



Department  
for Transport

# Airport slot reform

a consultation on proposals to reform the  
airport slot allocation system



December 2023

Department for Transport  
Great Minster House  
33 Horseferry Road  
London SW1P 4DR



© Crown copyright 2023

This publication is licensed under the terms of the Open Government Licence v3.0 except where otherwise stated. To view this licence, visit <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/> or contact, The National Archives at [www.nationalarchives.gov.uk/contact-us](http://www.nationalarchives.gov.uk/contact-us).

Where we have identified any third-party copyright information you will need to obtain permission from the copyright holders concerned.

This publication is also available on our website at [www.gov.uk/government/organisations/department-for-transport](http://www.gov.uk/government/organisations/department-for-transport)

Any enquiries regarding this publication should be sent to us at [www.gov.uk/government/organisations/department-for-transport](http://www.gov.uk/government/organisations/department-for-transport)

# Contents

Ministerial foreword	5
Introduction	6
What is a slot?	6
Why might an airport want to become slot coordinated?	8
Current slot allocation process	8
The relationship between slot rules and airport capacity	9
Aviation 2050 and slots	13
COVID-19 and slots	15
Why reform the slot allocation system now?	17
Slot reform aims and objectives	19
Consultation scope	20
Next steps	22
How to respond	24
Freedom of information	25
1. A more efficient slot system	26
1. Removing barriers to entry including a re-defined new entrant rule	27
2. Restrictions on newly allocated slots	30
3. Removal of re-time priority	32
4. Permanent powers to improve resilience	33
5. Increase to slot usage ratio	38
2. A more transparent slot system	41
1. Strengthened coordination committee role	42
2. Guidance on secondary criteria	44
3. Power to direct the UK slot coordinator	47
4. A slot register, a specified platform for all UK slot trades and strengthened oversight of secondary trading	49

5. Limit on slot leasing	54
3. Allocation of new slots	57
Background – airport and slot capacity in the UK	58
Why allocate new slot capacity differently?	58
1. Auction of new slots	60
2. Ring-fencing of new slots for certain purposes	65
4. A more dynamic slot system	71
1. Fixed duration Historic Rights	72
5. Additional consultation questions	77
Glossary of terms	78
Data sources used in figures and analysis	80
Consultation principles	82
Annex A: Full list of consultation questions	83
Annex B: Auction design	88

Annexes provided as separate documents:

Annex C: Slot reform impact assessment

Annex D: Cambridge Economic Policy Associates Limited (CEPA) report

Annex E: Oxera report

## Ministerial foreword

Aviation has been a major success story for the UK. Before the COVID-19 pandemic, we had the largest aviation market in Europe in terms of total passengers, handling over two million commercial flights annually, to over 370 direct destinations in over 100 countries. Our air transport and aerospace sector is an economic powerhouse too, contributing some £20 billion to GDP and providing 230,000 jobs pre-pandemic. The Prime Minister has been clear that one of his priorities is to grow the economy. At the heart of that goal must be a resilient and efficient aviation sector. One that facilitates the trade, tourism and business travel that will continue spread opportunity and prosperity across the country.

The last few years have been the toughest in aviation's 100 year history. But the sector is bouncing back, and our aim is to continue supporting its recovery and return to growth. Crucially, the sector now has an opportunity to build back better, specifically around how we manage airport capacity through the slot allocation system. Brexit has freed us from regulations managed at a European level and allows us to re-examine how we regulate slots in a way that works better for the UK's needs.

Slot reform will empower aviation to emerge from the COVID-19 pandemic as a more efficient and resilient sector. This consultation sets out proposals for reform that are aimed at making the system more efficient, transparent and dynamic. We also want to use this opportunity to futureproof the system so that if new airport capacity is created it can deliver the greatest possible benefits.

Aviation is a global business so we will work alongside our stakeholders and international partners to maintain global standards. Working together, we can ensure airport capacity is used to its fullest to reduce delays, optimise flight schedules and deliver benefits for passengers and businesses alike.

In *Flightpath to the Future* (May 2022) we talked about our positive and ambitious plans to rebuild and strengthen the aviation industry. Slot reform is an important part of that plan. We encourage you to take this opportunity to provide views and use your knowledge and expertise to shape the future of UK slot allocation.



**The Rt Hon Mark Harper**  
Secretary of State for Transport



**Anthony Browne**  
Minister for Aviation

## Introduction

Airport slots are critical to how capacity is managed at the UK's busiest airports. In the strategic framework for aviation 'Flightpath to the Future', which was published in May 2022, the Government committed to consulting on proposals for longer term reform of the slot allocation system.

The Government previously set out its initial thinking on reform of the slot allocation system as part of the Aviation 2050 consultation in 2018 and sought views from the public and the aviation industry. Since then, the aviation sector around the world has been through huge upheaval as a result of the COVID-19 pandemic. This has highlighted some areas where the current slot allocation system has struggled, not least in how it responds to significant disruption to international travel.

We want to use this opportunity to consider reforms to the slot allocation system to ensure it continues to support the aviation sector both now and in the longer term. We also want to ensure the reforms enable passengers and businesses to benefit from any future new slot capacity, and, where appropriate, support wider Government priorities such as connectivity.

The objectives for slot reform are:

- Stimulating a competitive environment by creating a more **efficient, transparent, and dynamic** slot market; and
- Establishing a **framework** for the allocation of **new slots**.

Ultimately, we want any reforms that are taken forward to result in better outcomes for businesses and consumers. More efficient use of existing and future UK airport slot capacity could contribute to lower fares, more destinations, and service innovations by airlines and airports.

This consultation will look at issues identified with the current operation of the UK's airport slot allocation system, building on the views gathered through the Aviation 2050 process and our experience throughout the COVID-19 pandemic. It will also seek views on proposals for reforms to allocation of slots when new slots become available. The consultation sets out various proposals which could help deliver our objectives for slot reform and seeks views and evidence to inform decisions on next steps.

## What is a slot?

1. An airport slot is the permission given to an airline operator to use the full range of airport infrastructure (runway, terminal, gates, etc.) at a specific date and time for

landing or take-off at an airport. The number of slots available at an airport are intrinsically linked to the airport's infrastructure capacity and the number of flights that can operate from it. Slots are allocated in series, i.e., sequences of at least five slots at the same time on the same day of the week, which are distributed regularly in the same scheduling season. So, a slot series would for example be a 09:15 departure slot over at least five consecutive Mondays in the summer season.

- For slot coordination purposes, airports are divided into three different categories:

**Level 1 (non-coordinated):** airports where the capacity of the airport infrastructure is generally adequate to meet the demands of airport users at all times.

**Level 2 (schedules facilitated):** airports where there is potential for congestion during some periods of the day, week, or season which can be resolved by schedule adjustments mutually agreed between the airlines and facilitator. A facilitator is appointed to facilitate the operations of airlines using or planning to use the airport.

**Level 3 (coordinated):** airports where capacity providers have not developed sufficient infrastructure, or where governments have imposed conditions that make it impossible to meet demand. A coordinator is appointed to allocate slots to airlines and other aircraft operators using or planning to use the airport as a means of managing the declared slot capacity.<sup>1</sup>

- The UK currently has eight airports that are categorised as Level 3 on year-round basis. The Level 3 airports are London Heathrow, London Gatwick, London City, London Stansted, London Luton, Manchester, Birmingham and Bristol.<sup>2</sup> Airport Coordination Limited (ACL) is the independent slot coordinator responsible for allocating slots at these airports.



<sup>1</sup> [Worldwide Slot Guidelines](#) (2022)

<sup>2</sup> Leeds Bradford airport has been approved by the Secretary of State to be categorised as Level 3 for summer season night-time only starting from Summer 2024 season.

## Why might an airport want to become slot coordinated?

There are various factors that can lead to capacity constraints at an airport and necessitate slot coordination, including:

- **Airport operating hours** – this includes night flight restrictions.
- **Airport infrastructure capacity constraints** – the number of runways, the number and size of terminals etc.
- **Annual Movement Quota (AMQ)** – the number of flights an airport can accommodate per annum.
- **Hourly Runway Movement Limits** – the number of flights that can take-off and land within an hour. This is generally informed by the AMQ.
- **Terminal Flow Limits** – the maximum passenger capacity of a terminal building; this can include check-in, security, baggage, customs, immigration etc.

## Current slot allocation process

4. Current legislation on slot allocation is set out in Regulation (EEC) No 95/93 which was amended and retained in UK law following the UK's departure from the EU (the Regulation).<sup>3</sup> This is supplemented by the Worldwide Airport Slot Guidelines (WASG), which are maintained by the Worldwide Airport Slot Board (WASB). The WASG provides guidance on slot scheduling and seeks to achieve consistency of approach taken by slot coordinators internationally. Coordinators must allocate and monitor slots in a neutral, transparent and non-discriminatory way.
5. The WASG set out primary and secondary criteria which are followed by coordinators when allocating slots for passenger and cargo flights. The **primary criteria**, which are also set out in the Regulations, require that slots are first allocated giving precedence to historic slots. This is referred to as 'Historic Rights' or 'Grandfather Rights'. To retain slots under these rights, airlines must fly at least 80% of each series of slots during a season. This is known as the '80:20' or 'use it or lose it' rule and means that as long as airlines continue to maintain 80% and above usage of their slots each year, they maintain their Historic Rights and retain that series of slots in perpetuity.
6. Once slots have been allocated based on Historic Rights, the remaining slots are placed in a pool and the slot coordinator allocates them based on additional

---

<sup>3</sup> This Regulation is additionally supplemented by the [Airports Slot Allocation Regulations 2006 \(S.I. 2006/2665\)](#).



**secondary criteria.** Secondary criteria are set out in the WASG and reflect factors such as connectivity, competition and operational factors.<sup>4</sup>

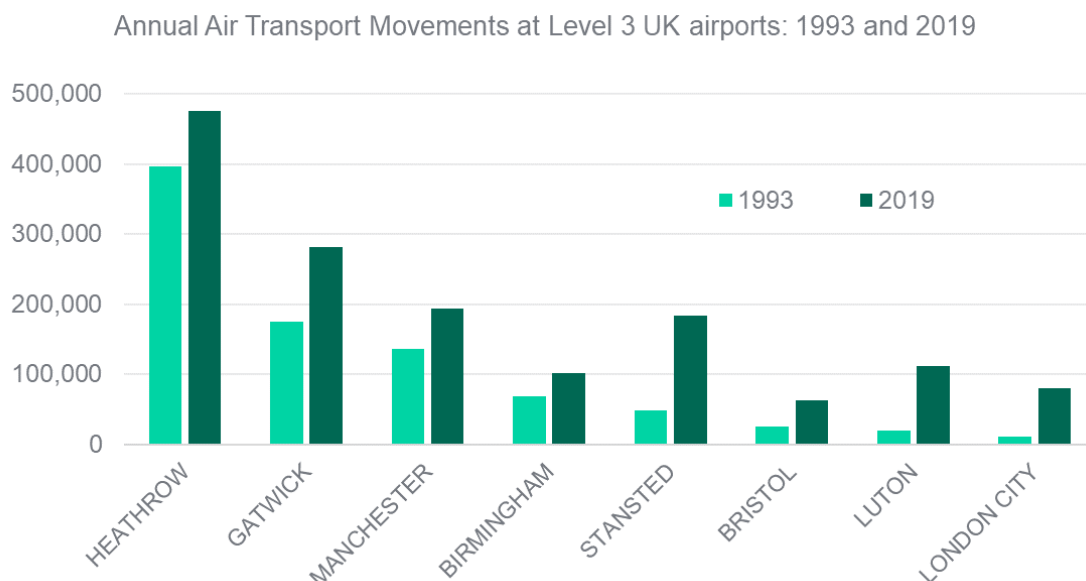
7. Slot coordination is an international exercise facilitated by the International Air Transport Association (IATA) through the WASG. Slots are allocated by coordinators around the world twice a year, for the summer season (which runs from the last Sunday of March until the last Saturday of October) and for the winter season (which runs from the last Sunday of October to the last Saturday of March). Every slot allocated to an airline at one airport requires a corresponding slot at another airport. In simple terms, every departure slot from one airport needs an arrival slot at another airport.

Annual Slot Allocation Activity		
Activity	Summer	Winter
Initial coordination	October	May
IATA Slot conference	November	June
Slot return deadline	January	August
Determine Historic Rights	31 January	31 August
Capacity review	February	September
Start of season	Last Sunday in March	Last Sunday in October
Monitor slot use	Last Sunday in March to last Saturday in October	Last Sunday in October to last Saturday in March

## The relationship between slot rules and airport capacity

8. When the Regulation and slot allocation process based on primary and secondary criteria were first introduced, airline demand for slots was below the available capacity at airports across the UK. Availability of airport capacity meant that there was opportunity for new entrant airlines to secure slots, and for incumbents to increase their slot holdings at their desired airports, including at airports which today are some of the UK’s busiest airports. Aviation demand has grown considerably since then.

<sup>4</sup> [Worldwide Slot Guidelines](#) (2022)

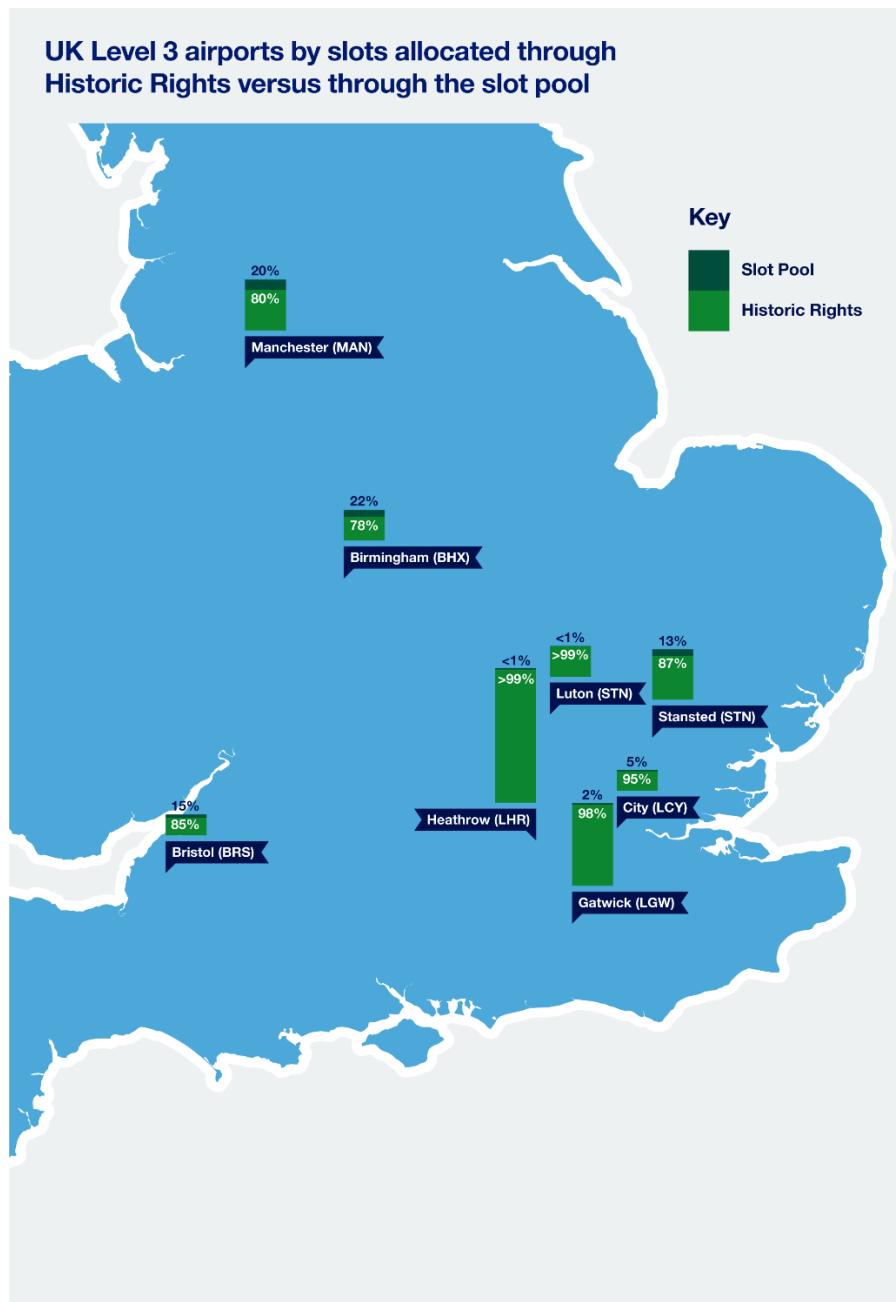


Annual Air Transport Movements (passenger and cargo-only) at UK Level 3 airports: 1993 and 2019

Source: DfT Analysis of Civil Aviation Authority Airport Data

9. This growth has created opportunities for new airlines, destinations and routes to become available to businesses and passengers. However, the growth has also meant that airport capacity, and with it slot capacity, has become more congested. This in turn has made it challenging for both new airlines and incumbents to obtain slots at the busiest airports. Slots at UK airports have increasingly been allocated on the basis of the primary criterion of Historic Rights, making slot holdings at UK airports largely static. At present, approximately 92% of slots at slot coordinated airports are allocated on the basis of Historic Rights. The percentage is even higher at the busiest airports (around 98% at London Gatwick Airport and more than 99% at London Heathrow Airport).<sup>5</sup> This is not only a characteristic of UK airports but a worldwide phenomenon.

<sup>5</sup> DfT analysis of ACL data.

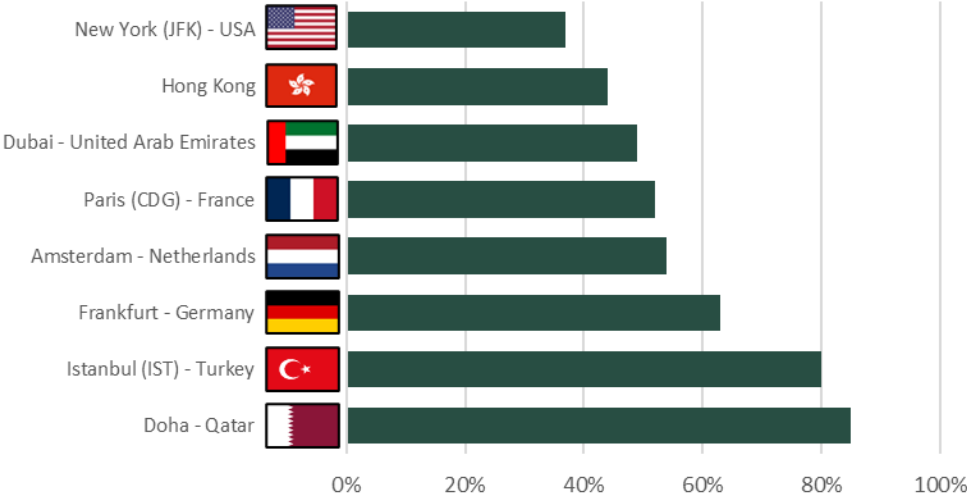


- Allocation of slots based on Historic Rights has proved beneficial insofar as it provides certainty for airlines, businesses and consumers by facilitating reliable and consistent flight schedules from one season to the next. Airlines can be confident that, as long as they comply with the 80% usage requirement, they will retain their slots. This supports longer term plans and investment decisions such as starting and building a new route, including investing in new aircraft and recruiting and training the people needed to operate the route. Airlines often state that they need the certainty provided by Historic Rights to have the confidence to make investments. Without the relative certainty provided by Historic Rights, airlines could become more hesitant to make these kinds of investments.<sup>6</sup>

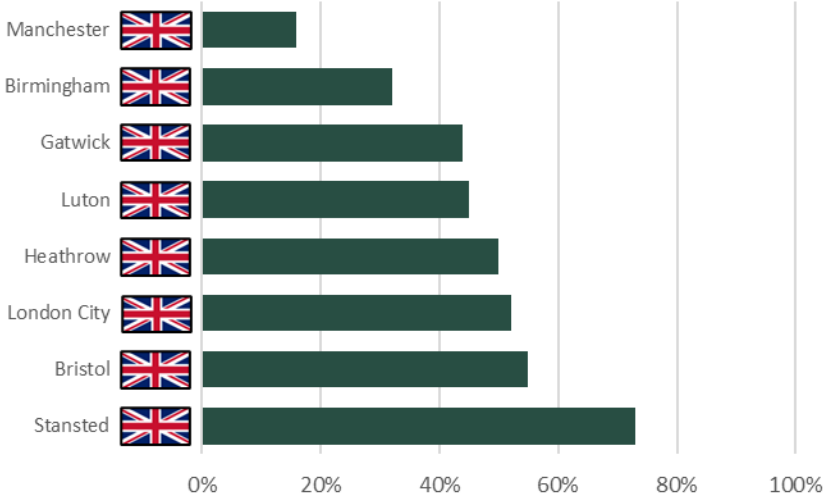
<sup>6</sup> IATA Airlines Magazine, 'Airport Slots - The Building Blocks of Air Travel!' (2010)

11. Historic Rights mean that the vast majority of slots at congested airports are re-allocated to the same carriers year after year. In addition, at many airports the majority of slots are held by a single airline. The graph below shows that a single airline, holding a large proportion of slots at an airport, is a common feature at most congested UK and international airports.

Largest share of flight movements by a single airline at selected international Level 3 airports in 2019



Largest share of flight movements by a single airline at UK Level 3 airports in 2019



Proportion of scheduled flight movements operated by the largest airline at selected international and UK airports: 2019

Source: OAG Schedules Analyser.<sup>7</sup>

<sup>7</sup> Data includes flights planned for operation as part of airlines' schedules. Not all of these will necessarily have operated, as late-notice cancellations do occur. Data copyright OAG Aviation Worldwide Ltd. 2022. All rights reserved.

12. There are benefits to an airline holding a large proportion of slots at an airport, especially at a hub airport. A large single carrier can deliver economies of scale and support hub operations, as it enables the airline to link feeder services to longer haul services, enhancing connectivity for businesses and passengers. By enabling airline traffic flows to be combined, a hub airport can create an efficient means of relating supply to demand whilst also minimising transfer times and maximising the number of connections.
13. However, the combination of airport capacity being congested and the majority of slots at an airport being held by one or two airlines can inhibit competition and lead to the slot allocation system becoming undynamic. The scarcity of slots can make them valuable assets worth millions of pounds. If an airline loses a slot at a capacity constrained airport it can be very difficult, or take many years, for the airline to acquire a new one. It is often only when an airline becomes insolvent that significant numbers of slots become available at a capacity constrained airport. The impact of this is that there are fewer opportunities for new airlines to commence services at an airport or for existing airlines at the airport to grow, limiting choice and connectivity for businesses and passengers.

## Aviation 2050 and slots

14. In 2015 the independent Airports Commission concluded that due to strain on airport capacity in London, a new runway would be needed in the South East of England by 2030.<sup>8</sup> In this context, the Government previously consulted on potential changes to the way slots at airports are allocated as part of its aviation strategy paper **Aviation 2050: The future of UK aviation**. That paper set out that the existing slot allocation system might not promote fair and competitive growth or deliver the best consumer outcomes where significant new slot capacity is released at a severely congested airport.
15. This was an important issue as, following the designation of the Airports National Policy Statement in June 2018, it was anticipated that a significant number of additional slots would be created through the expansion of Heathrow Airport. It was considered that where there is significant new slot capacity being made available at a highly congested airport, such as Heathrow, some of the issues identified with the current system could be exacerbated.
16. The Department for Transport (DfT) received around 100 responses to Aviation 2050 about slots. Alongside the formal consultation, the Department also conducted an intense period of engagement with industry. This included:
  - individual and roundtable meetings with, among others, airlines, IATA, airports and the Airport Operators Association (AOA);

---

<sup>8</sup> Airports Commission, [Final Report](#) (2015)

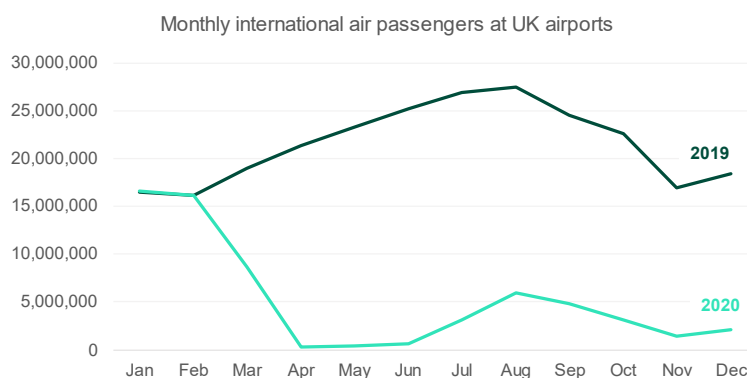
- regular meetings of a DfT chaired Slots Working Group (SWG) comprising representatives from the Department, the Civil Aviation Authority (CAA), the Competition and Markets Authority (CMA), ACL and NATS (formerly National Air Traffic Services);
  - conversations with international airports, slot coordinators and other experts; and
  - discussions with the EU's Directorate-General for Mobility and Transport (DG MOVE).<sup>9</sup>
17. At the same time, the Department commissioned two distinct, complementary pieces of external research to look at the case for changing the slot allocation system and consider the potential impacts of reforms:
- A behavioural experiment, conducted by Oxera, which involved a lab-based simulation comparing the status quo to allocation i) for a time-limited period (i.e., without Historic Rights); ii) without the 'new entrant' rule; and iii) by auction.
  - A policy design report by Cambridge Economic Policy Associates (CEPA), which assessed four 'packages' of reforms against the objectives of efficiency and domestic connectivity, as well as on their practical deliverability. The packages reflected varying degrees of divergence from the status quo and included two different auction designs.
18. The two research reports are being published alongside this consultation. The proposals in this consultation build on this research and on the work carried out for Aviation 2050.

