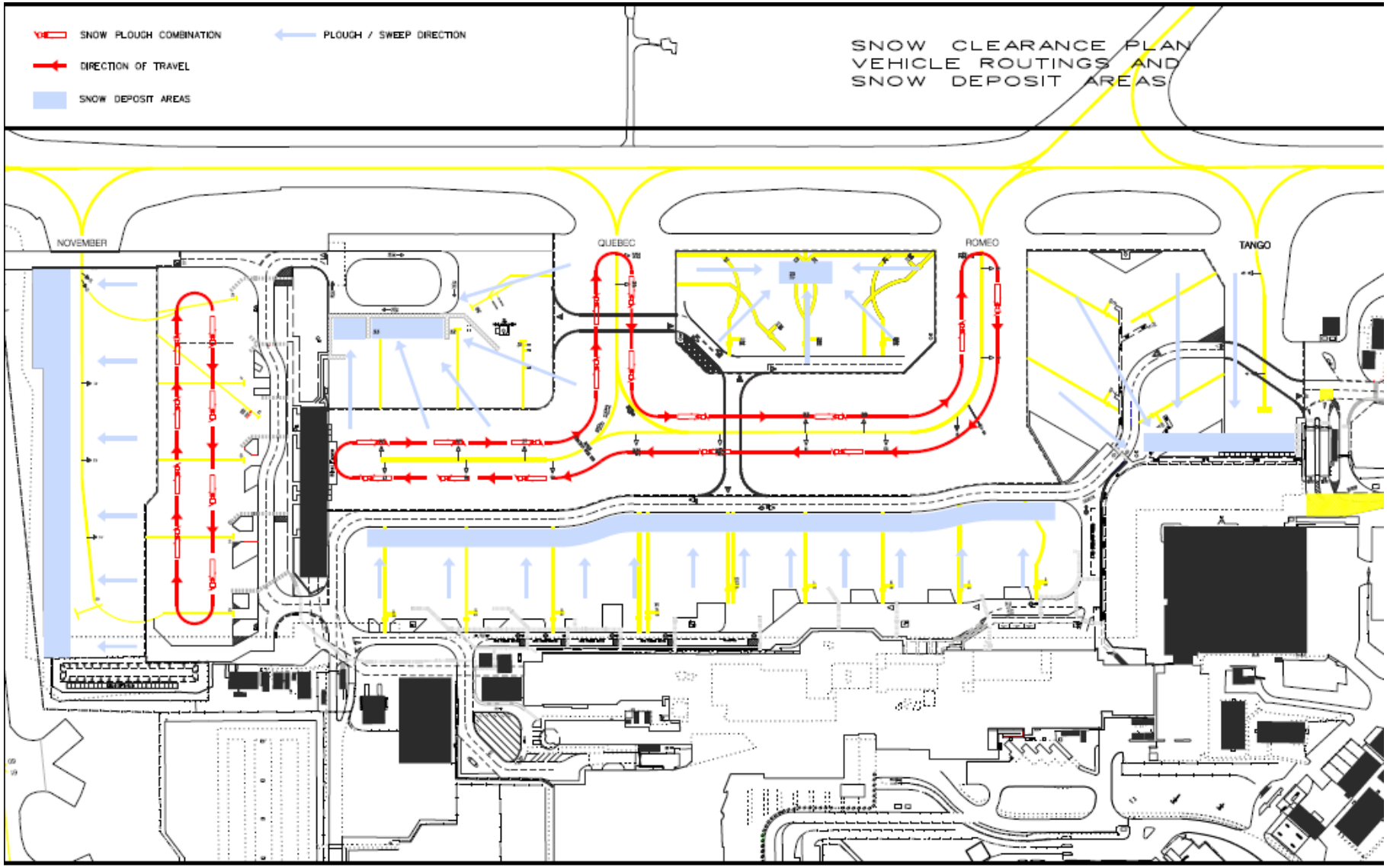


(ii) Runways used by B747, DC10 and L1011

