



HM Government

Beyond the horizon

The future of UK aviation

Next steps towards an Aviation Strategy



April 2018



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ISBN: 978-1-84864-199-0

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Foreword



More of us are flying than ever before. Passenger numbers have increased by over 20% in the last five years with 268 million passengers passing through UK airports in 2016. Passengers are benefiting from the opportunities presented by more connections, cheaper flights and greater choice and demand looks set to continue. Our latest forecasts show that passenger numbers are likely to increase to 410 million by 2050. This growth is good news for the thriving aviation sector and for the UK economy, but brings with it challenges that need to be addressed.

In my first five months as Aviation Minister I have been hugely impressed with what I have seen from an ambitious, innovative and rapidly evolving aviation industry that has a clear understanding of its importance to Britain's prosperity. It is also an industry that is looking ahead to the future.

This is shown by the investment in airport facilities around the country. I visited Luton Airport in January to look at its new terminal development. I have also heard from Gatwick about its new flights to cities such as Buenos Aires and Singapore, from Newcastle on their record passenger growth, I've heard how improved surface access to Southampton Airport is making passengers' journeys easier, and how Heathrow has been consulting on its plans for a third runway. This is an industry that does not stand still.

We have seen record passenger numbers in each of the last three years, with higher passenger growth at Stansted, Edinburgh, Leeds Bradford and Glasgow than ever before. We have the third largest aviation network in the world, with direct flights to over 370 international destinations in more than 100 countries worldwide.

Aviation is a key part of our economy. The sector contributes at least £22 billion to the UK economy each year and is estimated to support over half a million jobs, spread across all of the regions of the UK. We have the second largest aerospace sector in the world, producing the most technologically sophisticated parts of aircraft, including wings, engines and other advanced systems. 2018 is the Year of Engineering and the government wants to continue to support this success.

But we should not take these achievements for granted.

As the aviation sector grows, the expectations of passengers are changing. It is important that the industry, and government, have a clear understanding of what consumers want and that we are equipped to meet their needs.

We will put consumers at the centre of the Aviation Strategy. Great customer service through better information, quick and efficient compensation, and support to help passengers with reduced mobility, will go a long way to achieving our objective of a consumer-led aviation sector.

Safety and security will continue to be key priorities for government. We will build on our world-leading expertise and ensure that the highest safety standards are adhered to by airlines using our airspace. We need to make sure that the UK is equipped to respond to changing threats and that our aviation sector continues to be both safe and secure.

Passengers benefit from the UK's strong position in the global aviation market. As we leave the European Union we want to build on this position as we continue to develop our links with the rest of the world.

Encouraging competition helps to ensure that consumers get the best deals and a quality service. The government will continue to work with industry to make sure that the right level of competition exists to bring benefits to passengers.

As demand for aviation services continues to increase, we must ensure that the sector is able to grow in the most sustainable way. This means addressing the noise and air quality issues experienced by communities, as well as the global effect of carbon emissions. We need to provide the right framework that will allow the sector to grow responsibly.

New and emerging technology has the potential to help address these challenges and transform the sector. The aviation sector has a vital role in delivering the government's [Industrial Strategy](#); boosting productivity and efficiency and creating new jobs across the UK. We also need to ensure that there is the necessary investment in the skills we need for the future.

It is for all of these reasons that aviation will continue to be a priority for the government. We are developing an Aviation Strategy that is rooted in partnership between government and industry. In the foreword to last year's launch of a call for evidence on the new strategy, the Secretary of State underlined the importance of aviation to delivering a truly global Britain, building on our record of success.

Since launching the call for evidence the government has:

- published updated aviation forecasts, which show that demand for services will continue to grow
- undertaken a further public consultation on the draft Airports National Policy Statement for airport expansion in the south-east of England – the next step in delivering much needed extra capacity
- responded to the consultation on airspace modernisation – part of the work to develop the way that UK airspace is managed to make it cleaner, quieter, and more efficient
- published the Industrial Strategy – setting out the long-term plan to boost productivity throughout the UK, including a ‘Grand Challenge’ on the future of mobility
- passed the Space Industry Act into law – opening up new frontiers and opportunities for the UK in satellite and spaceflight launch
- completed important consultations on the use of drones and on night flights
- established the Independent Commission on Civil Aviation Noise, an important voice for communities concerned about the environmental impact of aviation
- agreed to the transitional period for leaving the EU, providing certainty for industry, and progressed arrangements for future flights and safety agreements with other countries

We have also seen the sad demise of Monarch Airlines; a difficult event for the passengers affected and the staff who lost their jobs. In these challenging circumstances we were able to successfully deliver the largest peacetime repatriation in UK history, flying 84,000 people home. It was a good example of government and industry working together to achieve our objective of getting people home safely and minimising the disruption caused to passengers.

This is a highly competitive industry, but one that has proved that it is more than capable of coming together to overcome common challenges and work towards shared goals.

This document is the start of a detailed conversation over the coming months about how to make the most of the challenges and opportunities of the future. We will work with industry and passengers to shape the policy solutions that we will consult on later in the year, developing a new strategy that will ensure that UK aviation remains a global leader for generations to come.