---

<sup>9</sup> This is the department responsible for the EU Commission's policy on transport.

## COVID-19 and slots

19. When the COVID-19 pandemic struck the UK in March 2020, work on slot reform was paused as the focus shifted towards supporting the aviation industry through the crisis.



Monthly international passengers arriving at and departing from UK airports, January 2019 to December 2020 showing collapse of passenger demand due to the COVID-19 pandemic.

Source: DfT Analysis of Civil Aviation Authority Airport Data

20. As part of measures to support the aviation sector during the pandemic, the Government provided alleviation from some slot usage rules. Initially this provided a complete suspension of the 80:20 rule, and then, using temporary powers introduced in the Air Traffic Management and Unmanned Aircraft (ATMUA) Act 2021, more bespoke alleviation measures such as varying the usage ratio and adjusting the list of reasons which airlines can use to justify non-utilisation of slots. The decision to provide alleviation was considered necessary because of reduction in demand caused by COVID-19. This alleviation was intended to protect the financial health of airlines and the resilience of the sector. It also sought to discourage inefficient slot use by mitigating the risk that empty or near-empty flights (so called 'Ghost Flights') would be operated by airlines solely to retain Historic Rights to their slots. We estimate that in the first two years of the pandemic this policy may have helped prevent around 300,000 potential Ghost Flights from being flown at Heathrow Airport alone<sup>10</sup> – assuming airlines would have operated Ghost Flights to retain all of their slots. These alleviation measures contributed to protecting future connectivity as airlines were able to resume services using their slots once demand returned on routes.

<sup>10</sup> This estimate is based on data for Heathrow only. 300,000 figure is based on DfT calculations using ACL Initial Allocation reports as well as analysis of ACL data.

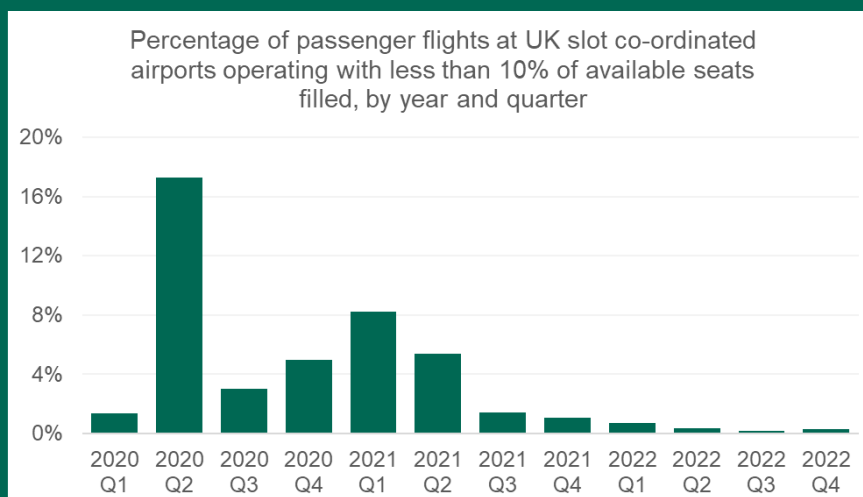
## “Ghost Flights” and alleviation

During the pandemic there was media attention regarding the concept of ‘Ghost Flights’ taking place. This is when an aircraft flies empty or nearly empty for a specific purpose, such as to maintain airport slot rights. The Government took action to prevent this environmentally damaging behaviour through a series of slot alleviation measures while demand was reduced due to the COVID-19 pandemic. Slot usage requirement returned to 80:20 usage ratio (as pre-pandemic) from 26 March 2023, the table below shows the alleviation that was provided from the 80:20 usage rule 29 March 2020 to 25 March 2023.

Season	Dates	Alleviation
Summer 2020	29 Mar 2020 - 24 Oct 2020	Full alleviation
Winter 2020	25 Oct 2020 - 27 Mar 2021	Full alleviation
Summer 2021	28 Mar 2021 - 30 Oct 2021	Full alleviation
Winter 2021	31 Oct 2021 - 26 Mar 2022	50:50 usage ratio
Summer 2022	27 Mar 2022 - 29 Oct 2022	70:30 usage ratio
Winter 2022	30 Oct 2022 - 25 Mar 2023	70:30 usage ratio

There are some legitimate reasons why an aircraft may fly without passengers, or with a very low number of passengers. This could include training, for positioning, carrying cargo only or where, as occurred several times during the pandemic, a large number of people need to be repatriated so an aircraft flies empty on one leg of its journey in order to bring people home. The Government has reviewed data published by the CAA on the number of flights flying from slot coordinated airports during the pandemic to monitor the effectiveness of these measures. The data does not give the reason why flights took place, but the highest number of near-empty flights occurred when new travel restrictions were introduced. The peak in 2020 matches the start of the pandemic when global travel largely halted, large numbers of people needed to be repatriated and many aircraft were stood down. The data suggests that Government measures helped to mitigate against Ghost Flights. The graph below shows how many flights operated with a passenger load of less than 10%.





Source: DfT Analysis of Civil Aviation Authority Airport Load Factor data

21. Alleviation of slot usage rules was one element of Government support provided to the aviation sector during the COVID-19 pandemic. We estimate that the air transport sector (airlines, airport and related services) benefitted from around £8 billion of pandemic-related Government support. This includes support through loan guarantees, support for exporters, the Bank of England's Covid Corporate Financing Facility, the Coronavirus Job Retention Scheme, and the Airport and Ground Operations Support Scheme (AGOSS). Even with the support packages in place, COVID-19 has had an unprecedented impact on airlines and airports and those impacts are still being felt today.

## Why reform the slot allocation system now?

22. The existing UK slot allocation rules have not been reviewed in their entirety, or updated (aside from COVID-19 related adjustments) to reflect changes in the aviation industry or airport capacity, over the last few decades. Responses to the Aviation 2050 consultation indicated that the current slot allocation system may not always achieve the most efficient use of existing airport slot capacity. For instance, the slot allocation system features rules to support new entrants receiving slots from the pool. However, as slot capacity at airports has become increasingly congested over the years, concerns have been raised that these rules are now insufficient and putting new entrants on an unequal footing with incumbents.
23. There are other features of the slot allocation system, which are intended to increase efficiency but may currently only have limited effectiveness in the UK. For example, secondary trading enables airlines to trade slots that they are not utilising, which should allow the market to deliver a more efficient outcome. However, there is a relatively low level of slots being exchanged compared to the total number of slots at UK airports; for instance only 2.4% of total slots available at Heathrow in the Summer

2019 season were traded and at Gatwick even fewer (0.8% of total slots traded).<sup>11</sup> Stakeholders have suggested that part of the reason for this may be that airlines prefer to hold on to even 'loss-making' slots rather than selling them, in order to hinder competitors from obtaining slots. There are no requirements for either availability or cost of slots to be advertised in secondary trading of slots, meaning that the secondary trading market lacks the basic features of a transparent modern marketplace.

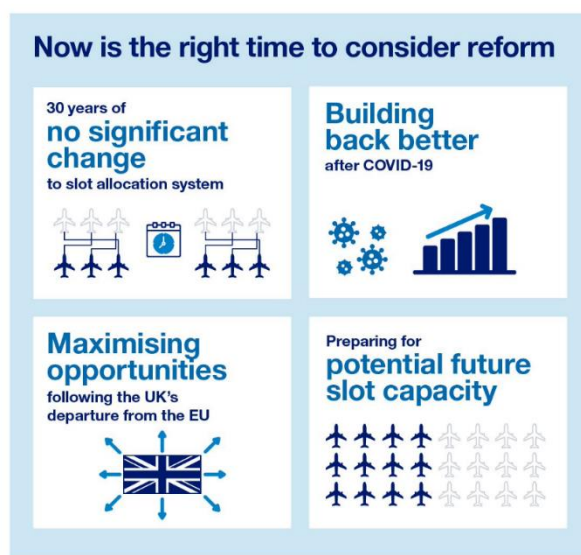
24. It is possible that Historic Rights are now hindering optimum use of airport slot capacity, especially at the busiest airports. Airlines are acutely aware of the difficulty in acquiring new slots at UK's busiest airports given the capacity constraints that have emerged. They may also be reluctant to risk losing slots at these airports even if they are not making optimum use of their slots.
25. The COVID-19 pandemic highlighted the shortcomings of the slot allocation system and revealed that the current system and legislation were not designed to deal with events of the scale and nature of the pandemic. The very fact that the Government had to create temporary powers through the ATMUA Act to be able to provide alleviation and respond to the impacts of the pandemic, demonstrates that there is a lack of resilience built into the current Regulation.
26. The effect of the pandemic has meant that many UK airports have revisited their growth plans, with some airport expansion schemes being paused. The aviation sector is still recovering from the effects of the pandemic, and Heathrow Airport Limited is now reflecting on its next steps.
27. It is not yet possible to determine the full impact of COVID-19 and how passenger trends will progress in future or when passenger demand will grow beyond pre-pandemic levels. There are also other important drivers of passenger demand which are inherently uncertain, including economic growth and oil prices. The latest modelling undertaken by the Department for Transport indicated that even in a High Ambition Scenario for achieving net zero, by 2050 there could be a 52% increase in UK terminal passengers relative to their level in 2018, although the modelling assumed no long-term impact of the COVID-19 pandemic on demand.<sup>12</sup>
28. However, there has been encouraging return in passenger demand, with flight traffic reaching 2019 levels for some routes. The return of passenger demand means that this is an appropriate time to consider how the slot allocation system could support the aviation sector to both recover and improve. It also means that now would be a good time to consider creating a framework for how to deal with allocation if new slots become available.

---

<sup>11</sup> Data provided by ACL. *It is also worth noting that although in Summer 2019 there were 2,400 slot trades in Gatwick these trade numbers are very volatile. For Summer 2018 there were 13,590 and in S12 and S13 there were none. Heathrow sees less volatility as although there are more trades, these are usually for fewer slots.*

<sup>12</sup> Department for Transport, [Jet Zero Strategy: one year on](#) (2023)

29. Furthermore, since the end of the transition period on 31 December 2020, the UK is no longer bound by EU law and will not be subject to any future changes in EU slot regulations. This has afforded the UK the ability to review and alter the current airport slot allocation system under the Regulation. For the first time in the nearly 30 years since the creation of this Regulation, we can change the rules that govern slot allocation in the UK, recognising that the world of aviation has changed significantly, and make sure that the rules meet the UK's needs.



30. The issues we have identified with the slot allocation system, and which we want to address through the proposed reforms, go beyond those considered in Aviation 2050. There are opportunities to make the slot allocation system operate more effectively, regardless of whether or not new slot capacity becomes available. It is important that we make the most out of the opportunity we have following the UK's exit from the EU to ensure that we have a slot allocation system that maximises the use of the UK's existing and future airport slot capacity whilst being efficient, transparent and dynamic.

## Slot reform aims and objectives

31. The Government's aim for slot reform is to ensure that the airport slot allocation system enables airport capacity to be used in a way that delivers positive outcomes for the UK as a whole. This includes making sure that our current and future airport slot capacity is used efficiently to support a wide route network of direct connections within and beyond the UK. We want the UK route network to be mostly market-based, driven by consumer needs and covering destinations which are desired by passengers and businesses. Delivering positive outcomes also means ensuring the slot allocation system takes into account how the UK aviation sector has developed over time.
32. To achieve this aim for slot reform we are being guided by two objectives:
- Objective 1:** Stimulating a competitive environment by creating a more efficient, transparent and dynamic slot market; and

**Objective 2:** Establishing a framework for allocation of new slots.

33. The Government views competition as an essential part of a modern market which leads to positive gains for the consumer. These gains include lower prices and a better match between supply and demand. Competition drives productivity and innovation, contributing to most efficient use of available resources. Ultimately all reform proposals set out in this consultation are seeking to achieve the most efficient use of a resource – airport slot capacity.
34. There are several aspects to efficiency. In the context of allocating airport slots, our primary focus is allocative efficiency. This involves allocating slots to the uses from which the highest value is derived, such that total welfare (for given capacity) is maximised. However, other aspects of efficiency are also being sought through reform proposals. These include productive efficiency (achieving a given output at minimum cost) and dynamic efficiency (encouraging productive efficiency improvements over time through competition and innovation).
35. The consultation's first two chapters set out the reform proposals that are principally aimed at the allocation of existing slot capacity. The third and fourth chapter of the consultation seeks views on proposals that would apply to new slot capacity only. Whilst there is this distinction between the application of the reforms, the reform proposals are not mutually exclusive and different combinations of reforms could be considered for implementation.

## Consultation scope

36. This consultation seeks views on proposals for reform that would apply to slot allocation at Level 3 slot coordinated airports. As such, the proposals laid out in the consultation will apply to slots held by both passenger and cargo-only flights at these airports.<sup>13</sup> The consultation document is accompanied by the slot reform consultation Impact Assessment (IA). The IA provides an assessment of potential impacts of each reform proposal and should thus ideally be read in conjunction with the consultation document. The IA also includes questions which are different from the questions set out in the consultation document as these seek views on the analysis and assessment of impacts of reform proposals rather than the reform proposals themselves.
37. Due to the exceptional effect of the COVID-19 pandemic, most of the data used in this consultation is from 2019. This is because whilst data is available from 2020 and beyond, this data may lead to an inaccurate understanding or skewed picture of issues with the slot allocation system given the prolonged effects of the pandemic on the aviation industry.
38. The Government is committed to decarbonisation of the aviation sector. The Government published its [Jet Zero Strategy](#) in July 2022, setting out the vision and

approach for the aviation sector to reach net zero by 2050. The slot allocation system supports the Government's net zero agenda by ensuring airport capacity is allocated taking into consideration existing caps and some of the environmental obligations that airports are subject to. Slot coordination also ensures stricter adherence to schedules which reduces congestion at airports that would otherwise result in aircraft having to hold in the air awaiting a landing slot or taxiing on the runway awaiting a take-off slot. The Government is progressing a number of policy measures through the Jet Zero strategy which will be key drivers in achieving net zero. Our current assessment is that whilst the slot allocation system can continue to support the decarbonisation of the aviation sector, reform of the slot allocation system is unlikely to be the single most effective mechanism for driving this change. We would welcome views on the relationship between the slot allocation system and achieving net zero.

39. It is the Government's view that effective airport slot allocation should be environmentally positive by supporting more efficient use of airport capacity. It should support airports in making best use of their capacity whilst complying with any conditions such as night flight or noise limits. The slot allocation process has helped the management of movement caps and night curfews that have been set for Level 3 UK airports by redistributing traffic and ensuring that such caps are not exceeded. The process for the allocation of slots is separate from any proposal to increase capacity at an individual airport. Environmental impacts form part of the assessment of airport expansion proposals considered through the planning approval process.

## Next steps

40. Many of the reform proposals set out in this consultation would require primary legislation in order to be implemented. This primary legislation might replace the existing retained EU legislation, bringing together elements currently dealt with in the Regulation and elements currently dealt with in the Slot Allocation Regulations 2006 in a new legislative framework, under a new Act of Parliament. However, some elements could be dealt with in subordinate legislation (regulations) or guidance where appropriate, which would also increase flexibility to adjust details as conditions change or to reflect developments in international best practice.
41. There will be opportunities for further input before reforms proposed in this consultation are taken forward. Whilst this document sets out reforms to the most fundamental elements of the slot allocation system, following this consultation and analysis of the responses and evidence provided, we will further refine the proposals. For the purposes of this consultation document, we have set out the principal building blocks of the proposals for stakeholders to consider. It is likely that further consequential and technical changes to the slots rules will be required as part of the process of developing future regulations.
42. We anticipate that any legislative reform in this area would extend to the whole of the UK, but this would be subject to consultation with the devolved administration in Northern Ireland where aerodromes are a transferred matter under the devolution settlement. However, it is worth noting that there are currently no Level 3 airports in Northern Ireland, so as long as that remains the position, the changes would have no practical effect there.
43. The Retained EU Law Revocation and Reform Act (“the REUL Act”) received Royal Assent on 29 June 2023. It makes significant changes to the body of domestic law currently known as retained EU law. The Act also confers broad delegated powers to restate, replicate, revoke and replace retained EU law. These powers will expire after 23 June 2026. Retained EU law includes the Regulation as well as the Airport Slot Allocation Regulations 2006.
44. We recognise potential reforms to the current slot allocation system cannot be considered in isolation. We intend to work closely with stakeholders to ensure the success of any potential reforms. We appreciate the level of engagement to date from industry and other stakeholders on slot reform, and where possible, will utilise existing insights and research to support policy development.
45. We are aware that several international partners are also looking at proposals to make changes to their slot allocation systems. We recognise the international nature of the slot allocation system and will continue to have an open dialogue with

international partners on any proposed reforms, to understand their approaches, and how possible changes to the UK's system would work with their systems.

46. This public consultation has been published on gov.uk and runs alongside further engagement with industry and consumer groups to ensure all views and needs are taken into consideration. We welcome responses from any interested parties. We would particularly be aided by any specific evidence you can provide to support your views and suggestions.
47. This consultation will close on 9 February 2024. Once the consultation has closed, the Government will consider the responses received, alongside any feedback provided during consultation events before reaching conclusions on the implementation of any of the reform proposals set out in this document.

## How to respond

The consultation period began on 4 December 2023 and will run until 9 February 2024. Please ensure that your response reaches us before the closing date. If you would like further copies of this consultation document, it can be found at

<https://www.gov.uk/dft#consultations>

or you can contact [SlotConsultation@dft.gov.uk](mailto:SlotConsultation@dft.gov.uk) if you need alternative formats (Braille, audio CD, etc.).

Please send consultation responses to:

Name: Slot Reform Consultation

Address:

Aviation Directorate, Airport policy division  
4th Floor  
Department for Transport  
Great Minster House  
33 Horseferry Road  
London SW1P 4DR

Email address: [SlotConsultation@dft.gov.uk](mailto:SlotConsultation@dft.gov.uk)

When responding, please state whether you are responding as an individual or representing the views of an organisation. If responding on behalf of a larger organisation, please make it clear who the organisation represents and, where applicable, how the views of members were assembled.

If you have any suggestions of others who may wish to be involved in this process, please contact us ([SlotConsultation@dft.gov.uk](mailto:SlotConsultation@dft.gov.uk)).



## Freedom of information

Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the Freedom of Information Act 2000 (FOIA) or the Environmental Information Regulations 2004.

If you want information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information, we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.

The Department will process your personal data in accordance with the Data Protection Act (DPA) and in the majority of circumstances this will mean that your personal data will not be disclosed to third parties.

### Data Protection

The Department for Transport (DfT) is carrying out this consultation to gather evidence on potential proposals to reform the Airport Slot Allocation System. This consultation and the processing of personal data that it entails is necessary for the exercise of our functions as a Government department. If your answers contain any information that allows you to be identified, DfT will, under data protection law, be the Controller for this information.

As part of this consultation, we are asking for your name and email address. This is in case we need to ask you follow-up questions about any of your responses. You do not have to give us this personal information. If you do provide it, we will use it only for the purpose of asking follow-up questions. Your information will be kept securely on a secure IT system within DfT, and all personally identifiable information will be destroyed within 12 months after the consultation has been completed.

To find out more about how DfT looks after personal data, your rights, and how to contact our data protection officer, please go to:

[www.gov.uk/government/organisations/department-for-transport/about/personal-information-charter](http://www.gov.uk/government/organisations/department-for-transport/about/personal-information-charter).

To receive this information by telephone or post, contact us on 0300 330 3000 or write to Data Protection Officer, Department for Transport, 3rd Floor, One Priory Square, Hastings, East Sussex, TN34 1EA.

# 1. A more efficient slot system

The UK's aviation sector is critical to our economy and communities with air transport providing vital domestic and international connectivity. Before the COVID-19 pandemic, the UK air transport and aerospace sectors contributed some £20 billion per annum to the economy and directly supported at least 230,000 jobs.<sup>14</sup> Heathrow Airport was one of the busiest two runway airports in the world with over 1,300 flights on average a day in 2019 and Gatwick Airport was one of the busiest single runway airports in the world with 775 flights a day in 2019.<sup>15</sup>

Whilst the current slot allocation system has contributed to the UK aviation sector's success, it may not always achieve the most efficient use of existing airport slot capacity and so may fail to deliver the best outcomes for passengers and businesses. Given that the aviation sector has evolved since the current slot allocation system was first put in place nearly 30 years ago, there are features built into the system that may no longer be having their intended effect. For instance, the feature to support new entrants may not necessarily be achieving its objective. Furthermore, the COVID-19 pandemic highlighted that the current slot allocation system and slot legislation lacks flexibility to respond to a fast-changing operating environment.

We want to make sure that the slot allocation system and its processes continue to meet the needs of passengers as well as the aviation sector and support the efficient management of our increasingly congested airport slot capacity.

This chapter sets out potential reforms that could help maintain and improve efficiency of the slot allocation system.

## Potential Reform Proposals

- |   |  |                                |
|---|--|--------------------------------|
| 1. Re-defined new entrant rule            | 2. Restrictions on newly allocated slots | 3. Removal of re-time priority |
| 4. Permanent powers to improve resilience | 5. Increase to slot usage ratio          |                                |

---

<sup>14</sup> DfT analysis of ONS Business Register and Employment Survey data and low-level GDP aggregates

<sup>15</sup> DfT analysis of Civil Aviation Authority Airport data

# 1. Removing barriers to entry including a re-defined new entrant rule

## How it works now

- 1.1 The Regulation requires that 50% of available slots in the slot pool shall first be allocated to new entrants unless requests by new entrants are less than 50%. The rule is designed to help airlines gain access to slot congested airports and applies to both passenger and cargo-only airlines.
- 1.2 The Regulation defines a new entrant as an airline that, if allocated its requested slots:
  - would hold fewer than five slots at that airport on that day; or
  - for an intra-UK route or UK-European Economic Area (EEA)<sup>16</sup> route with less than three competitors, would hold fewer than five slots for that route on that day; or
  - for a non-stop scheduled passenger service between an airport and a regional airport where no other airline operates the route, would hold fewer than five slots on that day at that airport for that service.
- 1.3 The Regulation also stipulates that an airline holding more than 5% of the total slots available on the day in question at a particular airport, or more than 4% of the total slots available on the day in question in an airport system of which that airport forms part, shall not be considered a new entrant at that airport.<sup>17</sup> The Regulation states that an airport system is 'two or more airports grouped together and serving the same city or conurbation'. Importantly, the five slot coordinated (Level 3) airports serving London (London City, Heathrow, Gatwick, Luton, Stansted) have historically been considered being part of one airport system given that they geographically feed into the London metropolitan area. This means that an airline is not able to secure slots under the new entrant rule, even if it would otherwise qualify to do so for one of the airports within an airport system, if the combined total number of slots held by the airline across the airports within the airport system is above the threshold for qualifying as a new entrant.
- 1.4 The definition of an airport system in the current Regulation also implies that there is no competition between the airports in the system and suggests that receiving a slot at any airport within the system is therefore equivalent. This in effect assumes that it should make no difference to a new entrant, for example, if it had a slot at Heathrow Airport or Stansted Airport, despite the geographical, connectivity and commercial differences between the two.
- 1.5 The intention of the new entrant rule is to ensure that airlines with little or no presence at a capacity constrained airport can enter the airport in a way that

---

<sup>16</sup> The language of the Regulation reflects the fact it was written before the UK's departure from the EU.