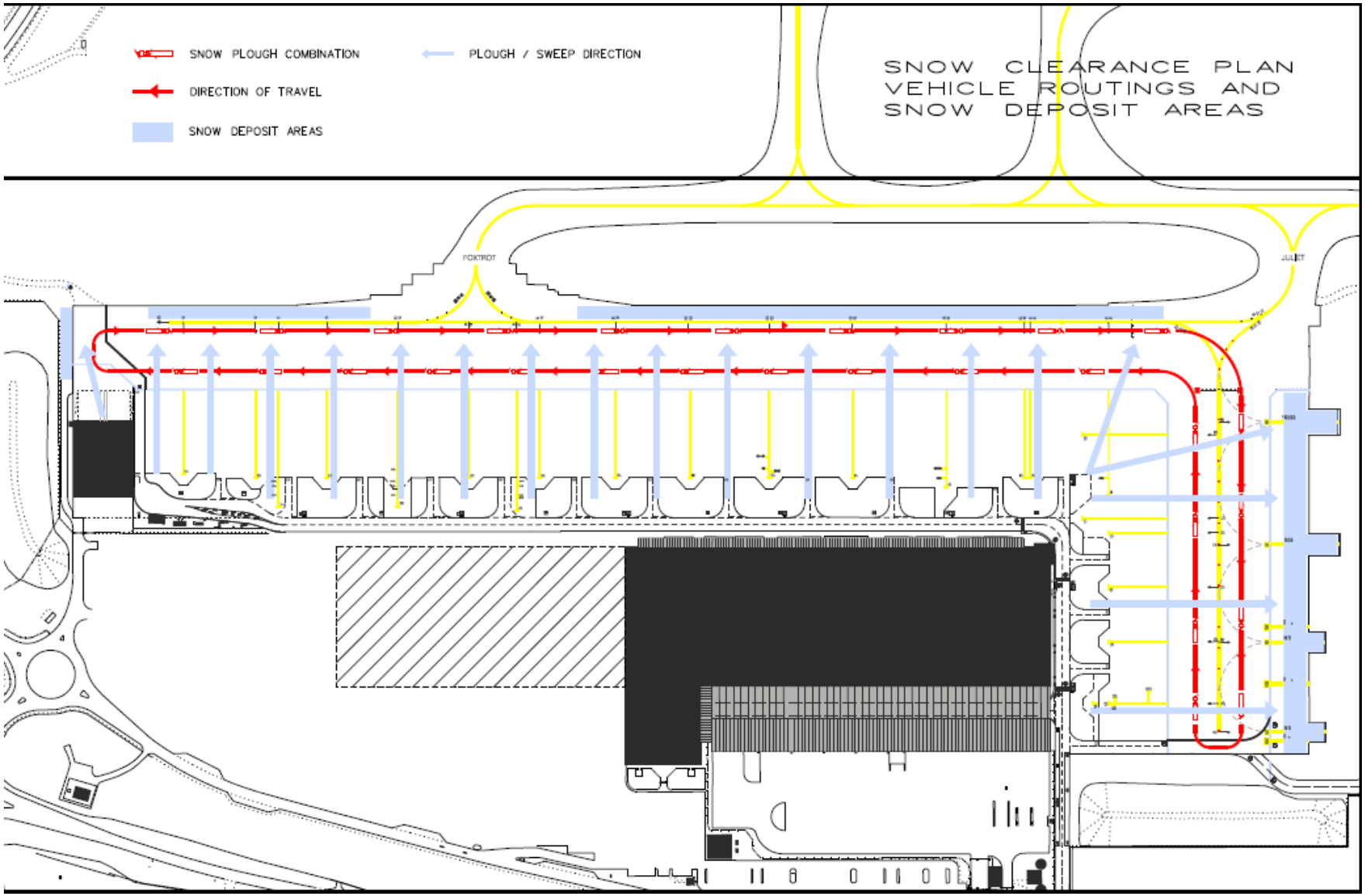


(iii) Runways used by other aeroplanes

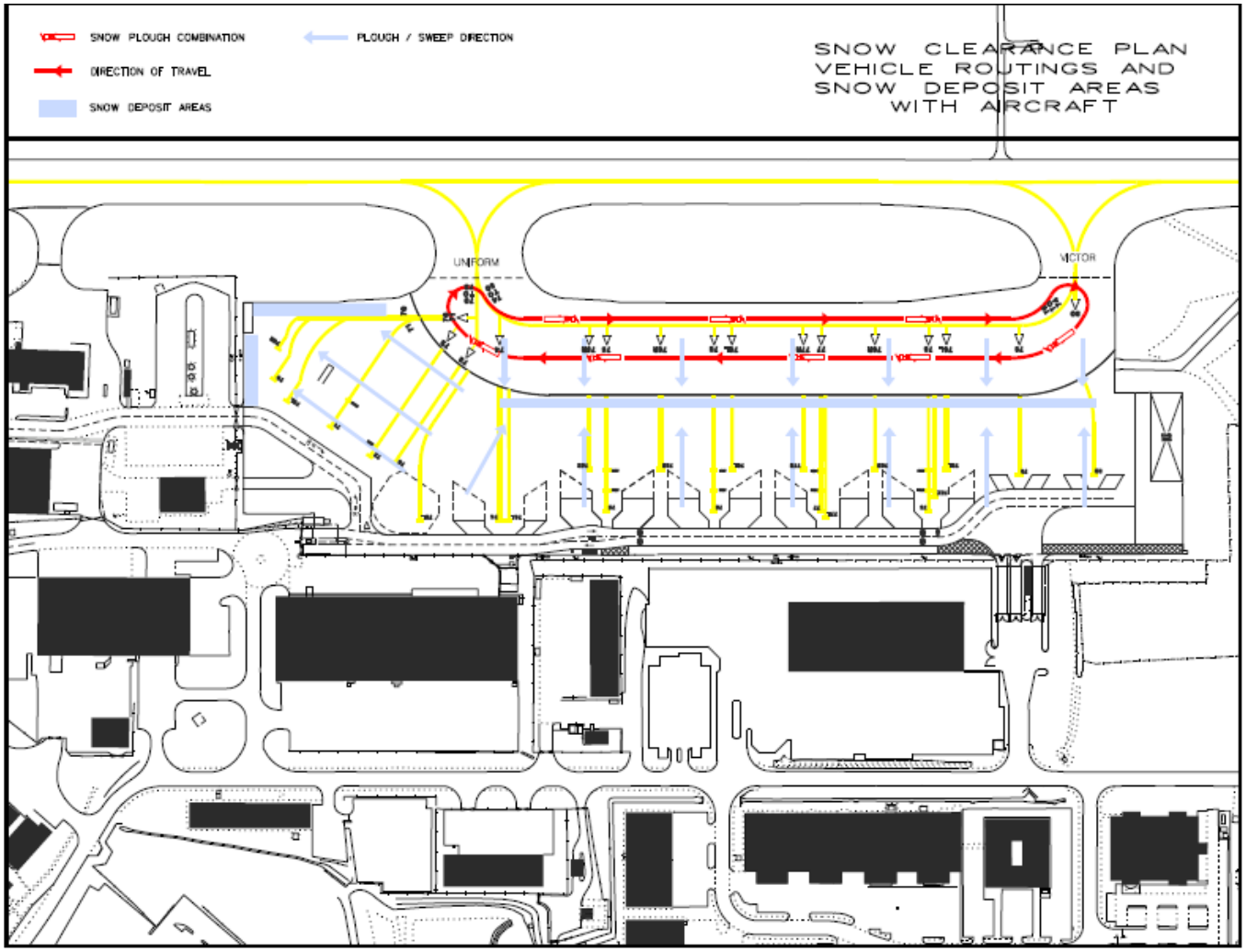
APPENDIX B – AIRFIELD SNOW CLEARANCE PLAN & SNOW DEPOSIT AREAS (CENTRAL & CENTRAL-WEST APRONS)



