

Aerodrome Safeguarding

Airside Operational Instruction 16

Document Owner – Airfield Operations



1. Assessment and Treatment of Obstacles

- 1.1 Obstacles are surveyed in accordance with the requirements of CAP 232 “Aerodrome Survey Requirements” and the CAP670 “ATS Safety Requirements”.
- 1.2 Valid survey data is held by the EMA Air Traffic Services Manager and is copied to the Operations, Developments & Safety Department. Procedures for the management of the data including review of obstructions from type A chart against aerodrome obstacles listed against the airport in the AD-2 section of the UK AIP together with amendments (as required) are contained in AOI “CAP 232 Survey”.
- 1.3 In addition, the ATSM will review all other survey data against the AD-2 section as well as the remaining entries within the UK AIP in conjunction with the Operations, Developments & safety Department.
- 1.4 An Obstacle Free Zone is provided for CAT I, II and III operations in accordance with EU Commission Regulation No 139/2014, Implementing Rule ADR.OPS. B.045 and B.075 and there supporting AMC and GM’s. This is illustrated on EMA Type A Chart shown in Part A.
- 1.5 The safeguarding of cranes & tall equipment follows the process outlined in EMA Aerodrome Safeguarding manual, the process is described within the Crane & Tall Equipment Guidance note available to download from the following link <https://www.eastmidlandsairport.com/about-us/operational-documents/safeguarding> any equipment that operates above the current tree or building line or above 10M within 6Km of the aerodrome should follow the process described on the link above. All airside operations should go through the permit to work system also described more in AOI 04.

2. Aerodrome Safeguarding Requirements

- 2.1 The Office of the Deputy Prime Minister has published a Safeguarding Circular, reference ODPM 1/2003, which places a duty upon the Airport to ensure that the aerodrome is appropriately safeguarded, to ensure the continued safety of aircraft operations. This procedure defines the safeguarding process that is employed by the Airport to discharge these duties effectively.

There are several aspects to the safeguarding function:

- Physical – preserving the integrity of the Obstacle Limitation Surfaces (OLS) surrounding the Aerodrome.
- Technical – the effects of new development on Nav aids and technical equipment including frequency assessments within 3km of the aerodrome
- Bird Hazard Control – minimises the hazard to aircraft posed by developments whose design may increase bird numbers in the vicinity of an aerodrome
- Lighting in the Area of Aerodromes
- Use of cranes & tall equipment within 6km of an Aerodrome
- Wind turbines within 30km of an Aerodrome
- Gas purge operations within a 4 Km. radius of the Aerodrome should seek permission prior to purging at EMA.

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- LPA's are issued with a Safeguarding Map by the CAA specific to East Midlands Airport which enables them to identify those applications that could potentially impact upon the Airports operational safety and on which consultation is required.
- 2.2 In outline, a Safeguarding qualified and competent person is employed by the airport with overall responsibility for ensuring that safeguarding is undertaken. In accordance with CAP738, this role assesses all relevant consultations against the obstacle limitation surfaces defined in Implementing Rule ADR.OPS. B.045 and B.075 and there supporting AMC and GM's to ensure that any potential penetration is identified and assessed. For other aspects of the safeguarding assessment including other risks to air traffic, stray lighting, bird strike and electromagnetic spectrum issues the safeguarding assessor will consult nominated experts as required if outside their area of competency and training.
- 2.3 Developments proposed by the Airport using its permitted development rights are also subject to a full safeguarding assessment.
- 2.4 All correspondence with local planning authorities, including reporting the findings of safeguarding assessments takes place via the MAG Safeguarding Officer.

3. Receiving consultations

- 3.1 Consultations are usually initiated by the relevant local planning authority, who are required to submit details of proposed developments to the Airport in accordance with the requirements of the safeguarding maps issued by the CAA. In accordance with the requirements of the safeguarding maps all developments requiring consultation must be submitted directly to the Aerodrome Safeguarding Officer, based at Manchester Airport, (consultations include full planning applications, outline planning applications and proposed work using permitted development rights).
- 3.2 The MAG Safeguarding Officer will assign each consultation a unique reference case number. The case reference number will be based on a clear reference which will be documented and communicated accordingly, in addition to this is technical input is required these assessments will also be referenced within the EMA Safeguarding reference system. The full consultation response will then be entered on to the Airport's planning safeguarding reference system by the MAG Safeguarding Officer.