<sup>17</sup> [Council Regulation \(EEC\) No 95/93](#)

encourages greater competition. Although this mechanism creates an environment for slots allocated from the slot pool to tend to go to new entrants, this presently represents only a tiny fraction of the total number of slots that are available. For example, in 2022, 12 slots at Heathrow Airport were allocated to new entrants from the pool out of a total of 152,613 summer slots available at the airport.<sup>18</sup> Because of the small number of slots that remain in the pool once slots have been allocated based on Historic Rights at capacity constrained airports, it is not always practical or conducive for new entrant airlines to pursue these slots.

Pool slots allocated at London Heathrow (LHR) by summer season 2016-2022							
Split by number of slots	S16	S17	S18	S19	S20	S21	S22
New Entrant Airline	14	16	36	12	8	4	12
Incumbent Airline	32	0	0	14	8	0	4
<b>Split based on %</b>							
New Entrant Airline	30%	100%	100%	46%	50%	100%	75%
Incumbent Airline	70%	0%	0%	54%	50%	0%	25%

Pool slots allocated at London Gatwick (LGW) by summer season 2016-2022							
Split by number of slots	S16	S17	S18	S19	S20	S21	S22
New Entrant Airline	128	63	100	42	98	36	36
Incumbent Airline	353	193	131	180	259	100	120
<b>Split based on %</b>							
New Entrant Airline	27%	25%	43%	19%	27%	26%	23%
Incumbent Airline	73%	75%	57%	81%	73%	74%	77%

Source: ACL September 2022

- 1.6 Advice from the CMA as well as feedback in responses to Aviation 2050 to the Department for Transport (DfT) have highlighted that the new entrant rule may no longer be effectively fulfilling its purpose.<sup>19</sup> This is because an airline that is large enough to compete effectively with incumbent airlines if it had more slots, fails to qualify as a new entrant if it has more than 5% of the total slots at an airport on a particular day. This means it will miss out on allocation of slots from the slot pool that might enable it to expand its operations, leaving only smaller and potentially less competitive airlines the opportunity to acquire slots at heavily congested airports.
- 1.7 In its 2019 report, CEPA stated that whilst the new entrant rule can help airlines successfully gain entry into capacity constrained airports, those who qualify as new entrants may struggle to compete with established airlines. CEPA highlighted that the current limit on the number of slots an airline can hold to qualify as a new entrant could restrict carriers from being able to obtain enough slots for the number of daily

<sup>18</sup> Data provided by ACL.

<sup>19</sup> CMA, '[Advice for the Department for Transport on competition impacts of airport slot allocation](#)' (2018)

rotations necessary to make a route profitable, or spread fixed costs across many flights, which can mean that new entrants operate from a higher cost base. The report found that there is no evidence to suggest that airlines which qualify as new entrants under the current definition would be able to compete more effectively with incumbents than other challenger airlines not qualifying for new entrant status.<sup>20</sup>

- 1.8 ACL data on slot allocation shows that whilst the UK's busiest airports, Heathrow Airport and Gatwick Airport, have a number of new entrant airlines, these have a low frequency of operations. One of the reasons for this low frequency could be the current slot limits which apply for airlines to qualify as a new entrant. The slot limits mean that an airline may be able to get initial access to an airport but then be unable to grow its operations at the airport as they no longer qualify for slots (when slots are available in the slot pool) under the new entrant rule.

	Heathrow	S22 Slots	% of total	Gatwick	S22 Slots	% of total
1	British Airways	152,613	49.9%	easyJet	98,407	53.2%
2	Virgin Atlantic	13,020	4.3%	British Airways	18,971	10.3%
3	American Airlines	9,982	3.3%	Vueling	10,862	5.9%
4	Aer Lingus	9,796	3.2%	Wizz Air	10,858	5.9%
5	Lufthansa	8,878	2.9%	TUI Airways	10,332	5.6%

The above chart shows the division of top five slot holdings by airlines at Heathrow and Gatwick for Summer 2022.<sup>21</sup> 'Slots held' is the total number of individual slots for a week. The figures come from a randomly selected week in the Summer 2022 season. Two slots are required at an airport per return flight.

Source: ACL Summer 2022 Start-of-Season reports, for Heathrow and Gatwick

- 1.9 In its 2018 advice to DfT, the CMA suggested that consumers may be better served by a smaller number of slightly larger operators than a large number of airlines with small operations who are not able to build up sufficient scale to compete with incumbents. According to the CMA, there is a risk that sub-scale entry, whereby new entrants are unable to build operations to sufficient scale to operate routes profitably, could allow incumbent airlines to buy up slots allocated to new entrant airlines through the secondary trading market, thereby reinforcing their position at the airport. The CMA argued that the most important way of supporting strong competition is to allow smaller airlines to grow more rapidly to benefit from economies of scale, which would allow them to compete more effectively with incumbent airlines.<sup>22</sup>

## What could change?

- 1.10 The Government believes that efficient operators that are successfully providing services that passengers want should be able to continue to grow their operations.

<sup>20</sup> CEPA, ['Slot Allocation at Heathrow in the context of runway expansion' \(2019\)](#)

<sup>21</sup> For practicality, this table considers airlines as 'brands', for example, Wizz Air UK Ltd. and Wizz Air Hungary Ltd. are viewed as a single airline 'Wizz Air'.

<sup>22</sup> CMA, [Advice for the Department for Transport on competition impacts of airport slot allocation \(2018\)](#)

The current limits on slot holdings that apply to airlines for them to qualify as a new entrant could be constraining this growth. To ensure that the UK aviation market remains competitive, it is important that barriers to both entry into the market and growth in the market are minimised.

- 1.11 We are proposing to introduce a power to enable the Secretary of State for Transport to make changes through regulations to the definition of a new entrant. This would enable the Secretary of State to update the new entrant rule to reflect the latest WASG guidance. The power could also be used to set a different limit or additional criteria for the definition of a new entrant if Secretary of State judged this was appropriate for the UK or an individual airport.
- 1.12 A change to update the number of slots an airline can hold to qualify as a new entrant is being considered separately using powers in the REUL Act. If this change is made it would be a one-off change, so would be different from the more flexible new power we are proposing above.
- 1.13 The Government believes that the definition of an airport system in the Regulation does not reflect the current aviation market in the UK and is therefore redundant. We are therefore proposing to remove the definition of an airport system and all references to it in the Regulation.

## Consultation questions

1. Do you agree that Secretary of State should have the power to make changes to the definition of a new entrant when appropriate for the UK or an individual airport, or to reflect the latest WASG guidance? Do you have any comments on the circumstances in which this power should be available or the grounds on which it should be exercisable?
2. What, if any, additional criteria, beyond the limits on the number and proportion of slots held, do you think should be included in the definition of a new entrant?
3. Do you support or oppose the removal of the definition of an airport system and all references to it from the regulation?

## 2. Restrictions on newly allocated slots

### How it works now

- 1.14 The current slot allocation system allows airlines flexibility to use slots for routes as they see fit to meet passenger demand and business needs. Whilst the intended route must be specified by an airline as part of its slot request, there are currently no restrictions on slots allocated to incumbents which tie them to the route specified when the slot was initially requested. The situation is slightly different for new entrants. The Regulation states that where slots are allocated to a new entrant, the airline, whether it be a passenger or cargo-only operator, is required to operate the

intended route for two equivalent seasons unless the new entrant would have been treated with the same priority on the new route as the initial route.

- 1.15 The intended route for a slot is part of the considerations for allocation decisions. By enforcing the 'two equivalent seasons' rule it safeguards against airlines quoting routes in their slot requests for which they do not intend to use for the requested slot. However, the rule currently also puts new entrants at a competitive disadvantage to incumbent airlines, to which the rule does not apply. In particular, it is possible under the relevant rules for incumbents to state one route in their request for a new slot and change to another route once the slot has been allocated to them, due to their status as an incumbent airline.
- 1.16 The Regulation also includes restrictions on exchanges or transfers of slots that are allocated to new entrants. For a period of two equivalent seasons, slots allocated to new entrants can only be transferred if the airline goes bankrupt or is acquired by another airline. New entrants are also not allowed to exchange (or trade) their slots for two equivalent seasons other than for the purpose of re-timing slots to refine flight schedules. As these restrictions only apply to new entrants, it puts them on an unequal footing with incumbent airlines. The restrictions mean that where new slots are allocated to new entrants and incumbents, incumbent airlines have greater freedoms in how they operate and make use of the slots.
- 1.17 Concerns highlighted in Aviation 2050 included that an airline may request, and hold, slots regardless of efficiency or profitability to prevent the slots being allocated to competitors, therefore excluding them from entering the market. Airlines could also acquire slots, which are initially allocated for free, only to then sell them on the secondary market at high prices.<sup>23</sup> Responses to Aviation 2050 and feedback during the Aviation 2050 consultation process indicated that industry shared these concerns.
- 1.18 As part of the work to consider how to address concerns raised by the Aviation 2050 consultation, the Government asked CEPA to consider proposals to address this. In its 2019 report, CEPA suggested that the restrictions on re-routing that currently apply to slots allocated to new entrants should be extended to apply to all slots allocated by the coordinator. CEPA also recommended that the timeframe for the transfer and exchange restrictions on slots allocated to new entrants should apply to all slots from the slot pool and that the period for these restrictions should be increased from two to four equivalent seasons (this will in effect increase the timeframe from two to four years). CEPA believed that these changes could limit the incentive for airlines to make speculative slot requests by imposing a greater cost on airlines for doing so. Airlines would have to fly the routes for longer, creating pressure to use slots profitably or return them to the pool to be reallocated.<sup>24</sup>

---

<sup>23</sup> Department for Transport, '[Aviation 2050: The future of UK aviation](#)' (2018)

<sup>24</sup> CEPA, '[Slot Allocation at Heathrow in the context of runway expansion](#)' (2019)

## What could change?

- 1.19 The Government believes that newly allocated slots should be treated the same regardless of whether they are allocated to new entrants or to incumbents. It is essential that airlines are able to change routes to match demand. However, given that intended routes are a factor considered as part of the slot allocation process when the slot request is submitted to the coordinator, it is reasonable to expect that the route specified for that slot is used at least for a period of time.
- 1.20 We are proposing that the **restriction on re-routing, exchanging and transferring of slots** which currently applies to slots allocated to new entrants should be extended to apply to new slots allocated to incumbents too. In addition we are proposing to increase the duration for these restrictions. At present, we envisage the restrictions to be extended from two to four equivalent seasons, e.g. four summer seasons.

## Consultation questions

4. Do you agree or disagree that restrictions on **re-routing, exchanging and transferring of slots** should apply to new slots allocated to incumbents?
5. Do you agree or disagree that the duration of these restrictions should be extended from 2 to 4 equivalent seasons? What, in your view, if any, would be a more appropriate duration for the restrictions and why?

## 3. Removal of re-time priority

### How it works now

- 1.21 Slots at UK airports are allocated in five-minute intervals. At present, the Regulation allows for re-timing of slots to be considered and accommodated before allocation of remaining slots from the pool. This is to provide airlines some flexibility to re-time their slots to optimise schedules.<sup>25</sup> Where a re-time request cannot be accommodated, the airline retains the slot with the original timing for it.<sup>26</sup>
- 1.22 In the current allocation system, the coordinator prioritises re-time requests from incumbents over requests for new slots. This means that incumbents have a competitive advantage over new entrants because where a new entrant requests the same slot as a re-time request from an incumbent, the slot will be allocated to accommodate the re-time request.
- 1.23 The priority given to re-timing of slots could also be a barrier to incumbents, preventing them from developing new routes or increasing services on existing routes. This is because where there are competing requests by incumbents, with one

---

<sup>25</sup> [Council Regulation \(EEC\) No 95/93](#)

<sup>26</sup> [Worldwide Slot Guidelines](#) (2022)



requesting a slot as a re-time for an existing slot and the other requesting the slot as a new slot, the re-time request will be accommodated.

- 1.24 In response to the Aviation 2050 consultation, DfT received feedback that there would be benefits to removing the re-time priority rule so that applications for new slot requests, including those from new entrants, can be considered at the same time as, and given equal priority to, re-timing requests. In April 2020, the WASG was updated and re-time priority was removed as a slot allocation principle.<sup>27</sup> The current Regulation does not reflect this change.

### What could change?

- 1.25 The effect of removing the re-time priority would be that re-time requests and requests for new slots would be put on an equal footing and considered by the coordinator according to the secondary criteria set out in the WASG. The Government believes that this could potentially maximise the opportunity for development of new routes and improve choice for businesses and consumers.
- 1.26 We are proposing to update the Regulation so that **re-time priority** is **removed** and applications for re-times are considered at the same time as, and given equal priority to, new slot requests, including those from new entrants. This will bring Regulation in line with the worldwide best practice as stated in the WASG.

### Consultation questions

6. Do you agree or disagree that re-time priority for slots should be removed in accordance with WASG??
7. What do you consider are the main positive and negative operational implications of removing the re-time priority for slots?

## 4. Permanent powers to improve resilience

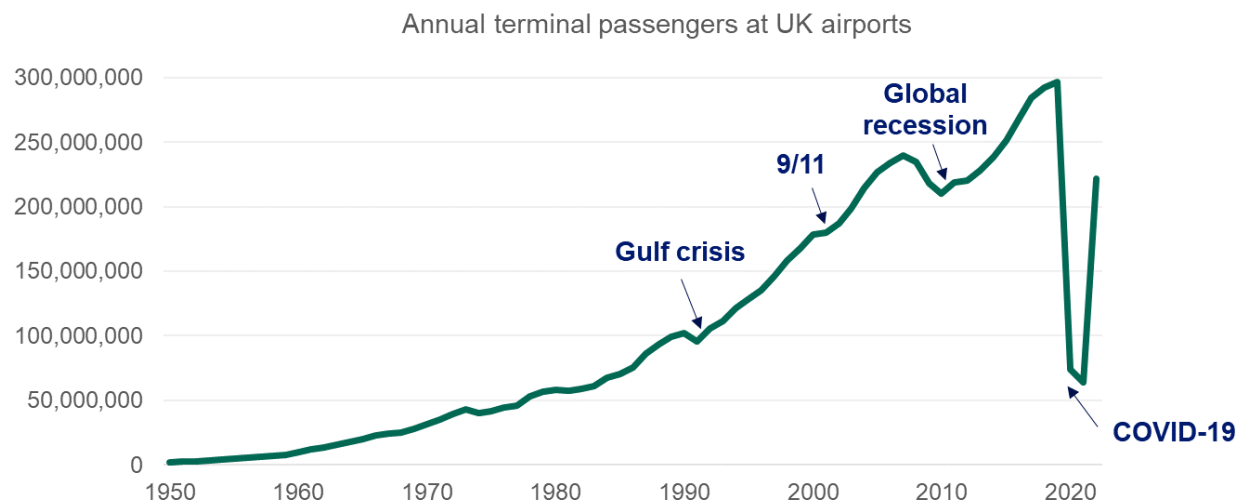
### How it works now

- 1.27 Article 10 of the Regulation provides for the justified non-utilisation of slots (JNU). JNU enables an airline to apply for exemption from the 80:20 rule if circumstances outside its control preventing it from flying the required 80% of the time to retain its slots. The JNU provision covers circumstances such as the grounding of aircraft or the closure of airspace, closure of airports and serious disturbance of an airport's operation.<sup>28</sup> Where there have been large events affecting the aviation sector as a

---

<sup>27</sup> IATA, ['Amendments to WSG Edition 10'](#) (2022)

whole, such as the financial downturn in 2008, governments have sometimes chosen to suspend the 80:20 rule for all airlines.

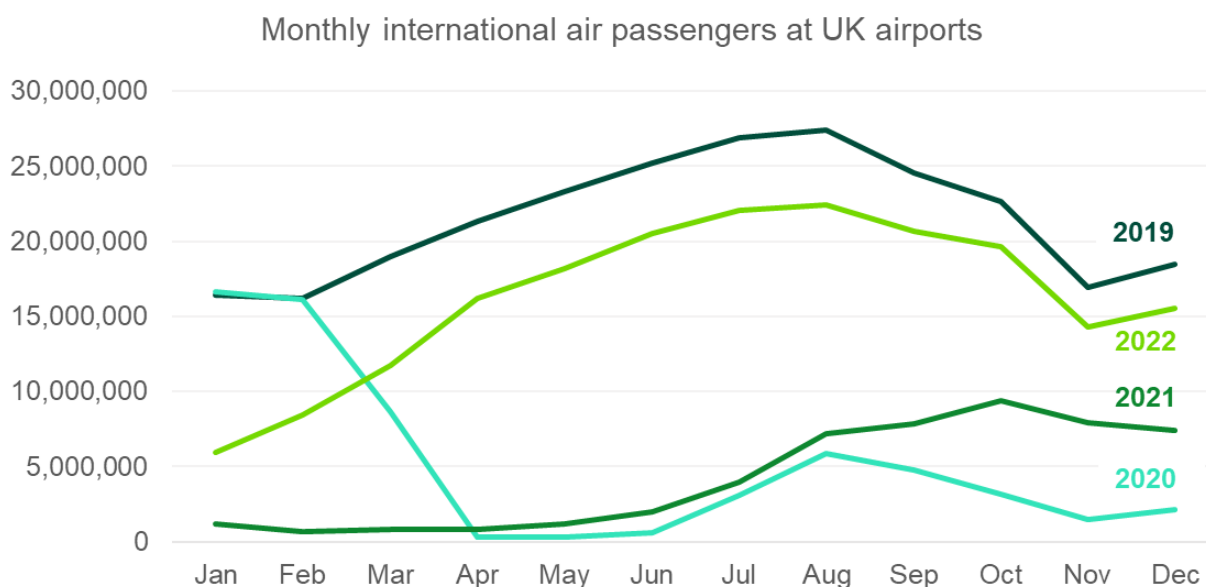


Annual terminal passengers at UK airports, 1950 to 2021

Source: DfT Analysis of Civil Aviation Authority Airport Data

1.28 When the COVID-19 pandemic struck in March 2020, countries all over the world went into lockdown. This caused a huge amount of disruption to international travel. The initial lockdowns caused an unprecedented reduction in air traffic with passenger numbers dropping as low as 1% of 2019 levels.<sup>29</sup> After vaccinations had started to be rolled out, restrictions on travel, such as requirements to quarantine and proof of a negative COVID-19 test, remained in place after official lockdowns had ended. Bans on arrivals from certain countries were introduced at short notice to mitigate the impacts of new outbreaks and variants. This uncertainty meant that aviation demand remained suppressed for 2020, throughout 2021, and had still not recovered to 2019 levels in 2022.

<sup>29</sup> DfT analysis of Civil Aviation Authority Airport data.



Monthly international passengers arriving at and departing from UK airports, January 2019 to December 2022 showing collapse of passenger demand due to the COVID-19 pandemic.

Source: DfT Analysis of Civil Aviation Authority Airport Data

- 1.29 The slot rules in place at the start of the COVID-19 pandemic gave coordinators across the world limited tools to try and mitigate the impact of the pandemic on airlines. Because of the 80:20 rule, airlines risked facing a choice of either flying empty flights (also known as ‘Ghost Flights’) to meet the required 80% usage ratio or not flying and risk losing slots permanently. In response to this, most governments implemented alleviation of slots rules. This required new regulations to enable coordinators to provide alleviation. For Summer 2020 and Winter 2020 the UK was subject to the Regulation as EU law and the UK supported the European Commission in providing full alleviation from the 80:20 rule. For Summer 2021, after the end of the EU exit transition period, the UK Government again provided full alleviation.
- 1.30 Although full alleviation provided considerable flexibility for airlines, the Government recognised that this was a relatively crude instrument and, as the pandemic developed, more flexible and sophisticated tools might be needed. Therefore, the Government introduced an amendment to the ATMUA Act to provide temporary powers for alleviation of the 80:20 rule until August 2024 (covering the Winter 2024/25 season) where Ministers were satisfied that, due to COVID-19, there was a reduction in the level of air traffic compared to a corresponding period in the previous year, and that the reduction would likely persist.
- 1.31 The provisions in the ATMUA Act meant the slot usage requirements could be adjusted based on data and evidence relevant to the appropriate season. As the ATMUA Act allows the Government to amend the alleviation rules on a seasonal basis, the Government was able to reflect changing circumstances when moving from one season to the next.

1.32 The Government used the powers granted by the ATMUA Act to:

- **Amend the 80:20 usage ratio.** By reducing the usage ratio, the requirements to fly were tailored to the level of demand. For example, in the Winter 2021 Season the usage ratio was set at 50%.
- **Allow full series handback.** Airlines were able to retain rights to a series of slots if the complete series was returned to the slot coordinator for reallocation on or before a set deadline. The provisions allowing for full series handback were also tailored to cover particular circumstances, for example excluding newly allocated slots or those held by airlines that have announced that they are permanently ceasing operations at an airport from the slots that would be eligible for alleviation if returned to the pool.
- **Expand justification for non-utilisation of slots.** The Government amended the JNU provision to include certain Government-imposed measures related to COVID-19 which severely reduced the viability of or demand for passenger travel on the route in question.

#### **Justified non-utilisation of slots (JNU)**

The Airports Slot Allocation (Alleviation of Usage Requirements) (No. 2) Regulations 2021 Statutory Instrument and subsequent Statutory Instruments temporarily added the following examples to the JNU provisions in the legislation to help airlines during the pandemic where government-imposed restrictions affect the route or a significant number of passengers or crew on the route, and severely reduce viability of or demand for the route<sup>30</sup>:

- flight bans or border closures;
- quarantine or self-isolation requirements (from Winter 2022 onwards, requirements for a negative COVID-19 test were also added);
- official Government advice against all but essential travel;
- severe or total closure or unavailability of airports, essential ground handling services or other businesses essential to support aviation;
- severe restrictions on the number of passengers permitted on flights or in airports;
- severe or total closure of accommodation, surface travel or other essential tourist services; and
- significant restrictions on onward travel which is booked along with the flight as part of a package.

<sup>30</sup> [The Airports Slot Allocation \(Alleviation of Usage Requirements\) \(No. 2\) Regulations 2021](#)

- 1.33 The powers in the ATMUA Act are temporary and will expire on 24 August 2024. In addition, the provisions can only be used where there has been a reduction in the level of air traffic, which is likely to persist, as a result of the COVID-19 pandemic.
- 1.34 These limitations have meant that the Government has had no power to put in place specific alleviation to cover other recent events such as the closure of Russian airspace following the 2022 Russian invasion of Ukraine. Direct impacts from the invasion, affecting flights to and from Ukraine or Russia would be covered by the existing JNU provisions in the Regulation. However, a number of airlines highlighted that they faced a significant impact because of the disruption caused to their ability to operate flights to destinations where they would previously have flown over Russian airspace. For example, the duration of a London to Tokyo flight has increased by 4 hours and 30 minutes, taking 16 hours and 25 minutes compared to previous flight time of 11 hour 55 minutes. This level of change has increased airlines' costs associated with operating the service and could also have a dampening effect on passenger demand on the route. Even if the Government or the coordinator considered that temporary alleviation was justified in such a circumstance, the powers in the ATMUA Act and the existing Regulation do not enable alleviation to be granted.

### What could change?

- 1.35 The Government believes that the powers in the ATMUA Act have provided much needed flexibility for the industry at a critical time. These powers made it possible for the Government to intervene in a way which would not have been possible under the existing Regulation. The Government's view is that the JNU provisions should provide a safety net for airlines where events take place which are beyond their control. JNU should not be seen or used as a tool to manage commercial choices about whether or not to operate a flight, or to cover every conceivable circumstance which might prevent an airline from flying. The usage ratio gives a certain amount of flexibility to airlines to manage normal day-to-day disruption so any changes to JNU would be considered with that in mind.
- 1.36 Therefore, any slot reform **legislation** will update the JNU provisions to reflect the lessons from recent years and set out clearly the circumstances where JNU may apply. It will also **include permanent powers**, similar to those in the ATMUA Act, to enable the Secretary of State to make regulations to provide specific alleviation from parts of the slot rules in response to an incident.
- 1.37 These powers could include the ability to make provision:
- requiring the coordinator to consider unused slots as having been operated (subject to conditions);
  - changing the usage ratio and adding conditions;
  - amending JNU provisions;
  - enforcing any changes; and/or,
  - amending for a specified period any provision relating to coordination parameters.