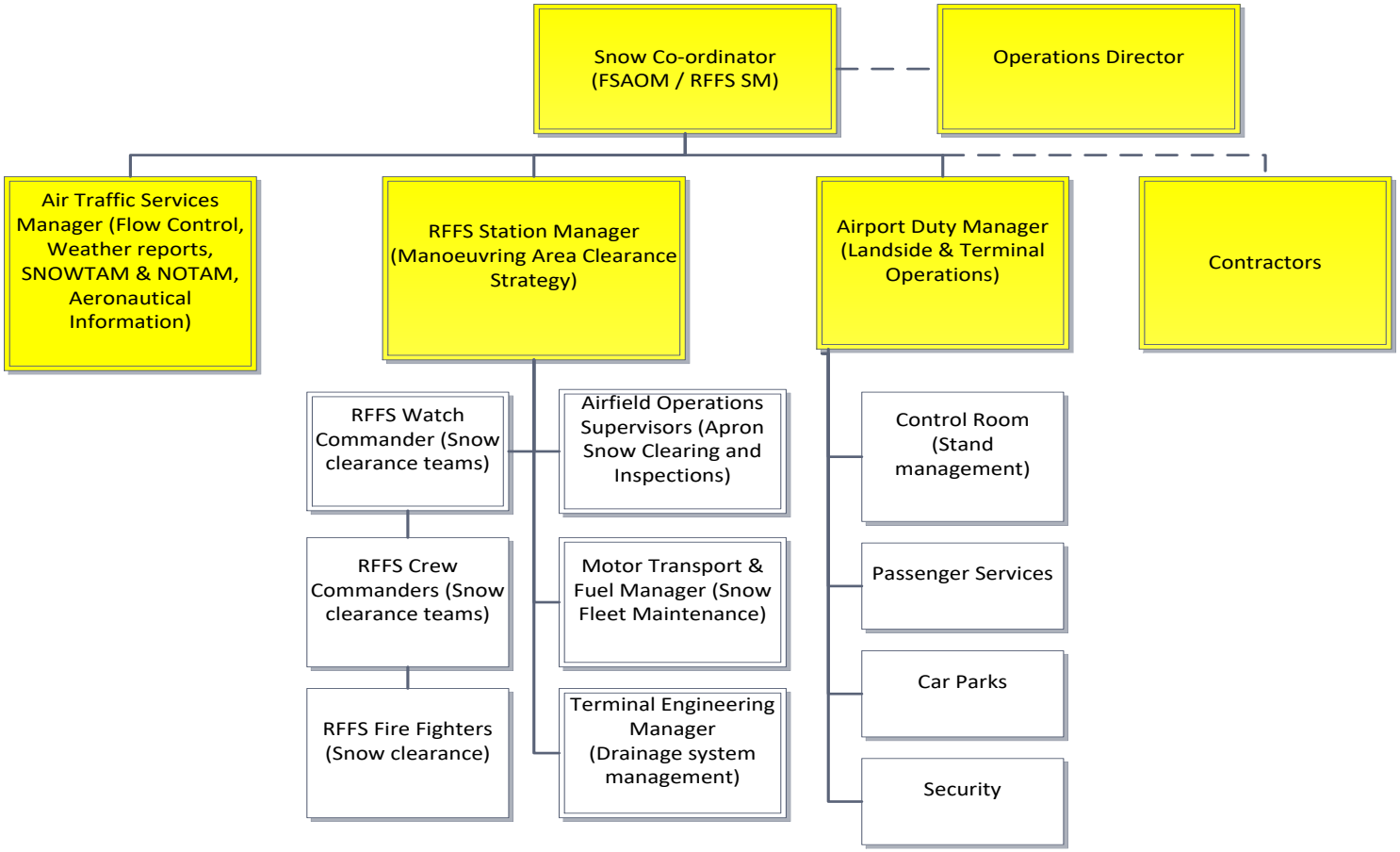
APPENDIX B – AIRFIELD SNOW CLEARANCE PLAN & SNOW DEPOSIT AREAS (WEST APRON)