4. Preliminary assessment

- 4.1 The MAG Safeguarding Officer will review each consultation received to determine the scope and extent of the assessment that is required. Where it is unclear whether a particular aspect requires a full safeguarding assessment, a precautionary approach must be adopted at all times.
- 4.2 Where it is determined that a consultation requires further, more detailed assessment the MAG Safeguarding Officer will issue a copy of the consultation to the Operations, Developments & Safety Department based at East Midlands Airport and subject experts as required. This will usually be dispatched within in good time to assess and respond on the receipt of the consultation.
- 4.3 The Operations, Developments & Safety Department also the Wildlife subject expert will be notified by e-mail of referred consultations.

- 4.4 Where preliminary assessment reveals that the consultation does not contain sufficient details to enable a full assessment to be undertaken the consulting body will be notified by the MAG Safeguarding Officer in writing. No further action will be taken until adequate details are submitted in accordance with the requirements of the Circular.
- 4.5 Where further supporting details are provided by the consulting body, or where the consultation is subject to a material change, the MAG Safeguarding Officer will update the unique case reference code to reflect the version of the consultation under consideration.
- 4.6 The details of the preliminary assessment will be recorded on the Airport's safeguarding electronic referencing system.
- 4.7 All Gas purge operations within 4Km of the Aerodrome are to be notified to EMA and addressed to ops.safety@eastmidlandsairport.com. Giving a minimum of 21 day's notice of a planned purge

5. Full assessment

5.1 Obstacle Limitation Surfaces (OLS) & Instrument Flight Procedure (IFP's)

- 5.1.1 The Operations, Developments & safety Department will assess each consultation to determine if it infringes a protected surface as defined by Implementing Rule ADR.OPS. B.045 and B.075 and there supporting AMC and GM's. Assessment results will be recorded both on All responses and EMA safeguarding assessments will be referenced and stored electronically. This assessment will usually take place within 21 working days of receipt of the consultation.

5.2 Bird Strike Risk

- 5.2.1 Where preliminary assessment determines that an assessment of bird strike risk is required a full assessment will be undertaken by the Safeguarding wildlife contractor. This assessment will usually be undertaken within 5 working days of the consultation being referred for assessment.
- 5.2.2 Where, due to the complexity of the consultation, it is not possible to complete the assessment within sufficient time the MAG Safeguarding Officer will be notified accordingly and a further completion date agreed.

5.3 Air Traffic Risk

- 5.3.1 Where preliminary assessment determines that an assessment of air traffic risk is required this will be undertaken by the Operations, Developments & Safety Department in conjunction with EMA Air Traffic Engineers and the Air Traffic Services Manager where appropriate. The assessment will include (but will not be limited to) lighting, reflective