- 1.38 As with the ATMUA Act, we propose that, should an event occur which requires the use of these powers, the specific provisions should be enabled via a Statutory Instrument following appropriate consultation with industry. It would be our intention to use these powers sparingly, for exceptional circumstances outside the control of airlines. We envisage that the Government would, where possible, seek to consult industry before exercising the powers. We expect that these powers would only be considered for use where an event is causing significant disruption across the industry took place.
- 1.39 In addition to the proposed powers above, clarification and **expansion of JNU provisions** on a permanent basis **is being** considered separately using powers in the REUL Act. As with the potential changes to the new entrant rule set out above, this would be a one-off change, so would be different from the more flexible new power we are proposing here.

## Consultation questions

8. Do you agree or disagree that the Secretary of State should have permanent powers to make regulations about slot alleviation in response to a crisis? In what circumstances should these powers be available, and in what circumstances should they be exercisable?
9. Are there additional powers to those suggested in paragraph 1.37 that you think should be available to the Secretary of State in making bespoke regulations in exceptional circumstances?

## 5. Increase to slot usage ratio

### How it works now

- 1.40 The current Regulation requires that an airline must use at least 80% of their series of slots for the scheduling season they have been allocated; this is known as the 80:20 rule.<sup>31</sup> If the airline fails to meet the minimum 80% usage of the series of slots, all the slots in that slot series are returned to the slot pool and become available for reallocation to other airlines.
- 1.41 Whilst there are exceptions to the 80:20 rule, set out in the JNU rules, typically the 80:20 rule is stringently followed by the slot coordinator in the UK. According to IATA, the current 80% usage ratio effectively promotes utilisation of scarce airport capacity. The usage ratio provides airlines with certainty and sets a clear expectation on performance for airlines. This makes it easy for the slot coordinator to identify poor performing services (those who cannot meet the 80% usage threshold) and recoup the slots.<sup>32</sup> The 80:20 rule therefore prevents airlines from simply holding on to their

---

<sup>31</sup> [Council Regulation \(EEC\) No 95/93](#)

<sup>32</sup> IATA, '[Worldwide Airport Slots Fact Sheet](#)' (2023)

existing slots without using them, which helps reduce inefficiencies in the slot system.<sup>33</sup>

- 1.42 By having a 20% non-utilisation margin, allowed for by the 80:20 rule, airlines are provided with flexibility to plan their operations and make changes to their schedules based on demand even after the slots have been allocated. This flexibility allows decisions to be made on commercial viability of individual flights and routes. It may enable airlines to avoid operating flights on ‘cold days’, when passenger demand is low, which creates economic efficiency for airlines.<sup>34</sup>
- 1.43 The usage ratio has remained unchanged ever since the Regulation was first introduced nearly 30 years ago. Whilst there is a general assumption that the 20% non-utilisation is enabling airlines to make commercial decisions, it is not clear what this flexibility enables airlines to do specifically that a different usage ratio would hinder. Some airports have stated that the 20% acceptable non-utilisation could act as a disincentive for airlines to use their slots to a higher degree than the required 80% usage. This could be seen as an inbuilt inefficiency in slot allocation. By maintaining this usage ratio, slots may be prevented from being re-allocated to airlines, including new entrants, who could make better use of them. This effectively limits competition at a cost to the consumer.<sup>35</sup>

## What could change?

- 1.44 Given the current capacity constraints at many Level 3 airports, and the likelihood of these worsening without new capacity, the Government believes that it is essential that the utilisation of existing capacity is fully maximised. One measure by which to ensure that existing capacity is more fully utilised would be to implement a higher usage ratio. The Government does not have a view on what level a higher usage ratio should be set at, but the consultation Impact Assessment provides an assessment of the possible impact of a 90:10 usage ratio.
- 1.45 This option should be considered alongside potential changes to the JNU provisions (see Permanent powers to improve resilience section), which set out the circumstances in which an airline may be justified in not using a slot. The objective is to encourage more efficient and intensive usage of slots and not to penalise airlines who cannot operate a slot for reasons outside their control.
- 1.46 We also believe that whilst maximum utilisation is crucial it may not necessarily be beneficial for all Level 3 slot coordinated airports to adopt an increase in the usage ratio. Instead, we would welcome views on whether it would be more effective if airports are given the ability to choose if and when to apply any higher usage ratio.

---

<sup>33</sup> CMA, [‘Advice for the Department for Transport on competition impacts of airport slot allocation’](#) (2018)

<sup>34</sup> Ranieri, A., Alsina, N., Castelli, L., Bolic T. and Herranz, R., SESAR WPE, ‘Airport slot allocation: Performance of the current system and options for reform: Towards a comprehensive performance framework’, (2013)

<sup>35</sup> John, P., Gulf Times, [‘Spotlight again on ‘80:20’ airport slot system as airlines stage recovery’](#), (2022)

This tailored approach would therefore allow airports to take the decision depending on the circumstances the airport finds itself in.

1.47 As noted in the Impact Assessment, there are both potential benefits and costs to increasing the usage ratio. The costs could include environment impacts (e.g. noise, emissions) associated with increased numbers of flights, with limited passenger numbers, if a carrier chose to operate a flight to avoid failing to meet the usage ratio and losing the series of slots. Against that, a potential benefit of a higher usage ratio could be that slots for routes which have less passenger demand are returned to the slot pool and become available for other carriers, improving competition and choice for passengers. It is important to note that a higher slot usage ratio would not increase the total number of flights allowed at an airport. The number of slots at an airport is set based on the passenger and/or air traffic movement caps that apply at each airport. At present, there is limited evidence on the potential benefits and costs of increasing the slot usage ratio and how it might work operationally. We would welcome views and any evidence on the potential impact an increase in the slot usage ratio might have.

### Consultation questions

10. Do you agree or disagree that a higher usage ratio would lead to more efficient use of existing airport slot capacity?
11. What do you consider would be the main positive and negative operational implications of a higher slot usage ratio?
12. What would you consider to be an appropriate higher alternative usage ratio to 80:20?
13. Do you agree or disagree that airports should be given the option to decide if to apply a higher usage ratio?
14. What views, if any, do you have on the environmental impacts, including achievement of net zero, of the proposal to increase the slot usage ratio?



## 2. A more transparent slot system

Since the mid-1980s, the UK's aviation sector has undergone significant liberalisation, which has helped deliver a substantial increase in passenger numbers and more connections to the UK than ever before. Aviation in the UK has been a story of success and almost non-stop growth. Despite this, fundamental features of the slot allocation system, which is core to the functioning of the aviation industry, have not seen significant change over the last 30 years. There have also been criticisms that parts of the slot allocation system are too opaque, which can lead to accusations of unfairness or that the system is being 'gamed'.

Transparency is a key feature of any modern marketplace. Greater transparency of the slot allocation system will make the aviation market more open, allowing for better outcomes for passenger, airlines and airports alike. In particular, greater transparency will provide more information which could benefit those who are not yet actively involved in the UK aviation market by allowing for further insight into how the process works and decisions are reached.

This chapter sets out potential reforms that could help improve transparency of the slot allocation system.

### Potential Reform Proposals

- |   |   |  |
|---|---|--|
| 1. Strengthened coordination committee role   | 2. Increased guidance on secondary criteria | 3. Power to direct the UK slot coordinator |
| 4. A slot register, a specified platform for all UK slot trades and strengthened oversight of secondary trading | 5. Limit on slot leasing                    |  |

# 1. Strengthened coordination committee role

## How it works now

- 2.1 In line with the international guidelines, slots are allocated by the coordinators twice a year, for the summer season and for the winter season. Most of the allocation is automated using software that can automatically determine, based on Historic Rights and the declared capacity constraints at each airport, whether or not a request can definitely be met. Any requests that are at the margin or require a trade-off to be made between secondary criteria are then considered manually by the coordinator's slot allocators. An airline can request information from the independent UK coordinator on decisions relating to the specific slots it requested. It is possible for an airline to request this information regardless of whether its slot request was accommodated or not. It is also possible for an airport's coordination committee to request information from the independent coordinator on various aspects of coordination and decisions relating to slots at the airport.
- 2.2 The Regulation establishes the requirement for coordination committees to provide oversight of slot coordination at slot coordinated airports. The Regulation sets out at a high level what the tasks of the committee should be:
- to make proposals concerning or advise the coordinator and/or the managing body of the airport on:
    - the possibilities for increasing the capacity of the airport determined in accordance with Article 3 or for improving its usage;
    - the coordination parameters to be determined in accordance with Article 6;
    - the methods of monitoring the use of allocated slots;
    - local guidelines for the allocation of slots or the monitoring of the use of allocated slots, taking into account, inter alia, possible environmental concerns, as provided for in Article 8(5);
    - improvements to traffic conditions prevailing at the airport in question;
    - serious problems encountered by new entrants; and
    - all questions relating to the capacity of the airport.
  - to mediate between all parties concerned on complaints on the allocation of slots.<sup>36</sup>

---

<sup>36</sup> [Council Regulation \(EEC\) No 95/93](#)

- 2.3 All slot coordinated airports in the UK have a coordination committee. The Regulation requires that the membership of this committee is open to at least the airlines using the airport(s) in question regularly and their representative organisations, the managing body of the airport concerned, the relevant air traffic control authorities and the representatives of general aviation using the airport regularly. The slot coordinator also attends coordination committees as an observer. Coordination committees play a role in the slot allocation process at local level, setting the parameters for slot coordination at individual airports. The committee also has a role in managing any complaints about the allocation of slots or the application of the slot regulations. However, there is limited evidence available about how effective coordination committees are in carrying out the functions set out in the Regulation, or whether these are the right functions and best use of such a forum.
- 2.4 There is currently no requirement to publish the workings of the coordination committee. Whilst the Regulation provides for any interested party to be able to request information from the independent coordinator on various elements of slot coordination, there is no requirement on an airport's coordination committee to routinely make available either its deliberations or decisions.

### What could change?

- 2.5 The Government believes that, given the scarcity of slots at some airports and their resulting commercial value, it is critical that airports and airlines retain confidence in the allocation process and how decisions on the allocation of individual slots are made.
- 2.6 We are proposing that the Regulation is updated to strengthen the role and accountability of the coordination committee in order that it acts as a focal point for scrutiny of decision-making in relation to slots. We envisage that this would involve requirements on the airport coordination committee to, as a minimum, publish and make publicly available reports on decisions taken by the committee. We are also considering introducing a requirement for every coordination committee to have an independent chair, with the appointment being approved by the Secretary of State.
- 2.7 The Government believes that the coordination committee is best placed to resolve issues relating to slot allocation at individual airports. We expect that as part of updating the Regulation to strengthen the role of the coordination committee, the committee will be given clear responsibility for ensuring complaints or appeals in relation to decisions by the coordinator reach a conclusion.

### Consultation questions

15. Do you agree or disagree that the coordination committee should act as a focal point for scrutiny of decision-making in relation to slot allocation at individual airports?

16. In what other ways, if at all, do you consider the role of the coordination committee should be strengthened?
17. Do you agree or disagree that there should be a requirement for every coordination committee to have an independent chair?
18. Do you agree or disagree that the coordination committee should be given clearer responsibility for ensuring complaints and appeals of slot decisions reach a conclusion?

## 2. Guidance on secondary criteria

### How it works now

- 2.8 ACL allocates slots for airlines who operate to and from the UK's slot coordinated airports for each summer and winter season.<sup>37</sup> In doing so, ACL must abide by the requirements set out in the Regulation.<sup>38</sup> The Regulation closely aligns with the WASG, which ACL also takes account of in making slot allocation decisions.
- 2.9 The WASG are intended to provide international air transport with a set of universal standards for the allocation of slots at slot coordinated airports (Level 3 airports) and facilitated airports (Level 2 airports). These guidelines are published by the Airports Council International (ACI), IATA and the Worldwide Airport Coordinators Group (WWACG) and overseen by the WASB. Membership of the WASB is made up of an equal number of airlines, airports and slot coordinators. The WASB meets regularly to review and update the WASG to ensure that the guidelines are kept updated in light of regulatory and other developments in the industry.
- 2.10 The WASG set out the primary and secondary criteria for allocating slots. The primary allocation criteria require that slots are first allocated based on the precedence of historic use, referred to as Historic Rights. Once slots with Historic Rights have been allocated, the remaining slots form the slot pool. The coordinator uses secondary (additional) criteria to determine allocation of the slots in the pool.
- 2.11 The WASG are the industry standard and have been continually developed since their inception in 1974. These guidelines do not apply any priority order or importance weighting to the secondary criteria. In the UK the guidelines are referred to by the coordinator in making slot allocation decisions. This gives the slot coordinator flexibility and control in determining how each secondary criterion is interpreted and applied to make allocation decisions.

---

<sup>37</sup> The summer slot scheduling season runs from the last Sunday in March to the last Saturday in October. The winter slot scheduling season runs from the last Sunday in October to the last Saturday in March.

<sup>38</sup> This EU Regulation is additionally supplemented by the Airports Slot Allocation Regulations 2006.

### **Secondary (additional) criteria for initial slot allocation**

**Effective Period of Operation:** Whether an airline's schedule will be effective for a longer period of operation in the same season than other competing requests.

**Operational Factors:** When operational factors (such as curfew) at one airport create a slot problem elsewhere, thereby constraining an airline's schedule.

**Time Spent on Waitlist:** Whether an airline's request has been pending on the waitlist longer than competing requests.

**Type of Consumer Service and Market:** The balance of the different types of services (scheduled, charter, and cargo) and markets (domestic, regional, and long haul, and leisure or business) should be considered.

**Connectivity:** Coordinators should try to ensure that due account is taken of the development of the specific airport route network and connectivity to meet the needs of passengers and shippers.

**Competition:** Coordinators should try to ensure that due account is taken of competitive factors in the allocation of available slots. These factors could include the addition and development of a new route or competition on an existing route.

**Environment:** Coordinators should try to ensure that due account is taken of environmental factors in the allocation of available slots.

**Local Guidelines:** The coordinator must take local guidelines into account should they exist. Such guidelines should be approved by the Coordination Committee or its equivalent.<sup>39</sup>

2.12 DfT has had feedback (such as the CEPA report) which highlighted that this flexibility can cause uncertainty around the coordinator's consideration and application of the secondary criteria which means that airlines with experience of the coordinator's decision-making process may have an advantage over other airlines.<sup>40</sup> CEPA's view was that this could lead to inefficient slot allocation outcomes as it is difficult for the coordinator to judge objectively which of the competing slot requests is likely to be most efficient. That is particularly so if the details provided by airlines are aimed to maximise the likelihood of securing a slot rather than accurately reflecting the expected slot usage.

<sup>39</sup> [Worldwide Slot Guidelines](#) (2022)

<sup>40</sup> CEPA, '[Slot Allocation at Heathrow in the context of runway expansion](#)' (2019)

## What could change?

- 2.13 The Government believes that the WASG are key in achieving a level of consistency on the international level, and it is right that the UK coordinator is guided by the WASG in the slot allocation process. However, given the international nature of the WASG it is not possible for the WASG to take into account the UK's specific circumstances. We are proposing that a **new power** should be introduced to allow the Secretary of State to **add criteria to and remove criteria from the list set out in the WASG, for the purpose of its application by the slot coordinator in the UK. The power would also allow Secretary of State to provide guidance to the coordinator** on the **prioritisation and interpretation** of these secondary criteria. This power would only relate to secondary criteria and therefore only apply to allocation of slots that remain in the slot pool after allocation based on the primary criterion of Historic Rights has been completed.
- 2.14 Having the opportunity to add to the secondary criteria and provide the coordinator with clear guidance on the prioritisation to be applied to secondary criteria could be a useful mechanism for the UK Government to ensure that the slot allocation process reflects the potentially unique needs of the UK aviation market, without compromising the independence of the slot coordinator. For example, this could enable the Government to ask the coordinator to give greater weight to environmental objectives alongside other criteria. Such policy guidance from Government is relatively common in other sectors and is used for example in the regulated utility sectors in the UK.
- 2.15 It is expected that where the Secretary of State would wish to add to and/or remove secondary criteria or issue guidance to the coordinator on the prioritisation and/or interpretation of secondary criteria, industry would be notified of the changes at least one season in advance of any criteria or guidance becoming applicable.
- 2.16 Finally, it should be noted that as this will be guidance, the coordinator would need to take account of the Government's views but would still be able to use its own judgement.

## Consultation questions

19. Do you agree or disagree that the Secretary of State should have the power to add criteria to and remove criteria from the list of secondary criteria?
20. What additional secondary criteria, if any, do you consider could be beneficial or detrimental to the slot allocation process?
21. Do you agree or disagree that the Secretary of State should have the power to give guidance to the coordinator on the prioritisation of secondary criteria?

### 3. Power to direct the UK slot coordinator

#### How it works now

2.17 The Regulation states that the slot coordinator should be independent and separated functionally from any single interested party and the financing of the coordinator should guarantee this independence. The Regulation also states that the independent coordinator shall be 'the sole person responsible for the allocation of slots'.<sup>41</sup> Although the majority of countries only have one coordinator, the Regulation allows for slot co-ordinators to be appointed at airport level, and there is no obligation for all airports within a country to have the same coordinator. A slot coordinator can also be responsible for coordinating airport slots in multiple countries.

#### Slot Coordinators Globally

Although an international approach is taken to slot allocation, the legislation underpinning coordination can vary and countries around the world often have different approaches to slot coordinators. Some slot coordinators are fully independent of the national government of the country whose slots they are coordinating whilst others are state owned. The Worldwide Airport Coordinators Group has 99 separate slot coordinators that make up their members and partners ranging from Nordic Airport Coordination to Qatar Slot Coordination.<sup>42</sup>



<sup>41</sup> Airports Slot Allocation Regulations 2006 (S.I. 2006/2665)

<sup>42</sup> WWACG, '[Organization & Funding Arrangements of WWACG Members](#)' (Accessed: March 2022)

The above map shows all the airports around the globe which are slot controlled (Level 3).<sup>43</sup> Slot allocation and coordination at these airports is managed by a plethora of different slot coordinators but they are all guided by the WASG.

Most slot coordinated airports are found in Europe and Asia with only a single coordinated airport in the US (John F. Kennedy International Airport). This is because there is a lot more congestion in heavily populated Europe relative to available airport capacity, than in North America.<sup>44</sup>

- 2.18 At present, the UK has a single independent slot coordinator, ACL. ACL is fully funded by the industry, through coordination fees, and does not receive any funding from the UK Government. The UK Government does not intervene in any individual slot allocation decisions. It currently also does not provide guidance or directions to the slot coordinator.
- 2.19 While the UK was a member of the EU, the UK Government had little involvement in airport slot policy, except for engaging with the EU over changes to legislation when there was a crisis (such as the 2008 financial crisis), or where large-scale new capacity was being considered. During the COVID-19 pandemic, there were some calls for the Government to take a more interventionist role in slot allocation. This was driven by the severe pressure that the airports were under or particular cases where airlines disagreed with a decision by the coordinator. Similarly, there have sometimes been requests for Government to provide guidance to the coordinator on how to apply or interpret various regulations.
- 2.20 The UK Government does not generally give guidance or direction on how regulations should be interpreted and does not consider, at the moment, that it would be appropriate to do so in this case.

## What could change?

- 2.21 The Government believes that independent and impartial slot coordination remains essential to the efficient operation of the slot allocation system, as well as being internationally agreed best practice. It is our view that there is a balance to be struck between a more formal or interventionist role for the Government in slot allocation. Whilst the Government does not envisage a role for it in day-to-day or individual slot allocation decisions, we believe there may be occasions where more direction from the Government could help provide clarity and certainty to the industry.
- 2.22 We are proposing to create a **new power for the Secretary of State** to issue a **direction** to the coordinator requiring it to undertake a certain action. Any direction would need to be in keeping with Regulation (for example a direction could not require the coordinator to do something which is not within its remit). We do not believe that it would be appropriate for the Government to have the ability to direct

<sup>43</sup> E. Pieniasek, Ishka, '[Are twin-engine widebodies a good investment?](#)' (2017)

<sup>44</sup> Directorate-General for Internal Policies, '[Policy Department B, Structural and Cohesion Policies](#)' (2016), Research for TRAN Committee: Airport slots and aircraft size at EU airports



the coordinator on the allocation of individual slots or to take action which would unfairly benefit a particular airport, airline or country.

- 2.23 This power might be of use where specific circumstances arose which were not envisaged by the Regulation and the Government wished the coordinator to act in a certain way to fit in with a wider industry response. This could for example be where exceptional circumstances meant that the application of requirements in the slot provisions was not clear cut but the Government wished to ensure consistency of application across all coordinated airports.
- 2.24 A direction is different from guidance (such as guidance on secondary criteria described earlier) – a direction would be setting out some specific action which the coordinator must take.

### Consultation questions

22. Do you agree or disagree that the Secretary of State should have the power to direct the coordinator?
23. What do you consider, if any, are the main main positive and negative operational implications of a power to direct the coordinator?
24. In what scenarios, if any, do you consider that a direction from the Secretary of State would not be appropriate or necessary?

## 4. A slot register, a specified platform for all UK slot trades and strengthened oversight of secondary trading

### How it works now

- 2.25 A slot is a permission to take off or land at a given airport at a given time allocated by an administrative process overseen by the slot coordinator. The Regulation does not describe an airport slot as a property capable of being owned by an airport or an airline. Whilst the Regulation provides opportunity for slot exchanges and transfers, it does not facilitate the trading of slots as a commodity. However, the Regulation also does not prohibit secondary trading of slots. Secondary trading of slots was confirmed as being allowed in the UK as result of the High Court ruling over a slot deal between British Airways and KLM in 1999.<sup>45</sup> Although secondary trading of slots is a feature of the current slot allocation system in the UK, it was not expressly part of the original design of the slot allocation system which was put in place through the Regulation. Consequently, there are no rules or requirements concerning how secondary trading of slots should be conducted.

---

<sup>45</sup> R v Airport Coordination Limited, ex parte States of Guernsey Transport Board, [1999] EWHC Admin 264

- 2.26 Airlines have no formal property rights, under the terms of the Regulation, to the slots they hold, but the Historic Rights associated with slots mean that they are often treated as assets.<sup>46</sup> Whilst airlines obtain slots without paying for them via the allocation process administered by the independent coordinator, slots at UK airports have been sold for millions of pounds. According to Frontier Economics, slots have an economic value which differs depending on the airport and the time of day that the slot is for. Scarcity tends to drive the value of slots, with slots at the most congested airports commanding the highest prices. In its report for the CAA, *Estimating the congestion premium at Heathrow*, Frontier Economics stated that a daily, year-round slot pair at Heathrow is reported to be worth around £15 million for early morning slots, around £10 million for slots in the middle of the day, and £5 million for evening slots.<sup>47</sup> Media reports have indicated that slots have been traded for considerably more<sup>48</sup>.
- 2.27 Secondary trading of slots can involve both permanent and temporary trades. In a permanent trade of slots, one airline sells all or some of its slots to another airline on a permanent basis. Temporary trading of slots is known as slot leasing (leasing is discussed in more detail later in this chapter). For a slot to be traded, all that is required is that the relevant airlines agree to the trade. There are no rules about advertising the trade or publicising the terms of the trade. The coordinator has no formal role in negotiating or agreeing a slot trade. The coordinator is only required to be notified of the trade to confirm that the proposed exchange of the slots is feasible, compatible with other slots requirements (such as compliance with trading restrictions on slots allocated to new entrants) and would not negatively impact the relevant airport's operations. The coordinator is not required to hold information about the trading history of any particular slot or the commercial terms of a trade (e.g. whether it was swapped for another slot, leased for a set period or involved a monetary transaction).
- 2.28 With no formal process or oversight, secondary trading has led to a lack of transparency over who holds and operates each slot. This in turn has contributed to a perceived opaqueness of the slot allocation system. In theory it would be possible for an interested party to track through the data held by the coordinator to establish who holds each slot and (where different) who operates the slot. However, this would not necessarily be straightforward. A number of responses to Aviation 2050, and feedback since then, have stated that secondary trading of slots is opaque and frustrating. Airlines seeking slots have reported that they are unable to easily identify airlines which may be interested in selling or leasing slots they hold.
- 2.29 Given how congested some UK airports are, secondary trading can sometimes be the only mechanism for airlines to acquire slots at busy airports. As indicated in the

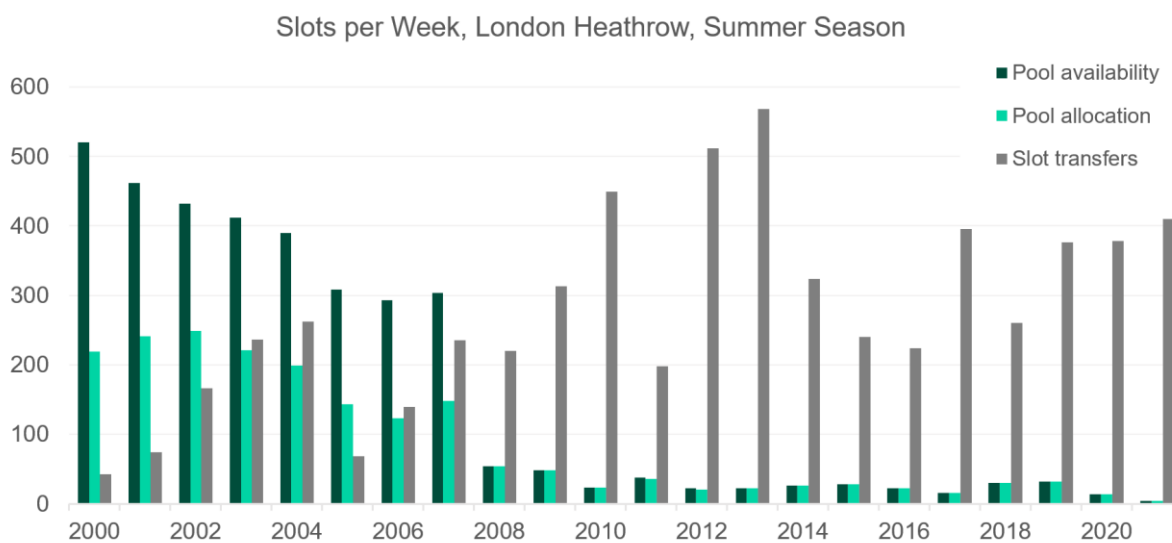
---

<sup>46</sup> CEPA, ['Slot Allocation at Heathrow in the context of runway expansion'](#) (2019)

<sup>47</sup> Frontier Economics, ['Estimating the Congestion Premium at Heathrow: A report prepared for Heathrow'](#) (2019)

<sup>48</sup> In 2017 it was reported that Scandinavian Airlines (SAS) sold two slot pairs at Heathrow airport for **US\$75 million**. The airline which acquired the slots remained anonymous. Aviation Week Network, ['SAS raises \\$75 million from Heathrow slot sale'](#) (2017)

chart below, this is true in the case of Heathrow where secondary trading has increased as the airport's capacity has become more congested.<sup>49</sup>



Source: DfT analysis of ACL data. Data is for week 23 of each year.

