

CIVIL AVIATION ACT 1982

THE BIRMINGHAM AIRPORT LIMITED
(Rights over Land)
ORDER 2020

STATEMENT OF REASONS

BIRMINGHAM AIRPORT LIMITED
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Contents

1.	Introduction	3
2.	Description of the Order Land	4
3.	Obstacle Limitation Surfaces	5
4.	Civil Aviation Act 1986 Section 44	9
5.	Obstacle Reduction and Removal Requirements	10
6.	Phase 2 Obstacle Limitation Requirements	10
7.	Conclusion	11
8.	Additional Information	11
9.	List of Documents, Maps or Plans	12
	Glossary of Terms	14

1. Introduction

1.1

This document is produced by Birmingham Airport Limited ("the Airport Company") the European Union Aviation Safety Agency (EASA) aerodrome certificate holder for Birmingham Airport. Birmingham Airport became EASA certificated in February 2016 having previously been a United Kingdom Civil Aviation Authority (CAA) licensed aerodrome. This statement of reasons is provided in connection with the making of an order under the Civil Aviation Act 1982 Section 44 in relation to the previously undertaken scheme to extend Birmingham Airport's runway. It is titled "The Birmingham Airport Limited (Rights over Land) Order 2020" ("the Order"). The Airport Company has made the Order pursuant to the powers provided at Sections 44(1), 44(2) and 44(3) of the Civil Aviation Act 1982. In this Statement of Reasons, the land included within the Order is referred to as "the Order Land".

1.2

The Airport Company is seeking these rights to restrict the height of shrubs, hedges, or trees within the Order Land which would prevent the ongoing safe and efficient use of the extended runway and associated infrastructure ("the Scheme") at Birmingham Airport ("the Airport").

1.3

The Scheme involved the extension of the runway and associated infrastructure, including the realignment of a section of the A45 Coventry Road, a new air traffic control tower, revisions to the previously existing fuel farm, a new exit taxiway, the treatment of obstacles, and the diversion of services and watercourses. This Order relates to land which is outside of the existing Airport boundary and which lies within the areas defined as subject to obstacle limitation requirements in EASA Certification Specifications and Guidance Material for Aerodrome Design (CS-ADR-DSN) (the "Order Land"). Planning approval was granted for the Scheme by Solihull Metropolitan Borough Council on 2 November 2009 (reference 2008/22) and Phase 1 of the development was brought into full operational use on 1 May 2015.

1.4

The Scheme has been undertaken in two phases, the first phase involved a 450 m extension to the runway, which was completed in May 2014. The second phase involves placing a tunnel structure across the realigned A45 and extending the aerodrome boundary and the runway by an additional 150m to the south. The second phase will be developed as and when there is an operational requirement. When Phase 2 is undertaken a further Section 44 Order will be required as the operational requirements of the runway will change again (see Section 6). This Order relates solely to the obstacle limitation requirements of Phase 1 of the Scheme.

1.5

The Airport Company has sought specialist advice from suitably qualified consultants with respect to the need for, extent and nature of obstacle treatment work associated with this Order. Specifically consultants have been engaged to provide detailed advice on the extent of obstacle clearance required and where trees are affected the arboricultural implications of the height reductions required.

1.6

The Order Land is identified in the Order Map accompanying the Order.

2. Description of the Order Land

2.1

The extent of the Order Land is determined by the operational requirements of the extended runway and the Airport's compliance with CS-ADR-DSN and CAP 1732 Aerodrome Survey Guidance (CAP1732), which collectively necessitate obstacle height restrictions on land outside of the Airport's current boundary and the Airport Company's land ownership.

2.2

The Order Land lies to the south of the extended runway. Phase 1 of the physical extension to the runway was constructed at the southern end of the runway with no extension at its northern end. Consequently, no changes are required to the Obstacle Limitation Surfaces ("OLS") relating to the area to the north of the runway and therefore the only land to be covered by this Order lies to the south of the runway.

2.3

The parcels of land included in the Order are shown on the plan referred to in the Order ("the Order Map"). The Order Land is coloured red on the Map to the south-east of the existing Airport site and A45 Coventry Road and includes residential, agricultural and grazing land, commercial premises and highway land.