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- surfaces, air traffic sight lines and crange, frequency assessment within 3km of the aerodrome. This assessment will be undertaken within the agreement of each permit type. More details on the service level agreement are described on the permit application forms.
- 5.3.2 Where the consultation is particularly complex or beyond the competence of assessment team an external expert opinion or such modelling may be sought.
- 5.3.3 Prior to requesting an external opinion, the approval of the Operations, Developments & **Safeguarding** Department will be obtained, and it will be confirmed, that the assessment that is required and cannot be undertaken by other operational personnel within the Manchester Airports Group.
- 5.3.4 Where due to the complexity of the consultation it is not possible to complete the assessment within the agreed time frame the MAG Safeguarding Officer if a planning response or the Operations, Developments & Safety Department will be notified accordingly, a further completion date will then be agreed.
- 5.4 Electromagnetic Risk**
- 5.4.1 Where preliminary assessment determines that an assessment of potential electromagnetic interference is required a full assessment will be undertaken by the Airfield Technical Manager. The assessment will include (but will not be limited to) determining any impact upon the Airport's DME, ILS and other navigational aids. This assessment will be undertaken within agreed time frame and appropriate extensions requested if required for the assessment process to be complete.
- 5.4.2 Where the consultation is particularly complex or beyond the competence of the internal assessor, e.g. proposed wind turbines, external expert opinion may be sought.
- 5.4.3 Prior to requesting an external opinion, the approval from the Operations, Developments & safety Department will be obtained, and it will be confirmed that the assessment that is required cannot be undertaken by other operational personnel within the MAG.
- 5.4.4 Where due to the complexity of the consultation it is not possible to complete the assessment agreed time frame the Operations, Developments & Safety Department will be notified accordingly and a further completion date agreed.
- 5.4.5 Off airfield cranes and tall plant have to be assessed through the aerodrome safeguarding process up to a distance of 6km to ensure there are no penetrations of the OLS or any ATC issues through these works. As these types of works cannot be entered onto the EMA Job Registration system a permit has been created which will be issued to the crane operator if the works are assessed and approved. This permit should then be seen as the contractors written authorisation to use the crane or tall plant to the details and conditions listed on the permit. A similar permit system is also in place for all temporary or permanent frequency use within 3km of the Aerodrome.

5.5 Lighting

5.5.1 At night and in periods of poor visibility, pilots rely on the pattern of the Aeronautical Ground Lighting, principally Approach and Runway Lighting to assist with aligning the Aircraft with the runway and touching down at the correct point. Therefore, it is important that other lights which could distract or confuse are not permitted. It is therefore essential that proposed new lighting is taken into account in the vicinity of an Aerodrome.

5.5.2 Lighting can cause problems where:

- the intensity of the lights, whether steady or flashing (i.e. strobe lighting), could cause glare in the direction of an aircraft approaching to land or taking off
- The colour of the light could cause it to be mistaken for an Aeronautical Ground Light
- When viewed from the air, the lights make a pattern, (e.g. a row of street lights) similar to an approach or runway lighting system
- The overall amount of illumination detracts from the effectiveness of the approach and runway lighting, particularly during periods of low visibility
- The aeronautical ground lights are obscured from the pilot's view

5.5.3 Although all lighting proposals in the vicinity of an aerodrome may be of concern, particular attention should be paid to lights within a rectangular area 750 metres each side of the centreline and extended centreline of the runway to a distance of 4500 metres from the threshold (for an instrument runway) this is known as the lighting box and such box is in place at EMA. Lighting within the lighting box may require extra safety measures to be attached to the operation on the lighting or even refusal if deemed unsafe.

5.5.4 In addition, guidance is provided in the British Standard Institution's BS 5489 Road Lighting, Part 8: Code of Practice for lighting that may affect 'the safe use of aerodromes, railways, harbours and navigable inland waterways on the characteristics of street lighting suitable for use in the vicinity of an aerodrome and the need for consultation'.

To avoid confusion with AGL, it is recommended to use flat glass full cut-off (FCO) lanterns mounted horizontally, so that no light is emitted above the horizontal. Other solutions may be considered, depending on the particulars of the lighting proposed and its location in relation to the aerodrome.

It should be noted that there are provisions under the Air Navigation Order (ANO) directing that lights shall not be exhibited which are liable to endanger aircraft taking-off or landing, or which are liable to be mistaken for an aeronautical light.

5.6 Wind Turbines

5.6.1 Any planning application to erect a Wind Turbine within 30km of an Aerodrome will be the subject of safeguarding. Not only are they very tall structures which will require Physical safeguarding, but they also may have a significant impact upon NavAids and

Radars. This will require technical assessments to be done and this assessment process will be done via the Operations, Developments & Safety Department in conjunction with the Airfield Technical Manager.

5.7 Solar Farms

5.7.1 Any planning application to install a solar farm within the final approach routings and circuit pattern, for both IFR and VFR arrivals will go through a full assessment. This assessment will be via the Operations, Developments & Safety Department and done in conjunction with the Air Traffic Services Manager and the Airfield Technical Manager, using subject matter consultants as and where required.