APPENDIX B – AIRFIELD SNOW CLEARANCE PLAN & SNOW DEPOSIT AREAS (EAST APRON)



APPENDIX C WINTER OPERATIONS ORGANISATION STRUCTURE 2018/19



APPENDIX D – REGULATORY REFERENCES

The following regulatory documentation supports the principles that are adopted in the East Midlands Airport Winter Operations – Snow Plan and may be referred to for further detail:

- European Regulation (EU) 139/2014 – Annex IV 'Operations Requirements for Aerodromes', ADR.OPS.B.035 *Operations in winter conditions*
- European Regulation (EU) 139/2014 – Annex IV 'Operations Requirements for Aerodromes', ADR.OPS.B.045 *Low visibility operations*
- European Regulation (EU) 139/2014 – Annex IV 'Operations Requirements for Aerodromes', ADR.OPS.B.050 *Operations in adverse weather conditions*
- EASA 'AMC/GM To Annex IV' - AMC1 ADR.OPS.B.035 & GM1 ADR.OPS.B.035 *Operations in winter conditions*
- EASA 'AMC/GM To Annex IV' - AMC1 ADR.OPS.B.045 Low visibility o*perations*
- EASA 'AMC/GM To Annex IV' - AMC1 ADR.OPS.B.050 *Operations in adverse weather*
- CAP32 UK Aeronautical Information Publication; Aerodromes – General (AD 1.2.2 (Paragraph 5.4.1 (b) is no longer permitted in the UK).
- CAP 642 Airside Safety Management – Chapter 2, Section 15.4 *Winter operations*
- CAP 782 Regulation of the aeronautical meteorological services
- CAA Guidance for Aerodrome Operators - Aerodrome procedures for winter operations
- AIC 86/2009 (Yellow 279) – Guidance for the distribution and completion of the SNOWTAM form

All the above documents are published by EASA, CAA & NATS AIS and are available on the CAA website www.caa.co.uk under "Publications', and at www.nats-uk.ead-it.com

Associated documentation

- Aerodrome Manual
- Airport Emergency Plan
- MATS Part 2

APPENDIX E – AERODROME SNOW CLEARING EQUIPMENT & HUMAN RESOURCES

Machine ID number	Machine Make / Use
SNOW 11	MAN Engine Unit with 16ft Plough and Schorling P21H
SNOW 8	MAN Engine Unit with 16ft Plough and Schorling P17A
SNOW 10	MAN Engine Unit with 16ft Plough and Danline 2000
SNOW 12	MAN Engine Unit with 16ft Plough and Schorling P17B
SNOW 1	DAF Engine Units with 16ft Plough and Danline 2000
SNOW 2	DAF Engine Units with 16ft Plough and Danline 2000
SNOW 3	DAF Engine Units with 16ft Plough and Danline 2000
SNOW 4	DAF Engine Units with 16ft Plough and Danline 2000
SNOW 17	JCB Fastrac plus Sicard Runway Sweeper
SNOW 6	JCB Fastrac plus Sicard Runway Sweeper
Dependent on tractor unit	Sicard Runway Sweeper
SNOW 9	MAN Engine Unit with 16ft Plough
SNOW 7	MAN Engine Unit with 16ft Plough
SNOW 5	Chafer De-Icer unit on JCB Tractor
SNOW 16	Chafer De-Icer unit on JCB Tractor
Dependent on tractor unit	Flowair 1000 De-Icer unit
OPS 4	Demountable De-Icer on Toyota Pick-up
See ‘Multihog’ below	Multihog De-icer unit
See ‘Multihog’ below	Multihog De-icer unit
SNOW 18	Multi-hog brush, plough and de-icer combination
SNOW 20	Multi-hog brush, plough and de-icer combination
SNOW 15	Gurney Reeves Sweeper and New Holland Tractor
Works 15	Danline Brush and Ford Tractor
SNOW 19	Micra Brush/Plough and JCB Fastrac
DHL operated unit	Sicard Sweeper and DHL Tractor