2.30 Data shared by ACL also shows that, whilst larger and well-financed carriers have been the major purchasers of slots at Heathrow, it has also been possible for new airlines to use the secondary trading market to grow their operations. Evidence about slot allocation in the UK confirms that since 2008 ten airlines have used the new entrant rule to obtain slots and then increased their slot holdings through secondary trading.<sup>50</sup>

2.31 The slot allocation system is designed on the basis that slots which airlines cannot use are returned to the slot pool for reallocation. Secondary trading enables airlines both to avoid returning slots to the slot pool and to bypass the need to meet set criteria in order to acquire slots. This leads to a different outcome in terms of who gets the slots compared to allocation based on primary and secondary allocation criteria used by the coordinator.

2.32 Secondary trading should be a mechanism to improve the efficiency of the slot allocation system, adjusting potential market failures whereby if an airline is unable to use a slot it has been allocated it can trade it with another airline which is able to make use of it. This can provide opportunity for enhanced connectivity, choice and potentially lower fares for passengers. However, in its 2019 report, CEPA said that the evidence suggests that secondary trading is an imperfect solution that retains elements of inefficiency. According to CEPA, not all slot holders may be willing to sell their slots to another airline even if the slots would be used more efficiently (e.g. used

<sup>49</sup> ACL, '[Aviation 2050: The future of UK aviation](#)', [ACL response](#) (2019) N.B. this chart covers slots allocated from the pool and through secondary trading, not through other means such as Historic Rights.

<sup>50</sup> ACL, '[Aviation 2050: The future of UK aviation](#)', [ACL response](#) (2019)

to fly more frequently, achieve higher passenger loads on each flight, create better or increased connectivity, secure reduced prices etc.) by the other airline. This could be because the potential buyer of a slot is a competitor of the seller, which means that even when there are both willing buyers and sellers, some slots remain in the hands of the original airline even where a trade would have been possible.<sup>51</sup>

- 2.33 An incumbent airline might have an active interest in not giving up a slot to a competitor for strategic reasons, for instance to maintain its market power. This reduces the efficiency of the slot allocation system by potentially denying the slots to the airline that would make the best use of them.<sup>52</sup> The result of this is less competition in the UK aviation market. This in turn has the potential to result in less choice for passengers, in terms of times and routes, and air fares remaining higher than they might have done otherwise.
- 2.34 CEPA suggested that the CMA should have a role in the secondary trading of slots, to monitor the efficiency of the market and prevent any single airline accumulating market power through the secondary market in a way that is ultimately bad for competition and consumers.<sup>53</sup> It further suggested that a limit could be set for the secondary trades of slots above which the CMA would be involved, similar to limits for merger control. This would mean that a review of competition implications and/ or approval of slot trades would be triggered where a trade would result in a single airline or airline group holding 25% or more of the total number of slots available at an airport.<sup>54</sup>

## What could change?

- 2.35 The Government believes that there is value in establishing a clear legislative framework for secondary trading of slots to provide transparent, clear and fair rules for all parties.
- 2.36 We are proposing to legislate to require the establishment of a compulsory public **slot register for each Level 3 airport**. We envisage that as a minimum, the register would record all slot holdings, showing who holds the Historic Rights to a slot, who operates each slot, and record the duration of slot lease agreements. A register would make the slot allocation system more transparent and would allow the holding and operation of slots to be transparent.
- 2.37 In addition, we are proposing to legislate that a **mandatory trading platform** is established to facilitate secondary trading of slots. Whilst the exact functionality of the platform needs further consideration, it is envisaged that ACL would be responsible for providing and maintaining the platform. At the very least, slots that are available for trading would be required to be advertised on the platform. The Government believes that there are instances where secondary trading of slots needs to be scrutinised to ensure that the market is operating effectively, fairly and in a way which

---

<sup>51</sup> CEPA, '[Slot Allocation at Heathrow in the context of runway expansion](#)' (2019)

<sup>52</sup> CMA, '[Advice for the Department for Transport on Competition Impacts of Airport Slot Allocation](#)' (2018)

<sup>53</sup> CEPA, '[Slot Allocation at Heathrow in the context of runway expansion](#)' (2019)

enables open competition. Therefore, the Government considers that there would be value in strengthening the oversight of secondary trading through a more formalised role for an existing regulatory body, in overseeing the secondary trading of airport slots.

- 2.38 The Government's initial view is that it would be useful to set a level for when further scrutiny and oversight should apply to secondary trade of slots. However, we believe that it may not be necessary for all secondary trades at all airports to be subject to this as the risks around competition are more likely to materialise at airports with substantial market power.
- 2.39 We are proposing that a regulatory body is given a formal role in overseeing secondary trading, whereby it **would review and approve slot trades** when a trade would result in the acquiring airline or airline group holding a **defined proportion of slots** at an airport with substantial market power as assessed by the CAA under the Civil Aviation Act 2012. The threshold for the defined proportion of slots would be determined and set out in advance.

## Consultation questions

25. Do you agree or disagree that there should be a public slot register which records who holds the Historic Rights to a slot, who operates each slot and the duration of any slot lease?
26. What, if any, other information do you think that it would be useful to record on a public slot register?
27. Do you agree or disagree that all secondary trading should be advertised and carried out through a central slot trading platform?
28. Do you agree or disagree that requiring use of such a platform would increase transparency?
29. What do you consider, if any, would be the benefits and disadvantages of using a central slot trading platform for all secondary trading of slots?
30. Do you agree or disagree with this platform being run by ACL?
31. Do you agree or disagree that further oversight of the secondary trading market is necessary to protect 'fair and open' competition?
32. What, in your view, if any, would be an appropriate threshold for when review and/or approval would automatically apply to a slot trade?
33. Do you agree or disagree that further oversight of secondary trades of slots should only apply at airports with substantial market power?

## 5. Limit on slot leasing

### How it works now

- 2.40 Airlines can trade slots on a temporary basis which is known as slot leasing. Slot leasing allows an airline to trade some or all of its slots for a defined period and regain them later. As slot leasing is a form of secondary trade, there are no rules or regulations governing slot leasing. Leasing is the most common transaction on the secondary market for slots.<sup>55</sup> An airline can voluntarily inform the independent slot coordinator if a slot trade is a lease, but it is not obliged to do so.
- 2.41 According to CEPA, leasing a slot can be very beneficial for the airline that is the lessor. The vast majority of slots have been allocated to carriers through the slot allocation process, and as these slots were allocated to airlines free of charge any gains they make from leasing the slots are entirely profit. By leasing out a slot, carriers also avoid the costs of maintaining the aircraft and personnel necessary to fly the route for that slot. In addition, as airlines can themselves decide who they lease their slots to, they can ensure that slots are not leased by their competitors.<sup>56</sup>
- 2.42 Leasing slots out can deliver many benefits to the lessor, although in contrast, being a lessee comes with significant disadvantages according to CEPA. Airlines have to pay for the use of a slot that they could have obtained free of charge if the airline that is leasing out the slot had instead returned the slot to the slot pool for re-allocation. A lessee airline also cannot obtain Historic Rights to the slots it is leasing and therefore faces uncertainty around whether it will be able to continue operating a route once the lease ends. Given this uncertainty, lessee airlines have a reduced incentive to invest in the facilities at airports and in the development of routes.
- 2.43 For passengers, slot leasing has potential benefits as well as downsides. Slot leasing means that there is an opportunity for a lessee airline to offer services to passengers, providing passengers with more choice and connections, services which might otherwise not have been available as the airline would not have been able to secure these slots through the slot pool given they are already held by an airline. However, CEPA pointed out that the extra costs incurred by airlines leasing slots are likely to be passed on to consumers and drive up the cost of travel.<sup>57</sup>
- 2.44 In its response to Aviation 2050, ACL also raised concerns about leasing, stating that it can lead to inefficient use of slots and is not necessarily in the consumer's interest.<sup>58</sup> Analysis by both ACL and CEPA suggests that some airlines use slot leasing to bank (or hold on to) slots for which they have no immediate use. There are also instances where airlines cease to operate at an airport (i.e. have no flight operations to or from the airport) but retain their slots by leasing them only to later sell them. By leasing out their slots, airlines avoid being required to return the slots to

---

<sup>55</sup> CEPA, '[Slot Allocation at Heathrow in the context of runway expansion](#)' (2019)

<sup>56</sup> CEPA, '[Slot Allocation at Heathrow in the context of runway expansion](#)' (2019)

<sup>57</sup> CEPA, '[Slot Allocation at Heathrow in the context of runway expansion](#)' (2019)

<sup>58</sup> ACL, '[Aviation 2050: The future of UK aviation](#)', [ACL response](#) (2019)

the slot pool and therefore maintain their Historic Rights to the slots. This is known as slot hoarding and is an example of inefficiency in the slot allocation system.<sup>59</sup> Slot hoarding is likely to be more prevalent at an airport with significant capacity constraint as the value of slots will be very high. This creates an incentive for airlines to lease out slots rather than returning them to the pool.

2.45 ACL analysis of secondary trading at Heathrow found that large, well-funded carriers and groups were the most active participants in the existing secondary market for slots and were often those most active in leasing out their slots.<sup>60</sup> ACL's analysis of Heathrow slots showed that leasing is undertaken by a much broader range of carriers and by more in number (44 different carriers involved in leasing versus 18 carriers purchasing slots between 2008 to 2019) compared to slot sales.<sup>61</sup> ACL believes that the reason for the larger number of carriers operating on leased slots could be that leasing can come at no or very low financial cost to the lessee, as the main objective of the airline leasing out its slots may be to retain the Historic Rights to the slots rather than financial gain.<sup>62</sup> However, it is difficult to confirm this with absolute certainty as airlines are neither required to inform ACL when a slot trade is a lease nor the amount for which a slot has been leased.

## What could change?

2.46 The Government believes that slot leasing is a useful form of secondary trading which can provide airlines with flexibility to deal with period of operational uncertainty. However, it is the Government's view that an airline should not use leasing to hold on to a slot for an extended period which it has no use for. Leasing should not be used as a long-term operational solution and slots should instead be returned to the pool for reallocation. The Government's view is that a slot, and the accompanying Historic Rights, should as far as possible be held by the airline which uses the slot to operate air services.

2.47 We are proposing that **slot leasing is limited to a set period** after which the slot will have to either be returned to the pool or flown by the original slot holder. It is envisaged that the limit may be for a shorter time period for slot leasing by an airline that has ceased to operate at an airport.

## Consultation questions

34. Do you agree or disagree that slot leasing should be limited to a set period of time?

---

<sup>59</sup> CEPA, '[Slot Allocation at Heathrow in the context of runway expansion](#)' (2018) and ACL, '[Aviation 2050: The future of UK aviation](#)', [ACL response](#) (2019)

<sup>60</sup> ACL, '[Aviation 2050: The future of UK aviation](#)', [ACL response](#) (2019)

<sup>61</sup> ACL, ACL, '[Aviation 2050: The future of UK aviation](#)', [ACL response](#) (2019)

<sup>62</sup> ACL, ACL, '[Aviation 2050: The future of UK aviation](#)', [ACL response](#) (2019)

35. Do you agree or disagree that a time limit on slot leasing would be effective in encouraging airlines to return slots that they cannot use to the pool?
36. What do you think would be the appropriate time period for a limit on slot leasing?
37. Do you agree or disagree that airlines that no longer operate at an airport should be subject to a different time limit on slot leasing than airlines currently operating at the airport?
38. Why and what difference would you like to have implemented?
39. What do you consider are the main positive and negative operational implications of limiting slot leasing to a set period?



## 3. Allocation of new slots

In the event of new slots being released at UK Level 3 airports, there may be benefits to adopting an alternative approach to the allocation of these new slots, not least given that slots have the potential to have a substantial monetary value. This chapter considers proposals for allocation of new slots, regardless of whether they become available as result of new runway capacity, airports making best use of existing runways or other airport changes.

The reform proposals set out in this chapter are not related to and are without prejudice to the consideration of existing or future airport expansion applications by local planning authorities or Ministers.

### **Potential Reform Proposals**

1. Auction of new slots
2. Ring-fencing of new slots for certain purposes

## Background – airport and slot capacity in the UK

- 3.1 Newly created slots are a rarity in the UK's slot congested airports. Under the current system, any newly created slots would be distributed among airlines by the slot coordinator using the secondary criteria method. However, there could be alternative ways to allocate new slots which may be worth exploring.
- 3.2 The Government has been clear in the 'Flightpath to the Future' strategic framework and the Jet Zero Strategy that it continues to support sustainable airport growth. Our existing policy frameworks for airport planning – the Airports National Policy Statement and Making Best Use of existing runways – ensure that any proposals are judged on their individual merits by the relevant planning authority, taking careful account of all relevant considerations, including economic and environmental impacts.
- 3.3 There has been sustained demand for airport growth in the UK, particularly in the South East of England. Prior to COVID-19, with all airports combined, London had the busiest city airport system in the world.<sup>63</sup> There were over 1 million flights resulting in 180 million terminal and transit passengers in 2019.<sup>64</sup> Gatwick and Heathrow were already operating near their limits in terms of their permitted number of Air Transport Movements (ATMs) and were respectively the busiest one and two runway airports in the world.<sup>65</sup> Although the pandemic shook the global aviation system and radically altered the state of play, many airports continue to expect to move forward with their growth plans in the medium to long-term.

## Why allocate new slot capacity differently?

- 3.4 When the Government consulted on slot reform in 2018 as part of Aviation 2050, our consultation assumed the creation of additional airport capacity at our most congested airport, London Heathrow. The Aviation 2050 consultation therefore specifically looked at slot reform alongside proposals for a Heathrow third runway opening by 2030. Although Heathrow Airport Limited has currently paused its expansion plans, other airports are progressing plans to make best use of their existing runways.<sup>66</sup> If these plans materialise, this would result in the release of new slots and could provide an opportunity to trial a different approach for allocating slots.
- 3.5 When the CEPA report was commissioned in 2019 this only looked at allocating new slots through the lens of new capacity resulting from a new runway at Heathrow. However, there is potential for adopting alternative allocation methods for new slots

---

<sup>63</sup> Greater London Authority, '[Busiest Airports by Passenger Traffic](#)' (2019)

<sup>64</sup> This figure is a combination of the London area airports Gatwick, Heathrow, London City, Luton, Southend and Stansted. Data from CAA: '[Passengers and Air transport Movements Split by Fixed Wing and Rotary Wing Aircraft \(2020\)](#)'

<sup>65</sup> Jacobs, '[Operation Efficiency: Phasing and Facilities Review](#)' (2015)

<sup>66</sup> Heathrow, '[Heathrow Expansion](#)' (Accessed: March 2023)

regardless of whether they become available as result of new runway capacity, airports making best use of existing runways or other airport changes.

- 3.6 Large-scale release of new slot capacity is relatively rare in the UK, yet even a small number of new slots can potentially have significant implications. These implications are not necessarily reflected in the current slot allocation rules as current Regulation focuses on existing slots and there may be different slot allocation pressures which could arise from new slot. These pressures could include the new infrastructure being available by a specific date and the time needed by airlines to establish and resource new routes, including hiring crew and acquiring aircrafts, which are unlikely to fit with the standard timings for slot coordination activities.
- 3.7 As Historic Rights are the primary criterion for allocation, under the current system, the default is for new slots to be allocated using the secondary slot allocation criteria process, as none of these slots have any Historic Rights attached to them. Given that the demand for certain slots already far exceeds availability at slot coordinated airports, it is likely that the requests for new slots would exceed the number of new slots made available. The slot coordinator would therefore be required to allocate the new slots under the secondary criteria set out in the WASG on a case-by-case basis. This could be a challenge for the coordinator as well as airlines given the need to decide between large numbers of competing and inter-related requests using secondary criteria. The coordinator's allocation decisions may be at higher risk of being challenged, which would create uncertainty both for airlines who are allocated slots, and those airlines who have not been allocated slots. This would leave airlines with no clear sense of how many slots they might ultimately obtain. This in turn would mean that airlines would be unable to move forward with essential business planning and preparations for operating the slots they may, or may not, be allocated.
- 3.8 The slot coordination process starts six months before the start of each summer and winter season with allocations finalised two months before the start of the respective season. However, with new slots, a longer lead in time may be required between initial allocation and the slots being operated. This would be so that airlines could be provided with the right balance between certainty and flexibility in order to adjust operations, for example to plan and prepare for commencement or expansion of routes (e.g. investment in new fleets and recruitment of new staff). Certainty in the allocation of new slots at earliest possible point is essential to give airlines time to optimise their schedules ahead of the slot capacity becoming operational. As mentioned above, allocation based on the secondary criteria may not be able to provide this certainty if allocation decisions are challenged.

# 1. Auction of new slots

## How it works now

- 3.9 The concept of auctioning slots has been proposed for some time.<sup>67</sup> Auctioning is generally considered to be a more effective allocation model when distributing scarce resources (such as a slot) compared to an administrative mechanism. Auctions have been used in the UK as an allocation mechanism several times in the past, such as the auction by Ofcom of mobile phone spectrum.<sup>68</sup> A 2017 House of Commons Briefing Paper noted that, in principle, auctioning could provide an efficient allocation mechanism, especially in the context of an expanded Heathrow Airport.<sup>69</sup> Auctioning slots could also increase competition by enabling allocation of slots to operators that value them the most, and help facilitate innovative services.<sup>70</sup> A slot auction would be broadly the same as an ordinary public auction (e.g. auction of antiques, property, art etc.) and would involve a process in which potential buyers would place competitive bids to obtain slots.
- 3.10 The Government set out in the Aviation 2050 consultation that it was considering market-based mechanisms for the allocation of slots when there is release of additional airport slot capacity, including auctioning of all slots or a limited number that would be most sought after. As part of the consultation, the Government sought advice on auctioning as a potential tool for the allocation of airport slots. This came alongside advice provided by the CMA to DfT on competition impacts of airport slot allocation. The CMA's view was that there were 'clear efficiency benefits' from auctions in principle and that a 'market-based approach would lead to a greater allocation of slots to the most efficient user and may encourage greater innovation in the subsequent use of those slots'.<sup>71</sup> The CMA also noted that auctions are less prone to political interference or potential legal action (and/or perception of it) inherent in the current nature of administrative allocation, whilst auctions could also potentially be used to raise substantial revenues.<sup>72</sup>
- 3.11 Feedback on the proposal in Aviation 2050 to use auctions for allocation of slots was mixed. A number of responses to the Aviation 2050 consultation expressed concern, citing increased frictional costs from the auction process – which would be passed to consumers – and greater uncertainty. However, other responses were more favourable. Some of the responses highlighted that because slots are currently allocated for free, airlines could be incentivised to apply for slots they don't really need either to trade them in the future or to prevent a competitor getting them.

---

<sup>67</sup> There have been proposals for using auctioning since as early as 1982 with the publication of a seminal paper by Rassenti, J.; Smith, V. L.; and Bulfin, R. L.; 'A Combinatorial Auction Mechanism for Airport Time Slot Allocation', *The Bell Journal of Economics*, Vol. 13, No. 2 (Autumn, 1982), pp. 402-417 on the concept of using an auction to allocate slots.

<sup>68</sup> Ofcom, ['Award of 700 MHz and 3.6-3.8 GHz spectrum by auction'](#) (2021)

<sup>69</sup> House of Commons Briefing Paper, ['Airport Slots'](#)(2017)

<sup>70</sup> Ockenfels, A., Cramton, P., Gritzmam, P., Bichler, Martin., CEPR, ["It is time to auction slots at congested airports"](#) (2021)

<sup>71</sup> CEPA, ['Slot Allocation at Heathrow in the context of runway expansion'](#) (2018)

<sup>72</sup> CEPA, ['Slot Allocation at Heathrow in the context of runway expansion'](#) (2018)

Having to pay for a slot through auctioning could act as a disincentive to airlines bidding solely to restrict market competition or with a view to making a windfall gain in the secondary trading slot market. Overall, responses to Aviation 2050 suggested that further work to define how auctioning of slots might work was necessary in order for the potential advantages and disadvantages of this option to be better understood.

The below table shows a selection of advantages and disadvantages of using auctioning to allocate newly created airport slots.