6. Permitted development rights

6.1 Where the proposed development is to be undertaken by the Airport using its permitted development rights the MAG Safeguarding Officer will be informed in the same way and the same preliminary and full assessments undertaken.

7. Development within the licensed area

7.1 In addition to the “infrastructure and operational changes” required in EASA IR ADR.OR.B.040 and its supporting AMC, the CAA requires that the following additional changes are subject to prior approval

- i Constructions affecting sightlines from the VCR
- ii Developments on the movement area. (e.g. new aprons)
- iii Developments which might impact on the movement area. (e.g. new or extensions to terminals or piers).

Therefore, in addition to undertaking the necessary safeguarding assessments, those developments within the Operational Area, requiring prior approval will be submitted to the CAA by the Operations Development & Safety Manager. The submission to the CAA will include appropriate supporting information and will be followed up with an operational construction management strategy. (The details contained within to be obtained from the initial contractors’ site meeting).

8. Reporting the results of an assessment

8.1 The conclusions of all assessments will be notified to the MAG Safeguarding Officer as soon as they are known. These conclusions will be summarised and documented in the safeguarding electronic reference system.

8.2 Following a detailed consideration of the results of all assessments the MAG Safeguarding Officer will be determined whether an objection should be lodged with the consulting body or restrictive condition(s) should be proposed. In coming to this decision consultation with local management will be undertaken as deemed appropriate and reference made to previous consultations and established precedents.

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- 8.3 The consulting body will be notified of the outcome of the safeguarding assessment in writing. Where the consultation is covered by ODPM Circular 1/2003 this notification will be submitted within 21 or 28 days of receipt of the consultation dependant on the consultation body.
- 8.4 Prior to the notification being submitted to the Planning Authority (or internal manager in the case of permitted developments) the consultation and resulting assessments will be reviewed accordingly where necessary. This will be the responsibility of the MAG Safeguarding Officer

9. Archiving consultations

- 9.1 A full copy of the consultation, any resulting correspondence (including written submissions from the nominated internal assessor(s)) and a copy of the summary contained in the safeguarding electronic reference filing system which will be archived. All consultations will be maintained for a minimum period of 10 years.

10. Competence

- 10.1 Those appointed to undertake safeguarding assessments will be competent to do so on the basis of qualification, experience and training.
- 10.2 Each safeguarding assessor will have a nominated deputy appointed to act on their behalf during periods of absence. The nominated deputy will also be deemed competent on the basis of appropriate qualification, experience and training.
- 10.3 The competence of internal assessors will be periodically reviewed to ensure that their skills remain current and sufficient.

11. Pre-application discussions

- 11.1 Whilst not subject to a full safeguarding assessment pre-application discussions will be entered into where deemed appropriate. Any request for pre-application discussions should be requested via the MAG Safeguarding Officer.
- 11.2 The Operations, Developments & safety Department will enter onto the safeguarding reference system details of any pre-application advise, this will be in the form of a documented report.
- 11.3 All advice given under the terms of pre-application discussions must clearly note that the advice given by the Airport is not binding, is not final and that the Airport reserves the right to undertake a full safeguarding assessment at the appropriate juncture.
- 11.4 Details of any correspondence received or issued as pre-application advice will be done via the MAG Safeguarding Officer.

Section2 Appendix 1

Crane / Tall Equipment Permit Application Form

(Application to be made via EMA Safeguarding Website for the most up to date forms)

<https://www.eastmidlandsairport.com/about-us/operational-documents/safeguarding/>



Permit: Crane/Tall Equipment Permit

Permit Originator:			
Work Authorisation No (if applicable):			
Tall Equipment Contractor:			
24 Hour Mobile	Contact name:		
Working on Behalf of (Main Contractor):			
24 Hour Mobile	Contact name:		
Location of Tall Equipment (Address incl Postcode)			
Area Affected by Tall Equipment			
Purpose of Tall Equipment Operation			
Drawing of Location:			
Daily Hours of Operation (HH:MM):	From: [] hrs	To: [] hrs	
Operation From Date	[]		
Operation To Date	[]		