Snow clearing duties are resourced from duty RFFS personnel, as required for Category 7 operations. Airfield Operations provide an additional trained resource (max. two persons at any one time).

Further assistance may be available from Passenger Services and Car Parks teams along with Building 34 trained volunteers.

JR Maintenance can also provide a chargeable equipment / personnel resource.

APPENDIX F – SNOCLO MATRIX (ESTIMATED CLOSURE PERIODS)

Snow Accumulation	Estimated Duration of Airfield Closure
3mm – 5mm	*1 Hour 30 Minutes*
6mm – 10mm	*2 Hours 30 Minutes*
11mm – 20mm	*3 Hours*
20mm – 100mm	*Approximately 6 Hours*
100mm – 200mm	*Approximately 12 Hours*
200mm +	*Approximately 12 – 24 Hours +*

APPENDIX G – CHEMICAL DE-ICER USAGE, FORM OCR 7

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OCR 7

DAILY DE-ICING CHEMICAL USAGE REPORT

Company: ……..

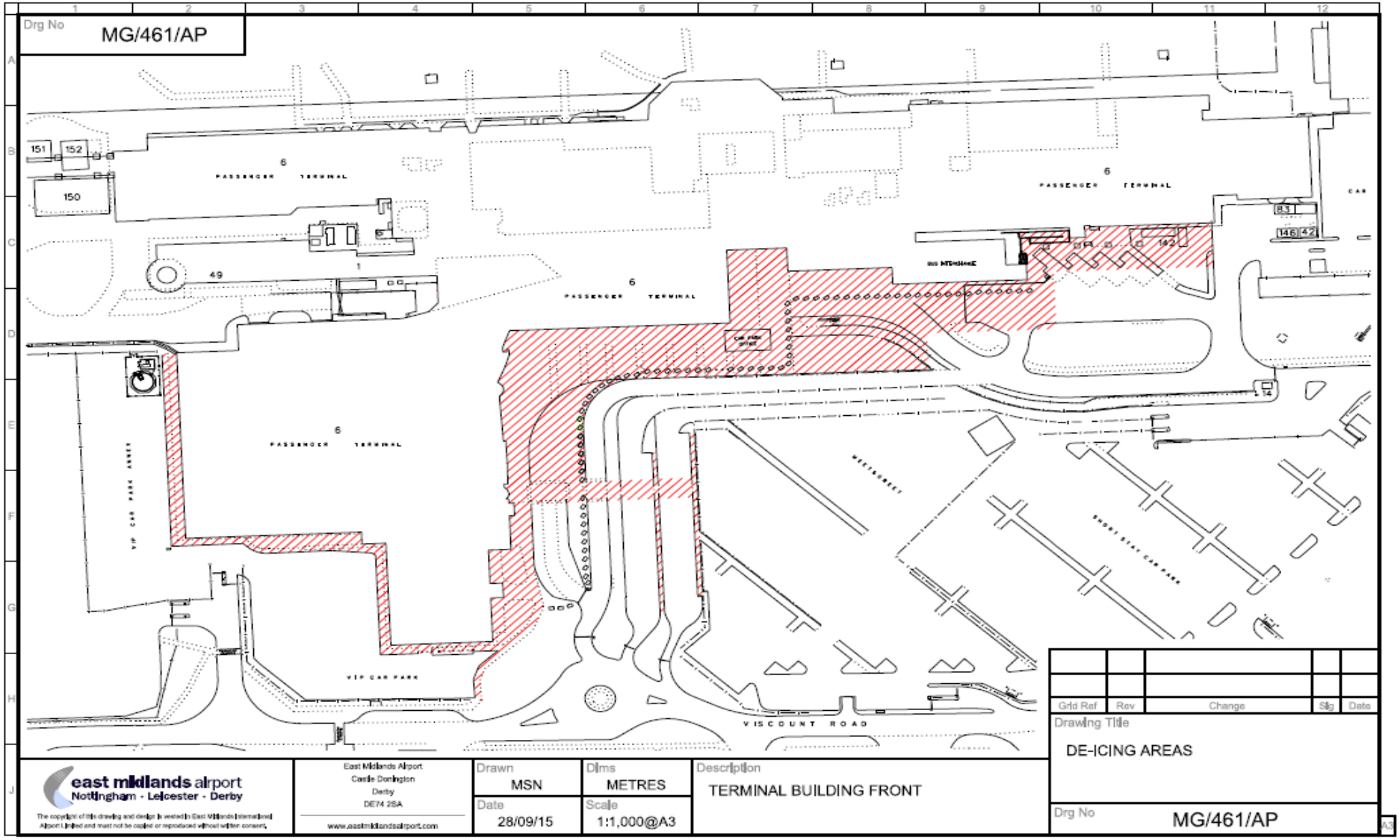
Period from	Date	Time GMT
Period until	Date	Time GMT
Chemical used	Type	Product \ Product name
Mixture ratio	% Water	% Chemical
Quantity used (Litres)		
Area used	**West Apron** Stand Number(s)	
	East Apron Stand Number(s)	
	Central Apron Stand Number(s)	