2.4

The outer edges of the Order Land are relative to the extended centreline of the runway and are determined by the extent of obstacle infringements of the Approach Surface and at its edges the Transitional Surface. The southern boundary is determined by the fact that there are no significant obstacle features, vegetative or man made to the south of the row of properties fronting St Peters Lane, Bickenhill, although within those properties there are features that have required treatment. The Order Land therefore encompasses all of those properties.

2.5

The Order Land is in 27 separate parcels. Those properties that are not coloured red but sit in an area constrained by the obstacle limitation surfaces are those properties either owned by a subsidiary company of Birmingham Airport or privately owned by a third party, where BAL has successfully negotiated a Deed of Easement to obtain access rights over such land to restrict the height of any trees, hedges or shrubs situated on such land

3. Obstacle Limitation Surfaces

3.1

EASA Certification Specifications and Guidance Material for Aerodrome Design (CS-ADR-DSN) states that, "the effective utilisation of an aerodrome may be considerably influenced by natural features and man-made constructions inside and outside its boundary. These may result in limitations on the distance available for take-off and landing and on the range of meteorological conditions in which take-

off and landing can be undertaken. For these reasons, certain areas of the local airspace must be regarded as integral parts of the aerodrome environment.

3.2

The Order Land and the airspace above it is considered in this regard therefore to be an integral part of the aerodrome environment.

3.3

Obstacle Limitation Surfaces (OLS) are established for each runway according to the code number (as set out by the CAA and determined by runway length) applied to the runway and in the case of approach related OLS the equipage of the runway with navigation aids to permit landings in low visibility. Essentially, the higher the navigation aid equipage and the low visibility capability, the greater are the obstacle limitation requirements. The commensurate ability to use the runway in low visibility conditions, gives greater reliability to the usability of the runway.

3.4

Runways are further described with reference to their magnetic orientation, convention being that runways are numbered by two numbers which are derived from the magnetic heading of the runway to the nearest 10 degrees. In the case of Birmingham Airport, the magnetic headings of the runway are 148 degrees and 328 degrees respectively, rounded up to 150 degrees and 330 degrees. The runway identity is then taken by removing the final of the three figures to give Runway 15 and Runway 33 respectively. Each direction is then regarded as a separate runway with obstacle limitation requirements pertinent to its own physical characteristics and navigation aid equipage.

3.5

Three of the OLS described in CS-ADR-DSN are relevant to the Order: Take Off Climb Surface (TOCS), Approach Surface (AS) and Transitional Surface (TS). Specifically, these are the TOCS associated with Runway 15 and the AS and TS associated with Runway 33 which collectively assist in ensuring the safe use of the runway.