Lift details			
National Grid Easting/Northings	[] E	[] N	
Latitude/Longitude N W	[] N	[] W	
Ground Elevation	AOD = Above Ordnance Datum	[]	Metres
Working Height of Equipment (Perpendicular to Ground)	AGL= Above Ground Level	[]	Metres
Working Radius (boom length)	[]		Metres

Authorisations			
Performing Authority Signatory (Works Manager) - I understand the hazards of this work and the precautions that need to be taken. These have also been explained to the named permit user:			
Performing Auth Print Name	[]	Date	[]
		Performing Auth Signature:	[]

Please e-mail completed application form to ops.safety@eastmidlandsairport.com

REQUIREMENTS FOR OPERATORS OF TALL EQUIPMENT

Approval should be sought from East Midlands Airport if a crane or other tall equipment is to be used within 6km of the aerodrome above a height of 10m AGL or above the surrounding trees or structures. In some circumstances, for exceptionally tall equipment (50m AGL or more) it is advised to consult East Midlands Airport if operating up to a distance of 15km from the aerodrome.

To ensure the safety of aircraft operations, several Obstacle Limitation Surfaces exist in the vicinity of the aerodrome. These surfaces govern the permitted height of any equipment operating in a specific location.

Additionally, in certain circumstances, tall equipment may interfere with essential navigational aids such as radar, approach lighting or Instrument Landing Systems.

Even when obstacles do not penetrate any Obstacle Limitation Surfaces or interfere with navigational aids, account must be taken of the relative hazard to aircraft. East Midlands Airport is required to assess such obstacles and take measures to ensure that the safety of aircraft operations is not compromised at any time.

To enable an initial assessment, persons wishing to operate tall equipment, in the vicinity of, or on the airport (landside or airside), must apply for a Tall Equipment Permit by submitting

the following information to East Midlands Airport at least **21 days** prior to the **planned start of operation**:

- Operating Location of tall equipment – Address, postcode and either six figure National Grid Eastings/Northings or Latitude/Longitude.
- Working height of equipment – Perpendicular height above ground level at operating location.
- Type of equipment – eg: Tower crane, mobile crane, piling rig.
- Dates and daily times of operation.
- Purpose of operation.

Upon receipt of the above information, East Midlands Airport will carry out an obstacle assessment to assess the impact on Obstacle Limitation Surfaces and/or navigational aids. Provided that the operational impact is acceptable, a signed-off Tall Equipment Permit will be issued to the applicant.

In certain circumstances, where the operation of tall equipment would penetrate one or more Obstacle Limitation Surfaces, East Midlands Airport may be required to seek further approvals before authorising the operation, as there may be implications for Instrument Flight Procedures which flight crews must be made aware of.

If IFP Assessment is required, East Midlands Airport will make the applicant aware of this, and it should be noted that an additional fee, will be payable by the applicant, to East Midlands Airport. It can take up to 21 working days to gain operating approval from the IFP Designer. This may mean that the application process is extended by 21 days if a IFP assessment is required.

The Air Navigation Order makes it an offence to act recklessly or negligently in a manner likely to endanger aircraft or any person in an aircraft. If guidance/operating restrictions are imposed by East Midlands Airport, they must be adhered to.

Frequency Permit Application Form (Application to be made via EMA safeguarding website for most up to date forms)

<https://www.eastmidlandsairport.com/about-us/operational-documents/safeguarding/>

Frequency Permit Application Form



Date of use		Applicant Name	Frequency		Bandwidth	Power Output (EIRP)	Digital or Analogue	If Digital TDM or FDM	Class of Emissions	Antenna Height in metres	Make of Equipment	Type of Transmission	Purpose
From	To		Rx	Tx									

Please e-mail completed application form to ops.safety@eastmidlandsairport.com

1A FREQUENCY APPLICATION FORM
1A SAFEGUARDING DEPARTMENT

Applications should be submitted within a 28 Day Notice period