Slot Auctioning	
Advantages	Disadvantages
<p>Slots may end up with airlines who are best placed to make efficient use of them, as shown by their willingness to pay for the slots.<sup>73</sup></p> <p>This more efficient allocation could lead to improved consumer outcomes, resulting in potentially greater choice and improved service quality.<sup>74</sup></p>	<p>Auctioning could add additional costs and uncertainty to the slots process which may have detrimental outcomes for consumers.<sup>75</sup></p> <p>These costs could take the form of frictional transactional costs from moving slots from one carrier to another with auction houses taking commission and could also inflate the price of slots.</p> <p>This in turn may lead to distortions between carriers and ultimately reduce choice and connectivity for consumers. It could create perverse incentives to reduce the creation of new capacity to keep the values high for those receiving the revenue.<sup>76</sup></p>
<p>It could encourage stronger competition and innovation by reducing the incumbency advantage and make it easier for new entrants to enter and increase investment.<sup>77</sup></p>	<p>Use of auctions for slot allocation is currently inconsistent with the slot allocation process internationally and this could lead to uncertainty for airlines depending on the timing of slot allocation internationally and when an auction is held.<sup>78</sup></p> <p>As airlines need slots at both ends of a route, airlines might have to bid in an auction without knowing which slots they would be able to</p>

<sup>73</sup> Niemietz, K., IEA '[Terminal Problem? The Case of Market-based airport slots allocation](#)' (2022)

<sup>74</sup> CEPA, '[Slot Allocation at Heathrow in the context of runway expansion](#)' (2019)

<sup>75</sup> IATA, '[Worldwide Airport Slots: Fact Sheet](#)' (2023)

<sup>76</sup> IATA, '[Worldwide Airport Slots: Fact Sheet](#)' (2023)

<sup>77</sup> CMA, '[Advice for the Department for Transport on competition impacts of airport slot allocation](#)'(2018)

<sup>78</sup> CEPA, '[Slot Allocation at Heathrow in the context of runway expansion](#)' (2019)

	<p>obtain elsewhere.<sup>79</sup></p>
<p>Auctions could mean there is less need for tools such as the 80:20 slot usage rule, as airlines would have a greater incentive to utilise their slots to their maximum given that they have paid for their slots. This could therefore mitigate associated issues such as ‘Ghost Flights’.<sup>80</sup></p>	<p>Unless a slot cap was included in the auction (with there being a limit on the number of slots allowed to be obtained), airlines with a strong balance sheet, including state backed airlines, could acquire large amounts of slots and prevent smaller carriers from entering the market.</p> <p>This may arise out of larger airlines having higher valuations for slots due to facing fewer financial constraints, perhaps due to benefits of high profits (in the case of large incumbents) or due to being state-backed carriers.<sup>81</sup></p> <p>It could also arise from incumbents being more willing to buy at values higher than their objective valuations for reasons of maintaining market power.<sup>82</sup></p>
<p>Auctions could be an alternative way to raise revenue, which could be transferred to Government, to fund public services, or to airports enabling them to fund improvements or reduce airport charges.</p>	<p>There may be costs to consumers if airlines pass on any increase in costs associated with auctioning. These could include the marginal administrative costs of operating the auction as well as the cost of the slots themselves.</p>
<p>Auctions could reduce perceptions of unfairness in relation to the distribution of slots under the administrative regime.</p>	

<sup>79</sup> CEPA, [‘Slot Allocation at Heathrow in the context of runway expansion’](#) (2018)

<sup>80</sup> Niemietz, K., IEA [‘Terminal Problem? The Case of Market-based airport slots allocation’](#) (2022)

<sup>81</sup> CEPA, [‘Slot Allocation at Heathrow in the context of runway expansion’](#) (2018)

<sup>82</sup> CEPA, [‘Slot Allocation at Heathrow in the context of runway expansion’](#) (2018)

## What could change?

- 3.12 The Government considers that criteria-based slot allocation remains the best approach for existing slots. However, the Government believes that auctioning of slots could be an efficient alternative to criteria-based allocation approach for the initial allocation of new slots that result from the increase in slot capacity at an airport.
- 3.13 Slots can be seen as a non-material asset of public utility and at capacity constrained airports these are potentially worth a significant amount of capital. An auction would be a fair way of distributing slots. The Government recognises that the design of the auction would need to be considered carefully to ensure its robustness and fairness. We would need to consider which, if any, auction method is best suited for slot allocation purposes and whether such auctioning should take place as a one-off event or at regular intervals. Any auction would need to be planned and take place in advance of the release of new slots capacity so that airlines had certainty over what slots they had acquired early enough that they could plan routes and operations.
- 3.14 Following the Aviation 2050 consultation, in 2019 DfT commissioned further work to help it assess how auctions might work for slots. DfT commissioned CEPA and Oxera to explore how auctions might be applied to the airport slots market, and the impacts relative to administrative criteria-based allocation. CEPA was commissioned to: (i) review and develop proposals for reform of the slot allocation system in the context of Heathrow expansion, including administrative and auction options, and; (ii) appraise these against Government objectives for slot allocation, stated as connectivity, efficiency, and international and domestic connectivity. The CEPA report considered two different auction designs for auctioning of slots at Heathrow - a combinatorial auction and a clock auction.
- 3.15 Full details of CEPA's considerations for slot allocation using the two auction designs can be found in the report annexed to this consultation (**Annex D**). Although CEPA identified complexities and risks associated with using different types of auctions to allocate slots, stressing that no designs were perfect, it ultimately concluded that each of their proposed auction packages would represent an improvement relative to the current administrative slot allocation process in terms of achieving Government's objectives.
- 3.16 Oxera was commissioned to construct and run a behavioural experiment to consider how airlines may react to the release of a substantial number of new slots at an expanded Heathrow, in which participants should simulate airline behaviour under an auction slot allocation option. Following this, they were required to report on experiment results, including providing conclusions about how well different approaches to allocation deliver against Government objectives of competition, efficiency, and international and domestic connectivity. Although the reports assessed different approaches to allocating slots in relation to an expanded Heathrow, the underlying principle of dealing with slot capacity increase can be applied to other airports that anticipate new slot capacity.
- 3.17 The Oxera report is a behavioural experiment, which described and tested the impact of replacing the criteria-based mechanism, as currently used, for allocating slots at the bidding stage with an auction in the event of the expansion of capacity at

Heathrow.<sup>83</sup> Oxera's report concludes that using auctions to allocate slots generally has a positive effect on competition and efficiency compared to the other allocation methods considered, with some exceptions. For example, using auctions tended to lower average route-level market shares, with resulting positive effect on efficiency, measured in terms of its impact on consumers, than some other methods. That said, the effect on competition, measured using indices such as the Herfindahl-Hirschman Index (HHI) was more mixed.<sup>84</sup> Full details of Oxera's auction design can be found in the report annexed to this consultation (**Annex E**).

3.18 **Annex B** explores the goals of a slot auction, what aspects of auction design DfT might need to consider and key findings from the CEPA and Oxera reports. We would welcome views on whether the auction models proposed in **Annex B**, or indeed other auction models, would be a good method for allocating new airport slots, and what considerations should be taken into account in the auction design.

3.19 If, following this consultation, the Government decides to pursue slot auctions as a potential method for the allocation of new capacity, it is likely that any slot reform legislation would include powers to make regulations to enable the auction. This would enable any auction to be designed to be appropriate for the circumstances at the time. It would also enable, for example, any approach to be tested through smaller scale pilots to build the evidence base and test outcomes and impact on airport and airline operations.

## Consultation questions

40. Do you agree or disagree that slot auctioning would be an effective means of allocating new slot capacity?

41. Which, if any, of the auction designs in Annex B would you prefer to be used for auctioning slots?

42. What, in your view, should revenue raised through slot auctions be used for?

43. What do you consider would be the main positive or negative impacts of slot auctioning on market entry, competition and innovation?

---

<sup>83</sup> Oxera, [Slot allocation at an expanded Heathrow: Behavioural experiment](#), (2019)

<sup>84</sup> The HHI is an indicator of concentration amongst firms in a market, based on both the number of firms and their sizes. Lower HHI scores indicate higher levels of competition and higher HHI scores indicate lower levels of competition, which a score close to zero designating 'perfect competition' dynamics, and 10,000 designating a monopoly case.



## 2. Ring-fencing of new slots for certain purposes

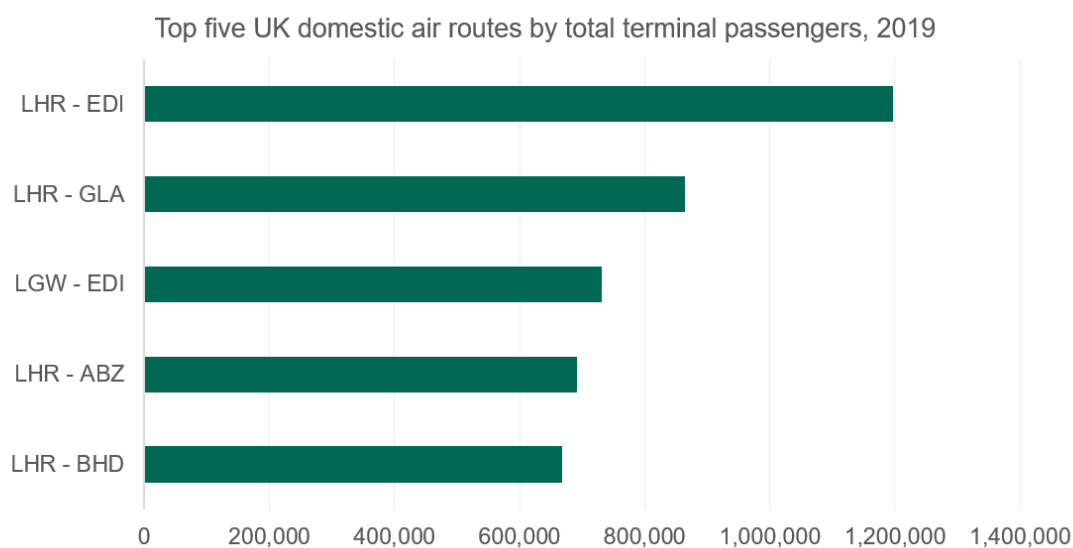
### How it works now

3.20 Slots are currently allocated according to the rules set in Regulation and the WASG. There is currently no provision in either Regulation or WASG for slots to be reserved for specific purposes, referred to as 'ring-fencing' of slots.

3.21 The CEPA report considered domestic connectivity in the context of domestic connections at an expanded Heathrow Airport. CEPA held that with the release of large-scale new capacity, services to domestic destinations were likely to increase. However, over time, as capacity constraints start to materialise, domestic routes were likely to be replaced by more valuable international routes.<sup>85</sup> In addition, changes to other transport modes may affect the attractiveness and competitiveness of domestic flights. CEPA suggested that, if the Government wished to protect domestic connections, a proportion of slots should be ring-fenced for domestic connection purposes when there is release of large-scale new slot capacity.



<sup>85</sup> CEPA, '[Slot Allocation at Heathrow in the context of runway expansion](#)' (2019)



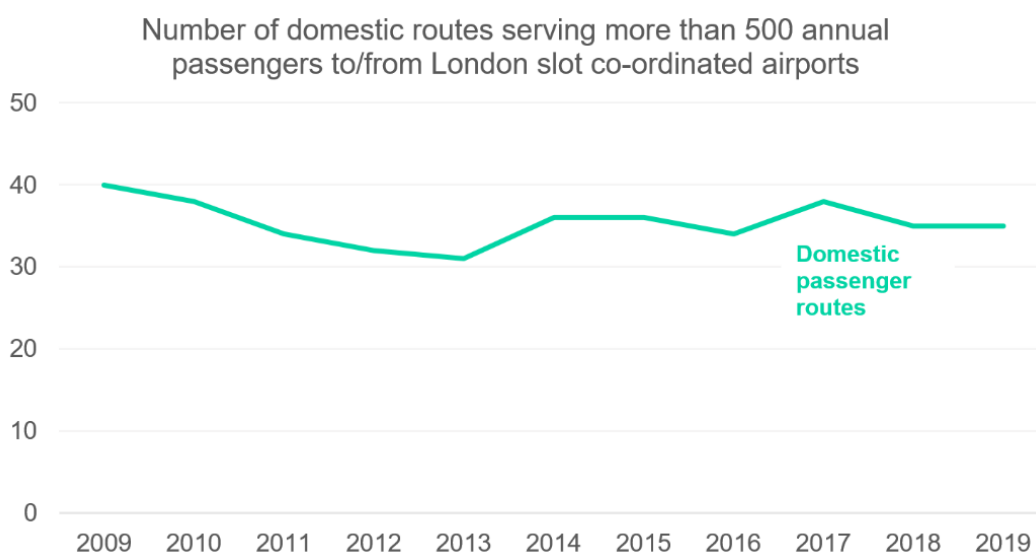
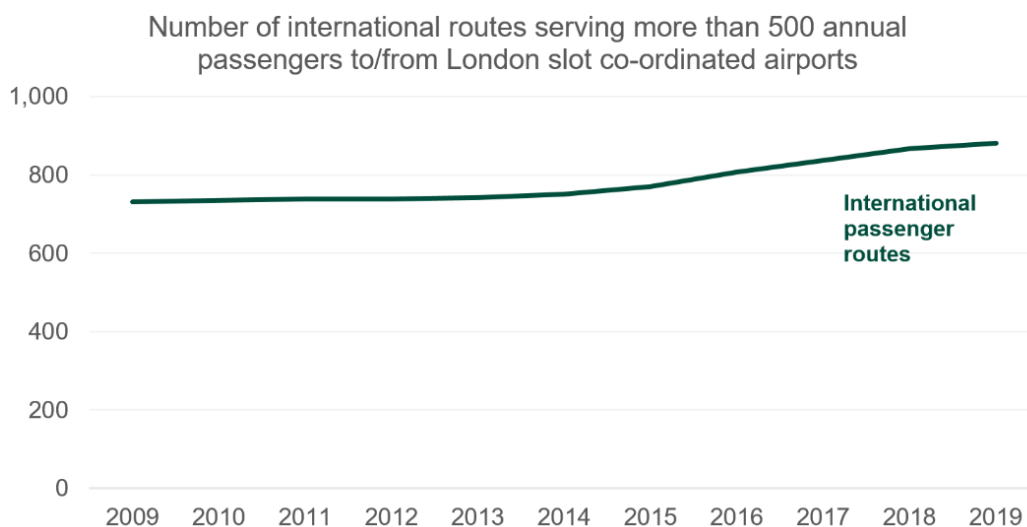
Comparison of 2019 UK international air routes with UK domestic air routes [note different scales].<sup>86</sup>

Source: DfT analysis of Civil Aviation Authority Airport Data

3.22 The independent Union Connectivity Review’s final report, published in January 2022, made recommendations that aim to improve transport connectivity across the UK. As part of its recommendations, the Review recommended that **where journeys are too long to be reasonably taken by road or rail**, the UK Government should **intervene in the assignment of slots at London airports to provide more slots for domestic routes**.<sup>87</sup>

<sup>86</sup> (1) A route is defined at airport-to-airport level (e.g. Heathrow to/from Edinburgh), (2) Data includes scheduled and charter flights, (3) Top five routes are determined by the total number of terminal passengers in 2019. Duplication has been eliminated so that actual passenger numbers are shown, (4) Flights between UK airports and UK Crown Dependency airports have been excluded, as have flights involving oil rigs.

<sup>87</sup> DfT, [‘Union Connectivity Review: Final Report’](#) (2021)



International and domestic passenger routes to/from London slot co-ordinated airports, 2009 to 2019.<sup>88</sup>

Source: DfT Analysis of Civil Aviation Authority Airport Data

<sup>88</sup> Notes:

1. Flights between London slot co-ordinated airports and UK Crown Dependency airports have been included in international routes.
2. Flights to Oil Rigs have been excluded.
3. A route is defined at airport-to-airport level (e.g. Heathrow to/from Marseille)
4. Data includes scheduled and charter flights.
5. Includes passenger flights, cargo-only flights have been excluded.
6. London slot co-ordinated airports are Heathrow, Gatwick, Stansted, Luton and City.

- 3.23 Whilst domestic services from capacity constrained airports can be less commercially attractive for airlines, they play a valuable role connecting regions of the UK and act as feeder services to hub operations, connecting UK regions to international destinations. The UK Government has not previously ring-fenced slots for domestic connectivity or any other purposes, though internationally there have been efforts to assign slots for certain purposes. Most notably in the 1990s ring-fencing was introduced at US airports such as New York JFK and Chicago O'Hare. Slots at these airports were initially ring-fenced into three categories: commuters, US domestic and US international. This was to allow for the protection of key domestic airline markets.<sup>89</sup>
- 3.24 The restrictions brought about through ring-fencing initially proved 'very limiting' as they prevented certain airlines from growing despite demand and other airlines being locked into a route even when there was insufficient demand. However, by continuing to apply the 80:20 slot usage rule, slots for routes with insufficient demand were unable to meet the 80:20 slot usage rule and therefore eventually returned to the slot pool. These slots were repurposed through the slot allocation process which created a 'healthy mix of domestic and commuter traffic' as market forces rebalanced slot allocation to match demand.<sup>90</sup>

### What could change?

- 3.25 The Government does not wish to impede commercial operations. We would prefer to leave travel mode and airline routes to be decided by the market which is best placed to respond to passenger demand. However, the Government believes that there may be value in creating the ability for a proportion of slots to be ring-fenced for certain purposes when new slots become available and there is sufficient evidence to justify this.
- 3.26 The Government believes that domestic connectivity is essential to bringing different regions of the UK closer together, and air transport could achieve this where there are no practical other transport alternatives. Domestic flights could help support the Government's Levelling Up and Union Connectivity objectives. They play an important role in ensuring that regions of the UK have the opportunity to benefit from a Global Britain and bringing families and communities across the country closer together. Consequently, it is envisaged that if ring-fencing of slots for specific purposes was implemented, this would likely include ring-fencing slots for the purpose of facilitating domestic connectivity.
- 3.27 In considering ring-fencing of slots for domestic connections, CEPA put forward a potential practical implementation of this at Heathrow Airport to achieve a set number of domestic connections. We are not specifically seeking views on the practical

---

<sup>89</sup> Jefferson, A., Cranfield University, '[The Feasibility of Maintaining Regional Airline Access to Congested European Airports](#)', (1997)

<sup>90</sup> Jefferson, A., Cranfield University, '[The Feasibility of Maintaining Regional Airline Access to Congested European Airports](#)', (1997)

implementation of ring-fencing but on the principle of ring-fencing slots for certain purposes. However, key elements of the suggestion put forward by CEPA are provided below for illustrative purposes only:

- A set percentage of new slots reserved for domestic connections.
- Each day would be split into three periods (pre-09:00, 09:00 to 17:00 and post-17:00), with a set percentage of slots in each period reserved for domestic connections, so that there is adequate connectivity throughout the day.
- Any request by an airline to run a domestic connection would be allocated a slot from the ring-fenced slots, provided i) there are fewer than three rotations to that destination on that day; or ii) there is only one airline serving that route.
- If there are not enough requests to allocate the ring-fenced slots, then the remaining slots would be put into the slot pool so that slot utilisation is maximised.
- Slots allocated from the domestic pool will be subject to restrictions on how they can be used. These restrictions will apply indefinitely, or until slots are returned to the pool.
- For domestic slots that are handed back or lost under the 80:20 rule, the Government would engage with airlines to consider whether any would be willing to use the slot for a new service to the same destination (with the Government determining whether it was willing to consider a subsidy). If no airlines were willing to run a service to that destination, the Government would then engage with airlines to consider whether they would be willing to run any domestic service using the slot. If this were also unsuccessful, the slot would be returned to the pool and allocated under the condition that, if another airline wishes to start a new domestic service in future seasons, it would have access to such a slot.

3.28 As noted in the Impact Assessment, there are both potential benefits and costs to ring-fencing slots for domestic connections, including environmental benefits and costs. There is potential for an environmental benefit if slots that could otherwise have been used for long distance international connections are used instead for domestic connections. Domestic flights typically result in lower noise levels, climate change effects and local air pollutants. The costs of ring-fencing slots for domestic connections could include potential indirect environmental costs if more flights are available for domestic connections, and this causes carbon emission-increasing displacement effects in the economy, (e.g., if more people travel across the UK using flights rather than trains, and more CO<sub>2</sub> is emitted for the same route from aeroplanes vs trains). At present, there is limited evidence on the potential benefits and costs of ring-fencing slots for domestic connections and how it might work operationally. We would welcome views and any evidence on the potential impact ring-fencing of slots for domestic connections might have.

3.29 The Government's work to date has focussed on the potential for using some new slots to support better links between different parts of the UK to support its objectives in relation to levelling up and union connectivity. However, there may be other objectives which could be supported by ring-fencing. The Government would welcome views on whether there are other objectives which could be supported through ring-fencing a proportion of new slots and the reasons for this. Any ringfencing would need to be consistent with the Government's obligations to ensure a fair and equal opportunity to compete.

## Consultation questions

44. Do you agree or disagree that it would be appropriate to ring-fence a proportion of new slots for domestic connectivity purposes?

45. For what other specific purposes do you think that a proportion of slots should be ring-fenced when there is a release of new slots and why?

46. What views, if any, do you have on the environmental impacts, including achievement of net zero, of the proposal to ring-fence a proportion of slots for domestic connections?

## 4. A more dynamic slot system

At the very heart of the slot system is the principle of slot allocation based on Historic Rights. On one hand, Historic Rights have played a role in the growth and investment that has given the UK a thriving aviation sector with connections right across the globe. On the other hand, Historic Rights mean that at the busiest airports without new capacity, very few new slots are available for distribution from the slot pool. This scarcity of supply, combined with the associated impacts of losing slots, can reinforce certain behaviours that do not necessarily give rise to efficient allocation of slots, in the best interests of consumers.

Because Historic Rights allow airlines to keep their slots in perpetuity, as long as they meet the minimum usage threshold, it is likely that even if there is new slot capacity, this would be "filled up" very quickly and then remain static. A more fluid redistribution of slots could play a greater role in driving efficient use of airport capacity through the slot allocation system. However, for the system to be more dynamic, a new mechanism might be needed to make slots more available even without airport expansion. It is in this context that we are interested in views on the role of Historic Rights in slot allocation and whether an alternative approach might be adopted in relation to new slots if and when they become available. A more dynamic system, where slots change hands more regularly, could lead to better outcomes for passengers and businesses.

We recognise that further work will be needed to refine any new approach. Collaboration with international partners will also be necessary to ensure that any changes fit in with wider international guidelines. We would welcome suggestions for enhancing or adapting our reform proposal as well as alternative ways of achieving our aim of ensuring that there is greater dynamism, fluidity, and allocative efficiency in relation to slots at UK Level 3 airports. We would also be interested in comments on the management of any transition to make the implementation of any changes as smooth as possible.

### **Potential Reform Option**

#### 1. Fixed Duration Historic Rights

# 1. Fixed duration Historic Rights

## How it works now

- 4.1 The current Regulation provides that if a series of slots is used 80% of the time (the 80:20 rule) within a scheduling season the airline has a right to retain it for the next equivalent season (Historic Rights). This principle is applied at capacity constrained airports around the world and is well understood by airports and airlines. There are benefits to the current unlimited Historic Rights as they allow airlines to carry out long-term planning of their operations and make commitments and investments at airports. Historic Rights can give airlines the certainty to plan and invest, even where routes may have an up-front cost or take several years to establish themselves and become profitable. Having a high slot concentration at capacity constrained airports can allow airlines to build and exploit networks to the fullest extent, which benefits consumers through a more comprehensive timetable and access to wider variety of destinations.
- 4.2 However, where almost all slots at an airport are allocated on the basis of Historic Rights, this reduces the potential for competition as well as consideration of whether reallocation of slots would lead to more efficient use of capacity. This in turn could result in negative outcomes for passengers such as higher airline fares, lack of service innovation and route development.
- 4.3 The tables below set out how weekly slots have been allocated at Heathrow and Gatwick. More than 99% of the total weekly slots allocated at Heathrow in summer 2022 season were allocated on the basis of Historic Rights. Similarly, the proportion of slots allocated based on Historic Rights at Gatwick has increased over time and represented just over 98% of total allocated slots. The position has been unchanged for a number of years.