3.6

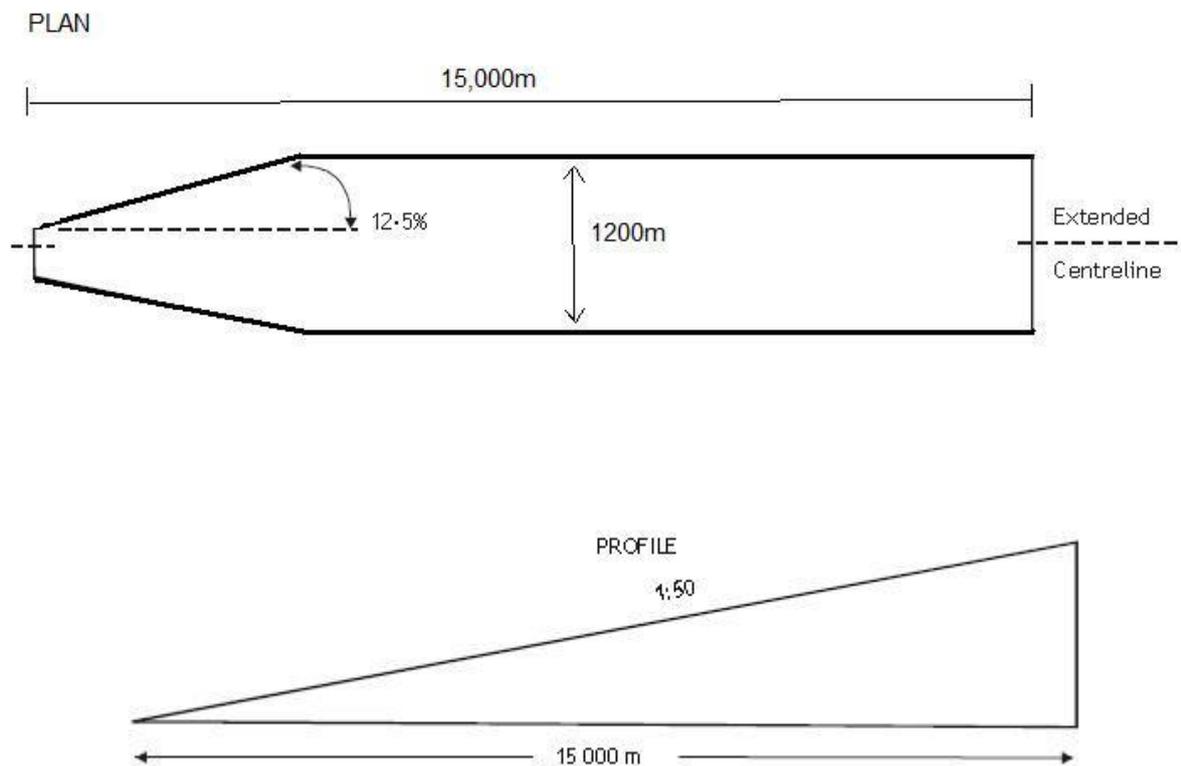
In addition, the CAA publication CAP 1732 Aerodrome Survey Guidance describes survey requirements for the area of the TOCS that includes the need to survey all obstacle features that exceed a 1.2% slope, known as the obstacle collection surface of the same characteristics of the TOCS. The obstacle data collected in that way is used to populate a chart showing the obstacle features that need to be taken into account in aircraft take off performance calculations undertaken by aircraft operators. The aircraft performance calculations are intended to ensure that any aircraft operating a public transport (commercial) flight takes off at a weight which with the known and forecast conditions will attain an appropriate level of safety as determined by the regulator. It is this requirement and its application to the Runway 15 TOCS which necessitates the Order with the minimisation of obstacle collection surface obstacles improving the efficient use of the runway. The fewer and less significant the obstacles protruding above the obstacle collection surface, the more efficient use can be made by aircraft of the runway with regard to payload and distance flown.

3.7

The OLS are defined fully within CS-ADR-DSN, relevant excerpts of which are provided as Appendix 3. To summarise there are three separate CS-ADR-DSN defined OLS that are of relevance to the Order and they are described below:

Take Off Climb Surface

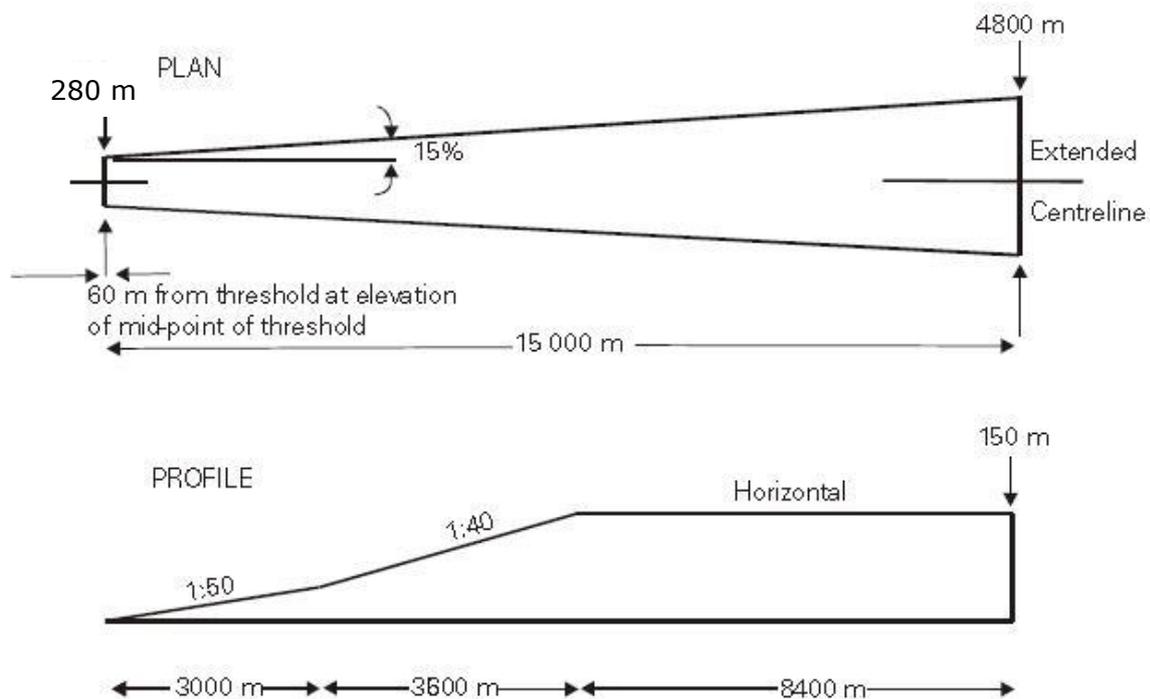
A TOCS is an inclined plane located beyond the end of the runway available for take-off. Its limits comprise an inner edge of 180m, centred on and perpendicular to the extended centreline of the runway with at the ends of the inner edge, two sides which diverge uniformly. The sides diverge at a rate of 12.5% until reaching a maximum width of 1200m and continuing thereafter at that width to a distance of 15,000m from the inner edge. The inner edge elevation is the ground level on the centreline at that point and the slope rises from the inner edge at a rate of 2%