Completed by: ……..

Position: ……..

(please return the completed form to the Airport Company via e-mail to controlroom@eastmidlandsairport.com)

APPENDIX H – TERMINAL DEICING AREAS



APPENDIX I – SITE GRIT BINS

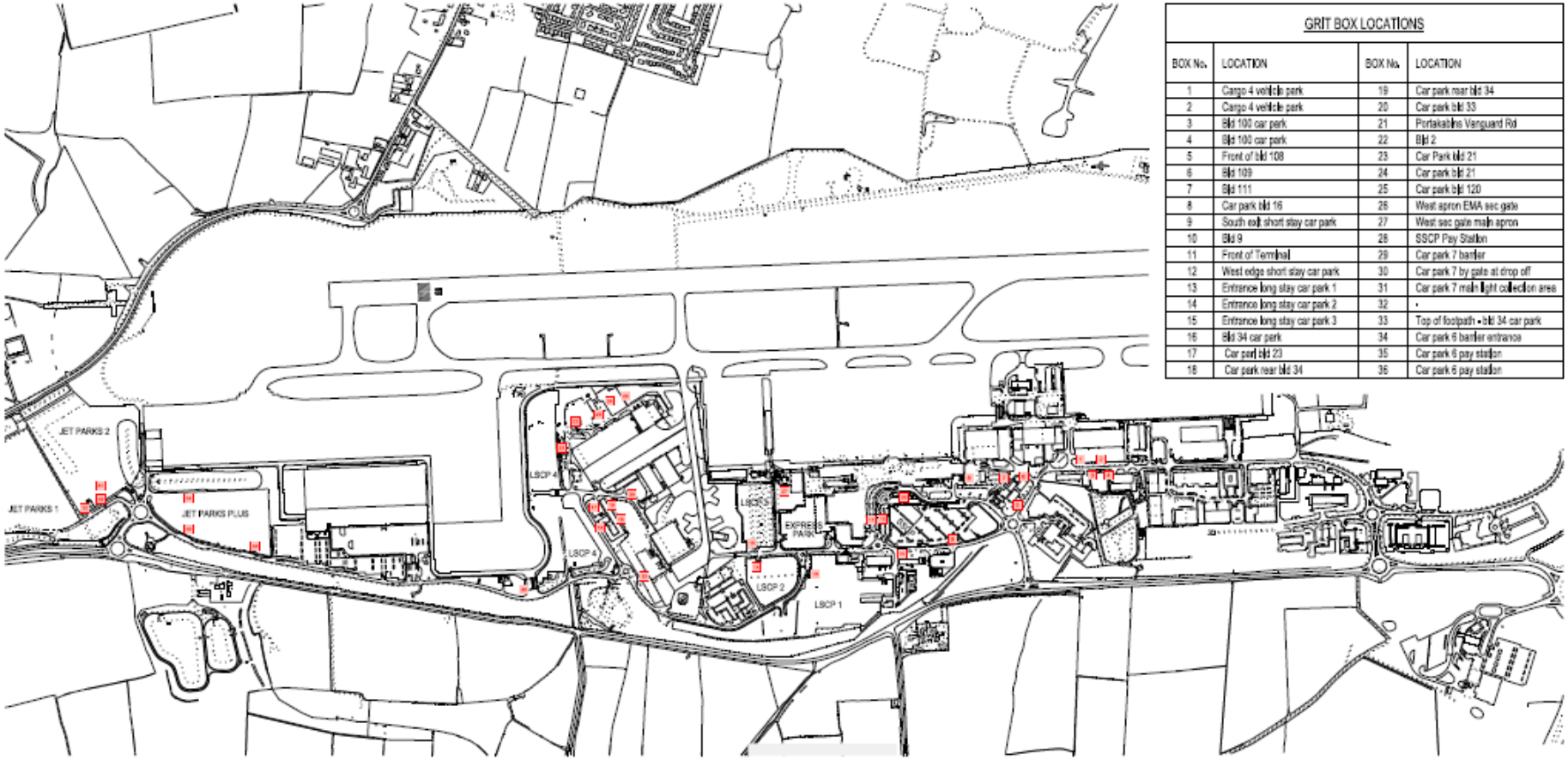
Building /site identification

For issue by /date

For issue to

Drawing status

Drawing notes



GRIT BOX LOCATIONS

BOX No.	LOCATION	BOX No.	LOCATION
1	Cargo 4 vehicle park	19	Car park rear bld 34
2	Cargo 4 vehicle park	20	Car park bld 33
3	Bld 100 car park	21	Portakabins Vanguard Rd
4	Bld 100 car park	22	Bld 2
5	Front of bld 108	23	Car Park bld 21
6	Bld 109	24	Car park bld 21
7	Bld 111	25	Car park bld 120
8	Car park bld 16	26	West apron EMA sec gate
9	South adj short stay car park	27	West sec gate main apron
10	Bld 9	28	SSCP Pay Station
11	Front of Terminal	29	Car park 7 barrier
12	West edge short stay car park	30	Car park 7 by gate at drop off
13	Entrance long stay car park 1	31	Car park 7 main light collection area
14	Entrance long stay car park 2	32	-
15	Entrance long stay car park 3	33	Top of footpath - bld 34 car park
16	Bld 34 car park	34	Car park 6 barrier entrance
17	Car park bld 23	35	Car park 6 pay station
18	Car park rear bld 34	36	Car park 6 pay station

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Revision				drawn	date
	A	GENERAL AMENDMENTS	MSN-11/11/05	MSN	15/07/05
	B	GENERAL AMENDMENTS	MSN-03/10/06	checked	date
	C	GENERAL AMENDMENTS	MSN-03/12/13		

Scales at A3

Drawing title

EAST MIDLANDS AIRPORT - SITE GRIT BOXES

Drawing record path \departments\pa\[illegible]

Drawing no. A3/grit boxes

Revision C