<b>Heathrow</b>	<b>S12</b>	<b>S13</b>	<b>S14</b>	<b>S15</b>	<b>S16</b>	<b>S17</b>	<b>S18</b>	<b>S19</b>	<b>S20</b>	<b>S21</b>	<b>S22</b>
Total slots per week	9489	9527	9537	9591	9615	9637	9645	9655	9665	9669	9915
<i>of which:</i>											
- Newly allocated slots	14	22	26	28	46	16	36	26	16	4	16
- Historic slots	9475	9505	9511	9563	9569	9621	9609	9629	9649	9665	9899
<i>% of total</i>											
- Newly allocated slots	<b>0.1%</b>	<b>0.2%</b>	<b>0.3%</b>	<b>0.3%</b>	<b>0.5%</b>	<b>0.2%</b>	<b>0.4%</b>	<b>0.3%</b>	<b>0.2%</b>	<b>0.0%</b>	<b>0.2%</b>
- Historic slots	99.9%	99.8%	99.7%	99.7%	99.5%	99.8%	99.6%	99.7%	99.8%	100.0%	99.8%

Source: DfT analysis based on data provided by ACL 31 January 2022

Note: data relates to week 23 for LHR

<b>Gatwick</b>	<b>S12</b>	<b>S13</b>	<b>S14</b>	<b>S15</b>	<b>S16</b>	<b>S17</b>	<b>S18</b>	<b>S19</b>	<b>S20</b>	<b>S21</b>	<b>S22</b>
Total slots per week	6207	5998	6312	6345	6487	6522	6627	6601	6790	6747	6715
<i>of which:</i>											
- Newly allocated slots	722	544	600	426	467	241	225	215	353	135	121
- Historic slots	5485	5454	5712	5919	6020	6281	6402	6386	6437	6612	6594
<i>% of total</i>											
- Newly allocated slots	<b>11.6%</b>	<b>9.1%</b>	<b>9.5%</b>	<b>6.7%</b>	<b>7.2%</b>	<b>3.7%</b>	<b>3.4%</b>	<b>3.3%</b>	<b>5.2%</b>	<b>2.0%</b>	<b>1.8%</b>
- Historic slots	88.4%	90.9%	90.5%	93.3%	92.8%	96.3%	96.6%	96.7%	94.8%	98.0%	98.2%

Source: DfT analysis based on data provided by ACL 31 January 2022

Note: data relates to week 21 for LGW

- 4.4 Looking across all Level 3 airports, slots allocated through Historic Rights account for 92% of the UK's total slots.<sup>91</sup> The primary allocation criterion based on Historic Rights means that slots are being granted to airlines due to their historic presence at an airport rather than based on their ability to efficiently use that slot to provide the best service (in terms of time, route, etc) and at the best price to customers. Slots are also not necessarily being allocated by reference to an airline's contribution to the efficiency of, or investment in, the relevant airport. This could prevent the most efficient use of existing airport slot capacity as there is no opportunity either for the market to allocate slots more efficiently or for the coordinator to consider whether the slots could be better utilised by a different airline. Due to the high proportion of slots being allocated on Historic Rights basis there are fewer opportunities for new entrant airlines to gain slots to start operations at an airport or for existing airlines of all sizes to gain additional slots to grow their operations.
- 4.5 Historic Rights effectively held in perpetuity have contributed to slots being treated as assets and airlines are generally reluctant to hand them back, even when they are no longer fully using them. As has been discussed elsewhere in this document, currently the secondary trading market does not sufficiently correct for this and may compound the lack of transparency and access to slots. At highly congested airports, the difficulty in acquiring slots make airlines reluctant to forgo a favourable slot as they know that it could take them years or even decades to get a similar slot in the future. The effect of this is to constrain normal competitive forces, which might otherwise be expected to drive efficiency and respond to customer needs. This makes the slot allocation system less dynamic as it limits slot churn as well as the possibility of slots being moved from one airline to another even if this could result in the slot being used more – e.g. for a service in greater demand from passengers.
- 4.6 As has been widely reported in the media, slots can change hands for tens of millions of pounds, so they are not only a scarce resource also a valuable asset. In recent

<sup>91</sup> DfT analysis of ACL data.

years, at the busiest airports, slots have generally only changed hands in significant numbers during the merger, acquisition or insolvency of an airline. With limited slots being made available for trade, secondary trading is unlikely to provide a significant volume of slot movement. This means that it is difficult for both incumbents and new entrants or new airlines to acquire slots they may need to be able to innovate or build on their existing offer to consumers and businesses. The extent to which the static nature of UK slots affects passenger outcomes is difficult to quantify. The UK aviation sector scores well in terms of global connectivity and fare competitiveness despite higher levels of passenger taxes and airport charges. However, with passenger demand expected to grow in the long term and allocation of slots at Level 3 airports being largely predetermined by Historic Rights, even with secondary trading there is little room for market forces to have an impact on the slot allocation system in the best interests of consumers.

### What could change?

- 4.7 The Government believes that without any change to Historic Rights, we will find the static nature of the current slot allocation system continuing after the initial allocation of any new slots. There simply are no avenues in the current system to make slots available on regular basis, and continuous airport expansion to enable a regular release of new slots is not a viable alternative.
- 4.8 Our current position is that we do not propose to make changes to the Historic Rights of airlines in respect of existing slots that they hold. However, for more slots to become available on a regular basis within existing capacity, one option is to change the application of Historic Rights for new slots only. We consider 'new' slots in this context to be slots that result from new airport slot capacity (through increase in an airport's capacity) or slots being returned to the pool. We are proposing that for these new slots **Historic Rights would be limited to a fixed duration, after which slots would be returned to the pool for reallocation**. Our initial view is that a set duration for Historic Rights of 15 years might be appropriate.
- 4.9 Under this option, there would be no automatic guarantee that airlines would keep the slots they had in one fixed duration Historic Right period for the next fixed duration Historic Right period. For reallocation of slots that are within their Historic Right period, the coordinator would be expected to use the allocation criteria in place at the time. For example, the 80:20 rule would continue to apply during the fixed duration Historic Right period, meaning that an airline could still lose a slot if it was not using it. Airlines would continue to be able to trade their slots, but the fixed duration Historic Right period would not change when a slot is traded. This means that for instance if a slot was traded five years into the 15-year Historic Right period, the airline acquiring the slot would only be able to use it for 10 years.
- 4.10 At the end of the fixed duration Historic Right period, the slots would return to the slot pool for allocation for a new period. This should lead to a regular flow of slots being available for allocation from the pool therefore the criteria for allocation of slots for a fixed duration Historic Right period will be critical to functioning of the system. The criteria or process for allocation of slots for a fixed duration Historic Right period would be subject to further discussion and consultation and would be confirmed well

before the implementation of this option. Any changes to criteria or process following the implementation of fixed duration Historic Rights would also be subject to consultation. Whatever the final criteria or process may be for allocation of slots for a fixed duration Historic Right period, they will not include the automatic right for an airline to retain its slots based on precedence of historic use.

4.11 Allocating new slots with historic rights lasting for a fixed duration could enable a regular cycle of slots becoming available. However, because this would only apply to certain new slots, it would create a different category of slots, with airlines at an airport potentially holding some slots with full Historic Rights and some slots with time-limited Historic Rights.

4.12 If fixed duration Historic Rights for new slots were introduced, the Government's provisional view is that the default position would be that this would apply across all new slots that become available at Level 3 airports. However, given that operations across Level 3 airports are not uniform, there are potentially a number of alternative ways that fixed duration Historic Rights might be implemented. This could include applying fixed duration Historic Rights to:

A) all new slots only when there is release of new slot capacity;

B) only a proportion of new slots when there is release of new slot capacity, with the remainder of new slots continuing to attract Historic Rights in the same way as they do currently; or

C) new slots at a specific airport only when that airport opts to limit Historic Rights, subject to approval by Secretary of State. The Government recognises that, should it proceed with changes to how Historic Rights work, this would be a significant change to how the slot allocation system operates currently. We therefore envisage that period of notice will be given prior to implementation of such a change in order to enable industry to plan their operations and adjust to the changes.

## Consultation questions

47. Do you agree or disagree that changes to the current system of historic rights should be considered?

48. Would you agree or disagree that 15 years be an appropriate time for a fixed duration for historic rights?

49. Do you agree that a separate set of criteria or process should be established which slots would be subject to for re-allocation at end of a fixed duration Historic Right period?

50. If fixed duration to historic rights is implemented, would you prefer that it should be applied to:

A) all new slots when there is release of new slot capacity?

B) a proportion of new slots when there is release of new slot capacity?

C) applied to new slots at a specific airport only when that airport opts to limit historic rights?

D) in another way?

## 5. Additional consultation questions

51. What, if any, other comments do you have regarding reform of the slot allocation system?

## Glossary of terms

<b>ACL</b>	Airport Coordination Limited the independent slot coordinator in the UK
<b>ATMs</b>	Air Transport Movements
<b>ATMUA</b>	the Air Traffic Management and Unmanned Aircraft Act 2021
<b>ANPS</b>	Airports National Policy Statement
<b>CAA</b>	the Civil Aviation Authority is the statutory corporation which oversees and regulates all aspects of civil aviation in the UK
<b>CEPA</b>	Cambridge Economic Policy Associates Limited is an economics, finance, competition, and regulation advisory firm which was commissioned by DfT to create a policy design report which assessed four 'packages' of slot reform against the objectives of efficiency and domestic connectivity, as well as on their practical deliverability
<b>CMA</b>	the Competition and Markets Authority. The competition regulator responsible for reducing anti-competitive activities
<b>DCO</b>	A DCO is an Order for Development Consent is, in effect, planning permission for Nationally Significant Infrastructure Projects (NSIPs)
<b>Grandfather Rights</b>	also known as 'Historic Rights' these are the control that airlines exert over slots in perpetuity if they abide by the 80:20 rule
<b>Historic Rights</b>	also known as 'Grandfather Rights' these are the control that airlines exert over slots in perpetuity if they abide by the 80:20 rule
<b>Incumbent airlines</b>	airlines with existing airport slot holdings
<b>IATA</b>	International Air Transport Association is a global trade association for airlines, representing 290 airlines some 83% of total air traffic. IATA supports airline activity and helps formulate industry policy and standards
<b>JNU</b>	Justified non-utilisation of slots
<b>MBU</b>	Making Best Use of Existing Runways
<b>MPPA</b>	Million Passengers Per Annum
<b>New entrant rule</b>	Regulation that requires 50% of available slots to be made available to new entrants
<b>Oxera</b>	an economics and finance consultancy which was commissioned by DfT to create a behavioural experiment which involved a lab-based simulation comparing the status quo of slot allocation with different allocation methods
<b>Slot</b>	right granted by an airport owner which allows the slot holder to schedule a landing or departure during a specific time period
<b>Slot lease</b>	a permanent trade with a contract stipulating that the slot is returned after a certain period of time
<b>Slot trade</b>	can be both permanent and temporary trades. In a permanent trade of slots, one airline sells all or some of its slots to another airline on permanent basis. Temporary trading of slots is known as slot leasing
<b>Slot series</b>	at least five slots having been requested for the same time on the same day of the week regularly in the same scheduling period and allocated in that way or, if that is not possible, allocated at approximately the same time
<b>WASB</b>	Worldwide Airport Slot Board. Membership of the WASB is of an equal number of airlines, airports and slot coordinators. The WASB meets regularly to review and update

	the WASG to ensure that the guidelines remain current with industry and regulatory changes
<b>WWACG</b>	Worldwide Airport Coordinators Group is an international association representing officially appointed airport coordinators and schedules facilitators around the world
<b>WASG</b>	Worldwide Airport Slot Guidelines provide international air transport with a set of universal standards for the governing of slots at slot coordinated airports (Level 3 airports) and of the planned operations at facilitated airports (Level 2 airports)

## Data sources used in figures and analysis

Throughout this consultation document, data from various sources has been used to provide context and analysis. This annex provides additional information on key data sources used and any associated quality considerations.

A data source has been included if meeting one (or more) of the following criteria:

- it is frequently referenced
- it has been used as the basis for bespoke or more complex analysis
- supplementary methodological information is not already documented elsewhere

References for data sources which do not meet these criteria are provided as footnotes within the relevant section of the consultation document.

### Civil Aviation Authority (CAA) UK airport data

CAA UK airport data has been used to provide information on historical trends in flight and passenger numbers and air routes.

UK airport data is reported in returns submitted to the CAA by airports or airport operators. The CAA validates this data, but no warranty is given as to its accuracy, integrity or reliability.

In this document, figures are derived from a version of UK airport data held by DfT. The underlying dataset held by DfT is the same dataset used to produce the published CAA airport statistics, however due to differences in data processing methods, figures may vary slightly between the two versions.

Further information is available from the [airport data page of the CAA website](#).

### Civil Aviation Authority (CAA) UK airport load factor data

CAA UK airport load factor data has been used to provide information on historical trends in the proportion of 'ghost flights' operating at UK airports.

UK airport load data is calculated from data on individual air transport movements reported in returns submitted to the CAA by airports or airport operators. The CAA validates this data, but no warranty is given as to its accuracy, integrity or reliability.



In this document, figures are derived from a version of UK airport data held by DfT. The underlying dataset held by DfT is the same dataset used to produce the published CAA airport load factor statistics, however due to differences in data processing methods, figures may vary slightly between the two versions.

Some flights are excluded when calculating load factor statistics. Further information on exclusions is available in the data notes on the [load factor data page of the CAA website](#).

### **OAG airline schedules data**

OAG airline schedules data has been used to provide information on the proportion of scheduled flight movements operated by the largest airline at selected UK and international airports.

This analysis was carried out by OAG and provided to DfT for the purposes of this consultation document. Data was extracted from the [OAG Analyser](#) product (version 2.0.1) in October 2022 and is copyright OAG Aviation Worldwide Ltd (all rights reserved).

This OAG data includes passenger flights planned for operation as part of airlines' schedules and reported to OAG. Not all of these flights will necessarily have operated, as late-notice cancellations do occur.

Further information on OAG airline schedules data is available from the [airline schedules data page of the OAG website](#).

### **Airport Coordination Limited (ACL) slot data**

ACL slot data has been used to provide information on slot allocation, slot use and slot trading.

This data was collected by ACL at the relevant point of the formal International Air Transport Association (IATA) coordination cycle using IATA Standard Schedules Information Manual (SSIM) format.

ACL's role is to ensure compliance with slot regulations and ACL makes data checks to facilitate this, though data accuracy is dependent on what airlines have submitted. The outcome of the slot process, summarised reports and executed slot exchange forms are available for the aviation industry to scrutinise. ACL is not aware of any copyright issues concerning this data.

Further information and summarised reports are available from the [ACL website](#).

## Consultation principles

The consultation is being conducted in line with the Government's key consultation principles which are listed below. Further information is available at <https://www.gov.uk/government/publications/consultation-principles-guidance>

If you have any comments about the consultation process, please contact:

Consultation Co-ordinator  
Department for Transport  
Zone 1/29 Great Minster House  
London SW1P 4DR  
Email [consultation@dft.gsi.gov.uk](mailto:consultation@dft.gsi.gov.uk)

# Annex A: Full list of consultation questions

## Personal details

What is your name?

What is your email?

[For organisations only] Your organisation's name is?

[For organisations only] Your organisation is best described as?

## Proposals

### 1. A more efficient slot system

#### 1. Removing barriers to entry including a re-defined new entrant rule

1. Do you agree that Secretary of State should have the power to make changes to the definition of a new entrant when appropriate for the UK or an individual airport, or to reflect the latest WASG guidance? Do you have any comments on the circumstances in which this power should be available or the grounds on which it should be exercisable?

2. What, if any, additional criteria, beyond the limits on the number and proportion of slots held, do you think should be included in the definition of a new entrant?

3. Do you support or oppose the removal of the definition of an airport system and all references to it from the regulation?

#### 2. Restrictions on newly allocated slots

4. Do you agree or disagree that restrictions on **re-routing, exchanging and transferring of slots** should apply to new slots allocated to incumbents?

5. Do you agree or disagree that the duration of these restrictions should be extended from 2 to 4 equivalent seasons? What, in your view, if any, would be a more appropriate duration for the restrictions and why?

### 3. Removal of re-time priority

6. Do you agree or disagree that re-time priority for slots should be removed in accordance with WASG??
7. What do you consider are the main positive and negative operational implications of removing the re-time priority for slots?

### 4. Permanent powers to improve resilience

8. Do you agree or disagree that the Secretary of State should have permanent powers to make regulations about slot alleviation in response to a crisis? In what circumstances should these powers be available, and in what circumstances should they be exercisable?
9. Are there additional powers to those suggested in paragraph 1.37 that you think should be available to the Secretary of State in making bespoke regulations in exceptional circumstances?

### 5. Increase to slot usage ratio

10. Do you agree or disagree that a higher usage ratio would lead to more efficient use of existing airport slot capacity?
11. What do you consider would be the main positive and negative operational implications of a higher slot usage ratio?
12. What would you consider to be an appropriate higher alternative usage ratio to 80:20?
13. Do you agree or disagree that airports should be given the option to decide if to apply a higher usage ratio?
14. What views, if any, do you have on the environmental impacts, including achievement of net zero, of the proposal to increase the slot usage ratio?

## 2. A more transparent slot system

### 1. Strengthened coordination committee role

15. Do you agree or disagree that the coordination committee should act as a focal point for scrutiny of decision-making in relation to slot allocation at individual airports?
16. In what other ways, if at all, do you consider the role of the coordination committee should be strengthened?
17. Do you agree or disagree that there should be a requirement for every coordination

committee to have an independent chair?

18. Do you agree or disagree that the coordination committee should be given clearer responsibility for ensuring complaints and appeals of slot decisions reach a conclusion?

## **2. Increased guidance on secondary criteria**

19. Do you agree or disagree that the Secretary of State should have the power to add criteria to and remove criteria from the list of secondary criteria?

20. What additional secondary criteria, if any, do you consider could be beneficial or detrimental to the slot allocation process?

21. Do you agree or disagree that the Secretary of State should have the power to give guidance to the coordinator on the prioritisation of secondary criteria?

## **3. Power to direct the UK slot coordinator**

22. Do you agree or disagree that the Secretary of State should have the power to direct the coordinator?

23. What do you consider, if any, are the main main positive and negative operational implications of a power to direct the coordinator?

24. In what scenarios, if any, do you consider that a direction from the Secretary of State would not be appropriate or necessary?

## **4. A slot register, a specified platform for all UK slot trades and strengthened oversight of secondary trading**

25. Do you agree or disagree that there should be a public slot register which records who holds the Historic Rights to a slot, who operates each slot and the duration of any slot lease?

26. What, if any, other information do you think that it would be useful to record on a public slot register?

27. Do you agree or disagree that all secondary trading should be advertised and carried out through a central slot trading platform?

28. Do you agree or disagree that requiring use of such a platform would increase transparency?

29. What do you consider, if any, would be the benefits and disadvantages of using a central slot trading platform for all secondary trading of slots?

30. Do you agree or disagree with this platform being run by ACL?

31. Do you agree or disagree that further oversight of the secondary trading market is necessary to protect 'fair and open' competition?
32. What, in your view, if any, would be an appropriate threshold for when review and/or approval would automatically apply to a slot trade?
33. Do you agree or disagree that further oversight of secondary trades of slots should only apply at airports with substantial market power?

## 5. Limit on slot leasing

34. Do you agree or disagree that slot leasing should be limited to a set period of time?
35. Do you agree or disagree that a time limit on slot leasing would be effective in encouraging airlines to return slots that they cannot use to the pool?
36. What do you think would be the appropriate time period for a limit on slot leasing?
37. Do you agree or disagree that airlines that no longer operate at an airport should be subject to a different time limit on slot leasing than airlines currently operating at the airport?
38. Why and what difference would you like to have implemented?
39. What do you consider are the main positive and negative operational implications of limiting slot leasing to a set period?

## 3. Allocation of new slots

### 1. Auction of new slots

40. How strongly do you agree or disagree that auctioning would be an effective means of allocating newly created slot capacity?
41. Do you consider any of the auction designs set out in Annex B, would be suitable for auctioning slots?
42. What should revenue raised through auctions be used for (who should be the beneficiaries)?
43. What do you consider would be the main positive or negative impacts of slot auctioning on market entry, competition and innovation?

## 2. Ring-fencing of new slots for certain purposes

44. Do you agree or disagree that it would be appropriate to ring-fence a proportion of new slots for domestic connectivity purposes?

45. For what other specific purposes do you think that a proportion of slots should be ring-fenced when there is a release of new slots and why?

46. What views, if any, do you have on the environmental impacts, including achievement of net zero, of the proposal to ring-fence a proportion of slots for domestic connections?

## 4. A more dynamic slot system

### 1. Fixed duration Historic Rights

47. Do you agree or disagree that changes to the current system of historic rights should be considered?

48. Would you agree or disagree that 15 years be an appropriate time for a fixed duration for historic rights?

49. Do you agree that a separate set of criteria or process should be established which slots would be subject to for re-allocation at end of a fixed duration Historic Right period?

50. If fixed duration to historic rights is implemented, would you prefer that it should be applied to:

- A) all new slots when there is release of new slot capacity?
- B) a proportion of new slots when there is release of new slot capacity?
- C) applied to new slots at a specific airport only when that airport opts to limit historic rights?
- D) in another way?

## 5. Additional consultation questions

51. What, if any, other comments do you have regarding reform of the slot allocation system?

# Annex B: Auction design

*This annex sets out further detail on how slot auctions might work in practice. It complements the options set out in Chapter 3: Allocation of new slot capacity. As stated in Chapter 3, the Government is considering auctions for slot allocation only for future release of new airport capacity and the auction designs below are considered in this context.*

This annex:

- Describes the objectives of a slot auction;
- Describes key design features relevant to auction design;
- Describes potential auction designs that could be used to allocate slots, and;
- Draws on the work commissioned by DfT following Aviation 2050 carried out by CEPA and Oxera exploring auction design for airport slots.<sup>1</sup>

The [CEPA report](#) and [Oxera report](#), providing full details of their consideration of slot auctions, have been published alongside the Airport slot reform consultation.

## 1. Aims of a Slot Auction

**The Government's key aim for a slot auction is for it to be an efficient alternative to criteria-based allocation of new slots.** An auction should lead to the market, through the auction process, setting the value for a slot so slots would be used by the carrier able to make the best use of them. This should improve societal welfare. Auctions have been used by Government as an allocation mechanism several times in the past, including to allocate wireless spectrum licenses on multiple occasions by Ofcom in the UK.<sup>2</sup>

**An efficient outcome in the market for which a slot is auctioned might be different from an efficient outcome in a downstream market related to slots, such as flights.** For example, an efficient outcome in an auction might be for one or a few airlines to buy all available slots, but this might lead to inefficient outcomes in the market for flights, with limited competition. This could lead to potentially negative outcomes for consumers and societal welfare.

**To ensure efficiency in the downstream market, it is important to include caps or set-aside licenses in the auction design.** An auction design must strike a balance between achieving efficiency in the market for slots and in the end consumer market - the flights market.<sup>3</sup> Caps and set-aside licenses limit the total slots any one airline can obtain from the auction and thereby mitigate the distribution of slots from becoming too

---

<sup>1</sup> OXERA, Slot allocation at an expanded Heathrow: Behavioural experiment, October 2019; CEPA, Slot Allocation at Heathrow in the context of runway expansion, September 2019.

<sup>2</sup> Palacios-Huerta, Parkes and Steinberg, (2022), 'Combinatorial Auctions in Practice', pp.7-13 and pp.35-55.

<sup>3</sup> This can be thought of as a type of 'constrained efficiency'.



concentrated. This subsequently facilitates competition in the downstream flights market which should benefit consumers. Previous auctions have also made use of caps<sup>4</sup>, for example the sale of 800 MHz and 2.6 GHz spectrum in the UK by Ofcom in 2013.<sup>5</sup>

**Two important sub-aims of auction design that facilitate an efficient outcome are truthful bidding and price discovery:**

*Truthful bidding:* Truthful bidding means that a bidder submits a bid for what it believes is the true value of the good. This should help lead to an efficient outcome in the market of the good being auctioned. Whilst complete truthfulness is very difficult to achieve in most auction mechanisms, designs that facilitate bidding closer to true values or provide more robustness against strategic bidding are desirable.<sup>6</sup> Whilst many aspects of auction design are relevant to encouraging truthful bidding, appropriate Pricing Rules and Activity Rules (in dynamic auctions) are particularly important (see Section 2 Auction Design below).

*Price Discovery:* Price discovery helps bidders assess the value of a good as part of the auction process. This is particularly important when bidders value the type of good in a certain way. Bidders may have independent values for a good ('private values' auctions), the same 'true' but unknown value for a good, but different estimates of its value<sup>7</sup> ('common value' auctions), or some combination of the two ('interdependent value' auctions), which is often the case in real-world auctions. Airport slots are considered to have both common- and private-value elements.

To take a simplified example, if two airlines with broadly the same type of business model were competing for one slot to use on the same route targeting the same customers, their costs and expected revenues may be very similar. This could be, for example, two low-cost carriers targeting leisure passengers for one route from Heathrow to Manchester. Both airlines might generate the same revenue in the future with these slots, but they might have different estimates of what that future revenue is. However, if two airlines competing for a slot have very different operating models and are intending to fly to different destinations, they may value the slot differently and be said to have 'private values'. This could be, for example, hub and spoke vs point-to-point carriers, where one carrier is intending to fly from the UK to an Asian destination and the other from the UK to a European destination. It is likely that slot valuation will contain private and common value elements (and it is also worth noting the information required to value a slot with near 100% accuracy is never available to airlines).

Whether bidders have private, common or interdependent values for a good has implications for auction design. Some auction designs, such as the Vickrey Clarke Groves mechanism (see below), work particularly well when all bidders have private values, but less well when bidders have interdependent values. For example, in these cases<sup>8</sup>, they may suffer from an issue referred to as the *Winners' Curse*. Suppose there is a common-value component to airlines' valuation of slots but airlines may be uncertain as to what this is. This may lead airlines to realise they have overpaid (compared to the 'true objective value') for slots they have won at the auction's resolution, when more information about other airlines' bids has typically become available. This undesirable overpayment means

---

<sup>4</sup> P.Cramton, (2013), 'Spectrum Auction Design', *Review of Industrial Organization*, 42, pp.161-90.

<sup>5</sup> Palacios-Huerta, Parkes and Steinberg, (2022), 'Combinatorial Auctions in Practice', p.51.