Approach Surface

An AS is a series of inclined planes preceding the landing threshold. Its limits comprise of a horizontal inner edge of 280m perpendicular to and centered on the centreline of the runway located at a distance of 60m before the landing threshold. Previously under CAP168 the AS had a horizontal inner edge of 300m. This has been reduced by 20m to 280m by EASA CS-ADR-DSN. The AS further comprises of two sides originating at the ends of the inner edge and diverging uniformly at 15% and an outer edge parallel to the inner edge. The elevation of the inner edge is equal to the elevation of the mid-point of the landing threshold. Beyond the inner edge it rises at a rate of 2% until reaching 150m above the threshold elevation.

From that point the approach surface slope increases to 2.5% for 3600m before continuing as a horizontal plane for a further 8400m.



Transitional Surface

A TS is a complex surface sloping up from the side of the runway strip and from the side of the initial part of the approach surface. The slope of the transitional surface is 14.3% and begins at either the ground level of the runway at a distance of 150m from runway centreline or at the level of the base of the approach surface. The outer limit of a transitional surface is determined by its intersection with the plane of the inner horizontal surface.

3.8

The OLS all originate from specified locations on the Airport site and can be described by reference to heights above ordnance datum. Taking account of such origin levels at Birmingham Airport the OLS for the Order Land using a flat plain scenario are;

Take off climb surface

From its origin reference point on the Airport the TOCS rises as an inclined plane from 103.467m AOD and rises to approximately 123.6m AOD at the outermost easterly point of the Order Land at its junction with St Peters Lane and approximately 126.8m at the outermost southerly point of the Order Land at its junction with Catherine de Barnes Lane.

Approach Surface

From its origin reference point on the Airport the AS rises as an inclined plane commencing at 99.930m AOD and rises to approximately 131m AOD at the outermost easterly point of the Order Land to the south-east of Bickenhill Village and approximately 135.3m AOD at the outermost southerly point of the Order Land at its junction with Catherine de Barnes Lane.

Transitional Surface

The TS is a sloping surface commencing from the side of the runway strip and the side of the approach surface. It rises to 137.471 m AOD at its outer easterly and westerly edges.

The topography of the surrounding areas is important as rising land levels relative to OLS origin levels will effectively reduce the permitted heights of features at any given point the removal of obstacles therefore in different locations within the Order Land will therefore depend on the impact of such topography in relation to the OLS and the OLS datum levels.

3.9

The requirement for obstacle removal can be reduced to an extent through the concept of shielding being employed when an existing substantial and permanent object or natural terrain penetrates an obstacle limitation surface. When it is considered that such an obstacle is permanent, objects of equal or lesser height around it may, at the CAA's discretion, be permitted to penetrate the surface.

3.10

An object, building, structure or terrain which is accepted as a shielding obstacle and which penetrates an approach or take-off climb surface will create two shielding planes. The first plane is horizontal at the elevation of the top of the obstacle and extends from the obstacle in the direction away from the runway. The second plane extends from the top of the shielding obstacle, towards the runway with a negative slope of 10%. The width of these planes will be the width of the obstacle (measured in the plane normal to the extended centreline of the runway) at the obstacle, decreasing with sides parallel to the sides of the relevant protecting surface, until the point where these projected lines converge, or intersect the take-off climb surface or the approach surface.

3.11

It is possible therefore that if a permanent obstacle exists that shielding of other features within the extents specified above may be permissible. However if that obstacle is capable of removal at a later date the OLS will revert to smooth surface planes.

3.12

The extended runway has a displaced landing threshold on Runway 33 (landing towards the North) and the start of the TOCS associated with Runway 15 (departing towards the South) is located closer to the southern paved end of the runway, south of the Runway 33 displaced threshold. This means that the Runway 15 Take Off Climb Surface lies beneath the wider Runway 33 Approach Surface. The Runway 15 obstacle collection surface, shares the same plan form as the Runway 15 Take Off Climb Surface but has a lower slope to it.

3.13

Consequently the Order Land is composed of areas that are overlain by both TOCS and AS in which case the TOCS is the more limiting of the two, the AS only, or the TS. Within the area overlain by the Runway 15 TOCS the Runway 15 obstacle collection surface also applies which will further restrict the height of features where appropriate and beneficial to do so.

3.14

The southern boundary of the Order Land has been arrived at on the basis that ground levels cease to keep rising significantly beyond that area and that consequently as the OLS continue to rise, the presence of tall features that will penetrate the OLS reduces rapidly.

3.15

The AS and TS serving Runway 33 and the TOCS established for Runway 15 are illustrated in the accompanying plan at Appendix A.

4. **Civil Aviation Act 1982 Section 44**

4.1

Section 44 paragraph 1 of the Civil Aviation Act 1982 states that, "The Secretary of State may make an order under this section if he is satisfied that it is expedient to do so in order —

(a) to secure the safe and efficient use for civil aviation purposes of any land which is vested in a relevant authority or which such an authority proposed to acquire; or

(b) to secure the provision of any services required in relation to any such land; or

(c) to secure that civil aircraft may be navigated with safety and efficiency.

4.2

Section 44 paragraph 2 of the Civil Aviation Act 1982 specifically states that "Such an order may provide for the creation-

(a) if it is made by virtue of paragraph (a) and (b) of subsection (1) above, in favour of the relevant authority in question or, where that authority is Eurocontrol, either of Eurocontrol or the Secretary of State; or

(b) if it is made by virtue of paragraph (c) of that subsection, in favour of the Secretary of State

of easement or servitudes over land or of other rights in or in relation to land, including rights to carry out and maintain works on any land and to install and maintain structures and apparatus on, under, over or across any land.

4.3

Section 44 Paragraph 3 of the Civil Aviation Act 1982 goes on to state that "any such order may contain such consequential, incidental and supplemental provisions as appear to the Secretary of State to be necessary or expedient for the purposes of the order, including, in particular, provisions for authorising persons to enter upon land for the purpose of carrying out, installing, maintaining or removing any works, structures or apparatus."

4.4

It is to seek powers over the Order Land under the terms of the Civil Aviation Act 1982 Section 44 that the Airport Company has made this Order to empower it to remove or reduce features and to restrict future development or vegetation growth insofar as is relevant to the maintenance of the OLS.

5. Description of Tree Reduction and Removal Requirements

5.1

Trees and hedges on the Order Land affected by the requirements of the OLS can be assessed as being suitable for retention without treatment, suitable for retention with treatment and not suitable for retention.

5.2

Those that require some treatment to ensure compatibility with the OLS requirements will be treated to the extent necessary to comply with the height restriction at that location and to ensure that a degree of future growth allowance prior to further treatment being necessary is allowed for.

5.3

Those trees for which retention is not considered to be viable in arboricultural terms will be removed in their entirety and where possible replaced with shorter growing, slow growing, non berry bearing tree species. This is in order to ensure that maintenance of tree heights at an acceptable level can be achieved with the minimum of periodic treatment and that any new planting is not of a nature that will increase the attractiveness of the area to bird species that may present a hazard to aviation safety and conflict with the Airport's bird hazard management requirements.