<sup>6</sup> One exception is the Vickrey-Clarke-Groves mechanism when bidders have 'private values'.

<sup>7</sup> But receive different signals about the item's value.

<sup>8</sup> Or just 'common values'.

an airline has suffered the *Winners' Curse*<sup>9</sup>, which could mean an efficient outcome is not achieved. A further response to the *Winners' Curse* includes “bid shading”, where bidders reduce their ‘true’ value to reduce the risk of overpayment. To avoid such issues it is important that airlines have as much information available as possible before making ‘final bids’; in other words, it is important they can *discover the ‘real’ price of, or value they attribute to*, slots before making final bids – this is known as price discovery. There are strong arguments for using dynamic auction designs to facilitate price discovery which involve having multiple bidding rounds, where each round reveals information to bidders.<sup>10</sup>

## 2. Auction Design

**The starting point for designing an auction is to determine the key characteristics of the product being sold (the ‘product design’) and how that product can be bid for (the ‘bid language’).** For airport slots, a vital characteristic is that a departure slot without an arrival slot is not acceptable to an airline – they need both slots (see more detail in Section 4 below).<sup>11</sup> There may also be more complex airline preferences where bidders have synergistic values for certain series of slot combinations across the season. The need to obtain slots together, as *packages*, is therefore critical to achieve an efficient allocation when designing auctions for allocating airport slots. On how slots can be sold, questions include whether slots are to be sold at one airport or many, whether airlines could bid for slots on just a particular day and time of a ‘typical week’, or in a way as to accommodate more complex flight requests.<sup>12</sup> These complexities could be hard to bid on and lead to computationally hard problems and difficult pricing decisions for using auctions for slot allocation. Therefore, the bidding language needs to be designed carefully to reflect complex preferences whilst not being too intricate and computationally demanding.

**Once this is determined different types of auctions can be considered, which often differ on the following key aspects: (i) number of bidding rounds, and; (ii) bidding transparency.** These choices also have implications on truthful bidding and price discovery, and for the efficiency of an auction. Please see Table 1 for further details.

---

<sup>9</sup> Airlines might then modify their behaviour to avoid the *Winners' Curse*, for example by “bid shading”, where bidders reduce their ‘true’ value to reduce the risk of overpayment. This can have further undesirable implications for efficiency.

<sup>10</sup> The term ‘linkage principle’ is sometimes used to describe airlines calibrating their bids based on information about others’ bids in dynamic auctions. In contrast in one-round sealed bid auctions, whilst possibly simpler to organize, there is a risk that bidders have very different expectations about the value of a slot and are caught by surprise after the auction.

<sup>11</sup> On technical economic terms, slots are complements.

<sup>12</sup> For example, a bid language which allows airlines to specify they need slots in between, say 8-11pm in week three of the season, will be more complex than one which just allows airlines to bid for slots between 9-10am in each week of the season. For more detail on bid languages and airport slots, see M.Bichler et al, (2023), ‘On Airport Time Slot Auctions: A Market Design Complying with the IATA Scheduling Guidelines’, *Transportation Science*, 57, (1), pp.27-51.

Table 1: Bidding Rounds and Bidding Transparency in Auction Design

Aspects	Description	'Typical' Properties
<b>Bidding Rounds</b>  Static vs Dynamic	<ul style="list-style-type: none"> <li>Number of rounds in auction.<sup>13</sup></li> <li>Static Auctions – one round.</li> <li>Dynamic Auctions – multiple rounds.</li> </ul>	<ul style="list-style-type: none"> <li>Dynamic auctions facilitate price discovery as prices often revealed in each round.</li> <li>Collusion potentially easier in dynamic auctions</li> </ul>
<b>Bidding Transparency</b>  Open vs Closed (vs Clock)	<ul style="list-style-type: none"> <li>Whether bidders know value of others' bids (open bidding) or not (closed bidding).</li> <li>(In some types of auction, bid quantities are revealed rather than price: in these auctions, bidders usually know aggregate quantity demanded at given prices)</li> </ul>	<ul style="list-style-type: none"> <li>Open auctions facilitate price discovery by revealing information</li> <li>Sealed-Bid auctions increase bidder entry as greater possibility of 'weak' bidders winning. Some empirical evidence that increased bidder entry increases revenues.</li> </ul>

**Another important part of auction design, albeit not part of all auctions, are activity rules, which reduce incentives for strategic bidding and facilitate price discovery.**

These are important in dynamic auctions which aid price discovery through valuations / quantities being revealed during each auction round. This advantage means they are also prone to bidders engaging in strategic behaviour known as 'sniping'. This involves not bidding in earlier rounds and only bidding in later or final rounds, prohibiting disclosure of valuations to other participants whilst gaining from other's disclosures and hence partially inhibiting price discovery. For this reason, many auctions have introduced Activity Rules, which typically require participants to bid in all or most rounds of the auction.

**The pricing rule used by auctions is another important component of the design.**

Some auctions use a first price rule, where the highest bidder obtains the good at the price they bid, others use a second-pricing rule where the highest bidder obtains the highest good but at the price bid by the second highest bidder, and others use more complex pricing rules, such as core-selecting payment rules. These rules have implications for the outcomes and efficiency of the auction, and the choice of rule is dependent on the context.

### 3. General Types of Auction

**There are several different types of auction designs that may also be relevant for airport slot allocation.** The auction types described below represent general types of auctions which have been modified applied successfully in markets, including to allocate

<sup>13</sup> A round is a distinct period of time in which bids are submitted.

spectrum and wholesale electricity (amongst other uses).<sup>14</sup> They are detailed here as possible candidates for allocating airport slots via auction. Section 4, *How might these auction designs apply to slots: CEPA and Oxera reports* below describes work which has explored how two of these designs could be applied to the airport slot market, but this is not intended to be an exhaustive list, and different design options may emerge.

**The potentially relevant auction designs in Table 2 below differ in terms of the design aspects previously discussed.** They also differ in other (typically more granular) ways. This section and Table 2 describe at a high level how each auction works, and also give examples of where they have been used successfully.<sup>15</sup>

**The general types of auctions which could be appropriate for allocating airport slots are:**

1. **A sealed-bid combinatorial auction**, which involves closed bidding for an item or package in a single round. Different pricing rules could be used for sealed bid auctions: these could include first price rules, second price rules as used in the VCG mechanism, or core-selecting payment rules.
2. **A Combinatorial Clock Auction (CCA)**, which is a package auction consisting of 'stages', a clock auction and a single sealed bid supplementary stage, after which the winners of the auction are determined by computational optimization. In the clock round, bidders bid simultaneously for quantities of packages of items/lots at prices set by the auctioneer. These prices are known as 'clock' prices, because the auctioneer typically posts prices for each kind of good on a digital or analog 'clock'.<sup>16</sup> An Activity Rule is included and the aggregate demand for each good (at given prices) is made known. If demand exceeds supply for a given package, further rounds are held for such packages, until there is no demand for any package. In the supplementary round, bidders make simultaneous sealed-bid offers for packages unavailable in the clock round, allowing bidders to express preferences for untried packages. Finally, in the post-round 'allocation phase', an advanced computational algorithm uses bids submitted in both rounds to determine 'value-maximizing' prices (of the good) and assignment to bidders. This is sometimes referred to as a Winner Determination Problem (WDP). Bidders can only win a single package bid.
3. **A Combinatorial Multi-Round Ascending Auction (CMRA)**, which is a package auction consisting of a clock auction with novel variations. In the clock round, bidders bid simultaneously for quantities of packages set by the auctioneer and are also able to submit additional package bids at or below the clock prices. These additional bids are subject to an Activity Rule. The auction continues until there exists an optimal solution, for example a 'revenue-maximizing' allocation, in which exactly one bid from

---

<sup>14</sup> See Palacios-Huerta, Parkes and Steinberg, (2022), 'Combinatorial Auctions in Practice', for an extensive list of applications.

<sup>15</sup> For more detail on different types of applied auction, see M.Bichler and J.K.Goeree (eds.), (2017), *Handbook of Spectrum Auction Design*, Cambridge University Press, M.Bichler et al., (2014) "Spectrum auction design: simple auctions for complex sales", *Telecommunications Policy*, 38.7, pp.613-622, M. Bichler, (2018), A.Goetzendorff and J.K.Goeree, 'Synergistic Valuations and Efficiency in Spectrum Auctions', *Telecommunications Policy*, 42.1, pp.91-105.

<sup>16</sup> P.Milgrom, (2003), *Putting Auction Theory to Work*, pp.202 & 214.

every bidder is accepted. This is determined computationally.<sup>17</sup> This type of auction was pioneered by the Danish Energy Agency and consultancy DotEcon in the context of Danish spectrum auctions and is most appropriate when auctioning goods that are ‘complements’ (i.e., where items are more valuable as a package than the sum of their individual valuations). It is relatively new and has fewer real-world applications than other designs at the time of writing.

---

<sup>17</sup> For further details on the CMRA, see Kasberger, (2022), ‘The Combinatorial Multi-Round Ascending Auction’; UK 5G spectrum auctions.

Table 2: Potential Auction Designs for Allocating Airport Slots and examples of previous Public Sector applications

Auction Type	Number of Bidding Rounds	Pricing Rule	Bidding Transparency	Accommodate Package Bids	Examples of Previous Public Sector Applications <sup>18</sup>
Sealed-Bid	Single	1 <sup>st</sup> price	Closed	Yes	UK 412-414 MHz paired with 422-424 MHz Spectrum (2006) France 2.6 GHz Spectrum (2011) Norway 800, 900 and 1800 MHz Spectrum (2013)
Sealed-Bid	Single	Vickrey-Clarke-Groves (VCG)	Closed	Yes	Limited real-world applications but could be candidate for airport slot auctions, especially if using complex bid languages (beyond simple package bids)
Sealed-Bid	Single	Core-selecting	Closed	Yes	Portugal 3.4-3.6, 3.6-3.8 GHz Spectrum (2010) Ireland 26 GHz Spectrum (2018)  (Relatively limited real-world applications but could be candidate for airport slot auctions, especially if using complex bid languages (beyond simple package bids))
CCA	Multiple	Core-selecting	Open + Closed	Yes	Spain Wholesale Electricity (Spanish Capacity Auction) (2007-08) Germany Wholesale Electricity (E.ON Virtual Power Plant) (2010) UK 4G Spectrum Auction (2013) Australia Digital Dividend Spectrum Auction [700 MHz; 2.6 GHz] (2013) Canada 2500 MHz Spectrum Auction (2015) Mexico AWS Spectrum Auction [1.7, 2.1 Ghz] (2016) Ireland 3.6 GHz Band Spectrum (2017)
CMRA	Multiple	Clock Prices	Open	Yes	Denmark's 700, 900 and 2300 Mhz spectrum band auctions (2019)

<sup>18</sup> See Palacios-Huerta, Parkes and Steinberg, (2022), 'Combinatorial Auctions in Practice', pp.7-13 and pp.35-55 for a comprehensive list of applications of different auction designs in the public sector.

#### 4. How might these auction designs apply to slots: CEPA and Oxera Reports

As part of its work to consider the responses to the Aviation 2050 consultation, DfT commissioned CEPA and Oxera to explore allocating slots using auctions in the context of an expanded Heathrow. Their work is also relevant for auctions of slots for an increase in airport slot capacity, whether at Heathrow or any other airport. This section first provides a brief summary of CEPA's proposed auction designs with reference to the product design, bid language, bidding rounds, bidding transparency and pricing rules discussed in Section 2. The product design and bid language elements are common to both designs and so are detailed first, but the use of design aspects in Table 2 differ across the two auctions, and are considered in conjunction with the description of each. The section subsequently considers other important issues relating to auction design, and then discusses the auction design used by Oxera in their behavioural experiment.<sup>19</sup> Both reports are attached to this consultation and available to read in full.

##### *CEPA's Report*

**CEPA make some key points about product design and bid language which factor into both their proposed auctions designs for slots. These are:**

- *Product Design: the nature of slots and package bidding.* Expanding on the discussion in Section 2, CEPA suggest that a combinatorial or package bid auction design is critical if the value of one slot depends on whether or not an airline holds another slot (slots are 'complements') or if two slots are of equal use to an airline but the airline only needs to obtain one (slots are 'substitutes'). For example, they state that a particular take-off slot, such as a late morning slot, might only be useful if the airline could obtain an appropriate prior landing slot, such as an early morning landing slot 1-3 hours before (slots are 'complements'). Equally, they state an airline might be happy with a 9-9.20pm or a 9.20-9.40pm landing slot, but not both (slots are 'substitutes'). Combinatorial or package bid auctions allow airlines to 'package' such slots together to satisfy these conditions where necessary and hence CEPA's design allows airlines to explicitly (combinatorial auction) or implicitly (clock auction) bid for packages. Airlines can then bid different valuations for different slot packages.<sup>20</sup>
- *Bid Language: complexity of slot portfolio.* As described in Section 2, there are many different combinations of slots an airline could reasonably want to bid for. This leads to a trade-off between allowing an airline to express complex preferences whilst not making the auction over-complex and unwieldy.<sup>21</sup> CEPA have dealt with this in part by limiting the times for which slots can be bid to 20-minute intervals for all days of a calendar week.<sup>22</sup> This should help to mitigate difficult computational issues.

---

<sup>19</sup> It's worth noting that specific auction design aspects are not the primary focus on Oxera's paper, which focuses more on how to set up a behavioural experiment to simulate an auction and the implications of using auctions for slot allocation vis-à-vis other methods (Oxera's work is discussed in more detail in the accompanying Consultation IA).

<sup>20</sup> CEPA, *Slot Allocation at Heathrow in the context of runway expansion*, September 2019, pp. 88 & 96.

<sup>21</sup> In particular, in the combinatorial auction, if there are a very large numbers of items and bids, there may be computational issues with solving the Winner Determination Problem (see below). CEPA, *Slot Allocation at Heathrow in the context of runway expansion*, September 2019, pp. 89-90 & 98.

<sup>22</sup> CEPA, *Slot Allocation at Heathrow in the context of runway expansion*, September 2018, pp. 89-90 & 98.

**CEPA's first auction design is designated a 'combinatorial auction' and shares some features with the sealed-bid auction described above. In this auction:**

1. Airlines put together different packages of slots that they wish to bid for 30 months before the start of the season.
2. Airlines simultaneously submit sealed bids for all packages 24 months before the start of the season, and whether packages are additive or mutually exclusive.
3. A computerised auction algorithm solves a winner determination problem (WDP) - based on a variant of 2nd price bidding - to allocate packages of slots to airlines. Other capacity limits (e.g., terminal, stand) would form constraints within the WDP. A slot cap based on the number of slots an airline already held at Heathrow is included.

Table 3 summarizes the choice made regarding bidding rounds, bidding transparency, and pricing rules used in this auction. We expand on these below:

- *Pricing Rule:* Second price auctions for single items incentivize truthful bidding, but this cannot be directly applied to combinatorial auctions. Instead CEPA use a pricing rule that generalises a 2nd price approach to a combinatorial auction. The details of this are complex and more information is provided in Sections 4.5.3 and 5.3.3 of the CEPA report.
- *Sealed Bid, Single Round format:* this auction was based in part on work done for a proposed auction system for slots at airports in the New York area in the 2010s. One advantage of auctions with sealed bidding (typically single round) is that they can be less susceptible to stronger bidders (typically with a strong balance sheet) 'targeting' 'weaker' bidders to try and deny them items/slots.<sup>23</sup> CEPA suggests that the sealed bid nature of this design helps stop incumbent airlines specifically targeting new entrants or denying them slots.<sup>24</sup>

**CEPA's second auction design is designated a 'clock' auction and shares features with general clock auctions and the combinatorial clock auction described above. In this auction:**

1. 30 months before the start of the season, airlines prepare bids for quantities of runway slot leases (hereafter slots) to be held for 15 years.
2. Airlines bid simultaneously for quantities of slots at 'clock' prices set by the auctioneer 24 months before the start of the season. Bidders are told aggregate demand for slots at given clock prices at end of the round.
3. If demand for slots exceeds supply, another round is held with increased prices for slots with excess demand. A points-based Activity Rule is included.
4. Rounds continue until there is no excess demand for any slots and airlines win *all* of the slots it bid for in that round and pays that round's prices. A slot cap and reserve

---

<sup>23</sup> For example, in an open auction with multiple rounds, bidders are aware of each other's bids and so a stronger bidder can easily threaten to or practically outbid a weaker bidder relatively easily. This is harder in a sealed-bid auction where each player's bid is unknown, particularly if there is an incentive to bid-shade.

<sup>24</sup> CEPA, *Slot Allocation at Heathrow in the context of runway expansion*, September 2019, p.149.



prices are included. Winning all slots essentially means slots are treated as packages.

- 5. Post-auction coordination exercises are held 18 and 6 months before the start of the season, in which runway slots are matched with associated non-runway infrastructure. Between the end of the auction and the start of the season, airlines would be able to exchange and trade or slots.

Table 3 summarizes the choice made regarding bidding rounds, bidding transparency, and pricing rules used in this auction. We expand on some of these below:

- Open, Dynamic format: Airlines may be uncertain as to their precise valuation for a slot. As discussed in Table 1, an auction with multiple bidding rounds in which aggregate demand<sup>25</sup> for slots at a given round’s prices is revealed to bidders allows them to update their own valuations based on other’s valuations. This type of information revelation (price discovery) allows airlines to value their slots more accurately, hence reducing the impact of the *Winner’s Curse* and risk of overbidding.

Table 3: Key Design Aspects of CEPA’s Auction Designs

Auction Type	Number of Bidding Rounds	Bidding Transparency	Pricing Rule
‘Combinatorial’ - (Combinatorial Sealed Bid)	Single	Sealed	2nd Price Generalization
‘Clock’ – (Simple Combinatorial Clock Auction)	Multiple	Open (aggregate demand available)	Clock Prices

**CEPA’s paper also addresses some of the concerns regarding the use of auctions described in the chapter in the consultation document.**<sup>26</sup> This section outlines these issues and CEPA’s response as follows:

- *Inconsistency of the Slot Allocation Process:* Most airports use an administrative system for slot allocation and an auction system would have to be carefully designed to work together with this. CEPA state their concern that airlines would have to bid for slots before they knew which slots they had obtained at destination airports.<sup>27</sup> This could have significant impacts on efficiency, as there is a risk airlines do not obtain

<sup>25</sup> Only revealing aggregate demand also means an appropriate balance is struck between revealing information and preventing collusion.

<sup>26</sup> N.B. There are more potential complications / concerns with using auctions to allocate slots than can be discussed in this summary, but we include some significant ones here. For further details, please see CEPA, *Slot Allocation at Heathrow in the context of runway expansion*, September 2019.

<sup>27</sup> CEPA, *Slot Allocation at Heathrow in the context of runway expansion*, September 2019, pp. 158

requisite slots at destination airports and because the value bid for some slots might depend on (expectations) of the value of slots obtained elsewhere. For both their options, CEPA propose running an auction 24 months in advance of the start of the season, to give airlines sufficient time to obtain matching slots at other airports and conduct any secondary trading required.<sup>28</sup> Whilst they state that post-auction exchanges or secondary trading, including via a central exchange, could mitigate risks of not obtaining matching slots, they suggest this is unlikely to match the existing process in terms of efficiency. Alternatively, an auction could be run soon after the initial slot allocation at destination airports, though the latter option would mean little time for trading before the start of the season and very little time for planning the upcoming season's operations.<sup>29</sup>

- *Airlines with deep pockets buying up large amounts of slots:* There is concern that airlines with deep pockets could buy up large amounts of slots which could inhibit competition, either because they face fewer financing constraints than smaller firms and so can better finance high valuations, or for reason of increasing market power (and potentially bidding higher than 'objective' valuations to achieve this). CEPA propose mitigating attempts to increase market power and promote competition by using a slot cap (see Section 1), such that an airline's total number of slots does not exceed a certain threshold, for example 60% of all slots at Heathrow.<sup>30</sup> They acknowledge that the specific level proposed would be highly subjective and a final decision would likely be supported by some airlines and criticized by others, but also posit that judgments regarding market power in an administrative system are also likely to be subjective.<sup>31</sup> With regard to financing constraints, CEPA argues that there are reasons not to expect financing constraints to hamper newer airlines, because the values in relation to auctioned slots could be much lower than those for historic slot sales, due to a reduction in scarcity following expansion. In addition, CEPA also propose abandoning 'use-it-or-lose-it' rules in both designs (removing the minimum slot usage criteria), which could make it easier to use the value of a slot to raise financing against it.<sup>32</sup> CEPA acknowledge that it is harder to mitigate the issue of some airlines being subsidized by their state having an advantage relative to other airlines.<sup>33</sup>
- *Detrimental impacts of the administrative costs of auctions on airlines and airports:* CEPA argues that in both designs, the costs of administering auctions could impact airlines significantly, due to expenses of familiarising themselves with the auction design and formulating bidding strategies. However, this might impact larger airlines more as their bidding strategies are likely to be more complex than smaller airlines. CEPA argues this will impact the auction operator less, but that increased costs arise from the need to make sure airlines know and understand the process and for running the auction itself. They argue that the running of the auction should involve fewer costs for the combinatorial auction, which is likely to use automated software, than the clock auction, due to its multiple rounds. For the clock auction, they also highlight the costs involved in running the coordination exercise, but state that this would be less costly than such costs in the administrative system.<sup>34</sup>

---

<sup>28</sup> CEPA, *Slot Allocation at Heathrow in the context of runway expansion*, September 2019, pp. 89 & 98.

<sup>29</sup> CEPA, *Slot Allocation at Heathrow in the context of runway expansion*, September 2019, pp. 141 & 143-44

<sup>30</sup> CEPA, *Slot Allocation at Heathrow in the context of runway expansion*, September 2019, pp. 91 and 99.

<sup>31</sup> CEPA, *Slot Allocation at Heathrow in the context of runway expansion*, September 2019, p.142.

<sup>32</sup> CEPA, *Slot Allocation at Heathrow in the context of runway expansion*, September 2019, pp.147-8.

<sup>33</sup> CEPA, *Slot Allocation at Heathrow in the context of runway expansion*, September 2019, pp.142 & 162-3.

<sup>34</sup> CEPA, *Slot Allocation at Heathrow in the context of runway expansion*, September 2019, pp.142-3 & 160.

- *Detrimental impacts of the costs of auctions on consumers:* CEPA argues (when discussing the combinatorial auction) that arguments by airlines that auction costs would be passed onto consumers through higher prices have limited merit. As air ticket prices are a function of competition, and competition should not be affected negatively and may be affected positively in this auction option, airlines are likely to be limited in their ability to raise prices. Moreover, the constraints airlines face on ticket prices could translate into constraints on bids, such that any bid would allow them to maintain the margins expected by their shareholders.<sup>35</sup>

### *Oxera's Report*

**Oxera's report also provided some detail on auction design, though the focus of their report was to assess the performance of alternative allocation methods, including auctions, and examine impacts on competition and efficiency.** Similarly to CEPA's 'combinatorial auction', Oxera's simulation involved a single sealed-bid combinatorial auction. They selected a combinatorial / package approach for the same reasons as CEPA, and justified using a sealed-bid format on the grounds there was little common value uncertainty present and so there would be less need for the price discovery benefits.<sup>36</sup> They used a first-price pricing rule, arguing that the theoretical benefits of second-price payments (see above) were mitigated given the use of an approximate winner determination algorithm and 'exclusive or' bidding. They also argued that first price payments were 'simpler for [auction] participants to understand'.<sup>37</sup> Overall there are some differences in CEPA and Oxera's auction design choices and explanations for them, though this could be partly due to the different primary aims of the papers.

## **5. Conclusion**

**In the event of new airport capacity, auctioning may be a practical option to efficiently allocate new slots.** Future auctioning of new slots could be achieved by, but not limited to, the models and features from the methods described above (Sealed-Bid, CCA, CMRA).

---

<sup>35</sup> CEPA, *Slot Allocation at Heathrow in the context of runway expansion*, September 2019, pp.148.

<sup>36</sup> Oxera acknowledge that there was some uncertainty over slot value ahead of the auction due to not knowing how many competitors would choose to fly a given route at a given time period. But they argue that this uncertainty would have been unlikely to have significantly reduced through price discovery, as other airlines could operate the slot on a variety of routes (see p. 66). It's worth noting that CEPA posit other reasons for valuation uncertainty and argue that price discovery could be useful for airlines in the context of using auctions for slots.

<sup>37</sup> Oxera, *Slot allocation at an expanded Heathrow: Behavioural experiment*, October 2019, pp. 65-6.