5.4

Those trees that require no initial treatment may do so at a later date due to natural-growth. Rights of access will be required to effect suitable treatment at a approximately 3-5 years dependent on growth.

5.5

The concept of shielding described at paragraph 4.8 will be employed wherever possible to ensure that as many trees as possible can be retained, with or without treatment as appropriate.

6. Phase 2 Obstacle Limitation Requirements

In Paragraph 1.4 it was noted that the Order applies to the first phase of the Scheme and that as and when Phase 2 of the Scheme is undertaken a further Section 44 Order will be required. The changed requirements potentially relate to a relocation of the landing threshold for Runway 33 which would result in a new Approach Surface and Transitional Surface and a new end of take off run for Runway 15 which would result in a revised Take Off Climb Surface. Precise details of the possible changes and their impact would be confirmed prior to seeking a further Order.

7. **Conclusion**

7.1

The Order Land lies within the areas defined as subject to obstacle limitation requirements in”) EASA Certification Specifications and Guidance Material for Aerodrome Design (CS-ADR-DSN). Birmingham Airport is seeking rights under Section 44 of the Civil Aviation Act 1982 to restrict the height of shrubs, hedges, or trees within the Order Land which would prevent the safe and efficient use of the extended runway and associated infrastructure. All treatment of obstacles within the Order Land is to be conducted carefully and sensitively and in the case of trees in a manner most appropriate for the individual tree and its location

7.2

The runway extension scheme is a two-phase scheme with this application for powers limited to the first phase of development. An additional application will be required as and when phase two is brought forward.

8. **Additional Information**

8.1

Statutory compensation will be available to those entitled to claim it under the relevant Act(s).

8.2

In addition, and in accordance with Paragraph 26 of Part 1 of the Memorandum to Circular 06/2004, the Airport Company will continue to offer relevant parties who are concerned about the Order full access to alternative dispute resolution (ADR) techniques. The Airport Company recognises the benefits of ADR in terms of saving time and money for all parties and thereby possibly reducing the stress which the Order may place on relevant parties.

8.3

Owners and tenants of land and property affected by the Order who wish to discuss compensation matters with the Airport Company should contact:

Trevor Street

Email: trevor.street@birminghamairport.co.uk

Tel: 0121 767 7252

8.4

Owners and tenants of land and property affected by the Order who wish to discuss technical and operational matters with the Airport Company should contact:

Andrew Davies

Email: andrew.davies@birminghamairport.co.uk

Tel: 0121 767 7073

8.5

Copies of the Order, Order Map and this Statement of Reasons can be inspected during normal office hours at Birmingham Airport, Diamond House, Birmingham, B26 3QJ. A copy can also be viewed online at www.birminghamairport.co.uk.

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Glossary of Terms

Aerodrome Licence	Issued to Birmingham Airport Limited by the Civil Aviation Authority and dated 20/11/11
Airport	Birmingham Airport
Airport Company	Birmingham Airport Limited
CAA	Civil Aviation Authority
CAP 1732	Aerodrome Survey Guidance
CS-ADR-DSN	European Union Aviation Safety Agency Certification Specifications and Guidance Material for Aerodrome Design
Obstacles	All fixed (whether temporary or permanent) and mobile objects or parts thereof, that are located on an area intended for the surface movement of aircraft or that extend above a defined surface intended to protect aircraft in flight, or that stand outside those defined surfaces and that have been assessed as being a hazard to air navigation
Obstacle Collection Surface	The Obstacle collection surface is described in CAP1732 and is a 1.2% slope above which features should be surveyed which extends for a distance of 10km and splays from its point of origin at 15% each side, following the plan of the Take Off Climb Surface.
Order	The Birmingham Airport Limited (Rights over Land) Order 2020
Order Land	The land identified on the Order Map for which the Airport Company is seeking the Order
Order Map	A plan accompanying the Order identifying the parcels of land the Airport Company is seeking rights over
Runway Strip	An area of specified dimensions enclosing a runway intended to reduce the risk of damage to an aircraft running off the runway and to protect aircraft flying over it when taking off or landing
Scheme	The extension of the runway and associated infrastructure
Threshold	The beginning portion of the runway usable for landing