I look forward to the work ahead.



Baroness Sugg
Aviation Minister

Executive summary

To achieve a safe, secure and sustainable aviation sector that meets the needs of consumers and of a global, outward-looking Britain

The Aviation Strategy will set out the long-term direction for aviation policy to 2050 and beyond.

The first phase of its development was the publication of a call for evidence in July 2017.¹ This invited views on the proposed aim and objectives, policy priorities and the timetable.

The government received 372 responses, with most respondents agreeing with the need for a new strategy and welcoming the government's proposed approach to its development. The consultation raised a number of important issues, which the government will address as the Aviation Strategy is developed.

The strategy will pursue six objectives, which are unchanged following the consultation. This document sets out further detail on the challenges associated with these objectives and some of the action that the government is considering and which will form part of further consultation later in the year.

Help the aviation industry work for its customers

The government is putting consumers at the centre of the Aviation Strategy. This will cover all aspects of the consumer experience, including accessibility, better information and support for when things go wrong. The strategy will address this by:

- empowering passengers by ensuring that they have the information that they need at all stages of their journey
- ensuring that the right levels of consumer protection, including the most appropriate compensation arrangements, are in place
- minimising delays experienced at the border by looking at how government and industry can work together to plan for the future and improve processes
- ensuring that passengers with disabilities are able to travel by air as seamlessly as possible, by improving service levels and strengthening the training provided to airport and airline staff
- reducing disruptive passenger behaviour, particularly that associated with alcohol, by raising awareness of the consequences of that behaviour and strengthening regulation

1 <https://www.gov.uk/government/consultations/a-new-aviation-strategy-for-the-uk-call-for-evidence>

Ensure a safe and secure way to travel

Keeping the travelling public safe and secure remains the government's top priority. The government will ensure that the UK's approach remains innovative and responsive to new threats by:

- focusing attention on the highest safety risks, considering whether we have the right approach to risk management in each part of the sector
- improving safety standards overseas, seeking to embed and improve the international aviation safety culture
- developing innovative solutions for aviation security, including trials of new hand luggage screening equipment
- engaging constructively with industry, international organisations and other countries to raise international security standards

Build a global and connected Britain

Consumers have benefited from the UK's global connectivity and access to markets. The government wants to build on this as we leave the European Union, opening up new links with the rest of world by:

- establishing an ambitious new relationship with the EU on aviation, including on market access, safety regulation and air traffic management
- examining our air service agreements with the rest of the world, to ensure we are using these treaties to drive even more connectivity and competition for the benefit of the consumer

- setting out our approach to international standards to maximise the UK's influence while helping to develop the capacity of other nations
- reducing barriers to the movement of freight
- setting out our approach to working with the sector to promote its exports

Encourage competitive markets

The UK has led the way in promoting competition in the aviation market. The government will further look to maximise the benefits of competition in the sector by:

- ensuring that competition is delivering the right outcomes for consumers, across all of the sub-sectors within aviation
- ensuring that slot regulation remains open, transparent and fair, and that we are making the most efficient use of constrained capacity
- looking at whether regions are suitably connected by either air or surface transport to the rest of the UK and to key overseas markets
- looking at whether current regulatory arrangements support the sector's competitiveness
- encouraging our general aviation network, which contributes jobs, skills and training to the sector

Support growth while tackling environmental impacts

Demand for air services has grown strongly in recent decades, and the government expects that demand will continue to rise significantly between now and 2050. This underlines the importance of achieving a new framework for growth which takes account of the impact of aviation on the environment and ensures growth is sustainable. The strategy will address this by:

- considering the need for a new framework to allow airports to grow sustainably, and if so, what that framework should look like
- modernising our airspace to deliver cleaner, quicker and quieter journeys, to the benefit of both the aviation industry and communities affected by aircraft noise
- looking at whether the right regulations, controls and incentives are in place to ensure the sector continues to address noise impacts as well as tackling air quality concerns
- considering our approach for tackling UK aviation's carbon emissions to 2050
- reviewing how road and rail links to airports are planned and delivered
- looking at how government and industry can improve the sector's resilience

Develop innovation, technology and skills

As technology develops it is important that policy and regulatory barriers to innovation are reduced and that the aviation sector has the skills it needs to realise these benefits. This will be achieved by:

- making the most of the opportunities of a digital future, including the encouragement of greater data sharing between organisations in the aviation sector
- helping to advance the automation and electrification of aircraft
- ensuring that government, industry and academia are best aligned to incentivise and encourage innovation
- improving our understanding of how consumer behaviour and public understanding of new transport technologies can affect their uptake
- better understanding the extent of any skills shortages and what action should be taken to address them, as well as addressing the barriers to diversity in the sector

The government will continue the dialogue that has already begun on these issues. The next step will be the publication of detailed policy proposals in a green paper in the autumn of 2018. This will be followed by the final Aviation Strategy document in early 2019.



1. Introduction

About the Aviation Strategy

- 1.1 The government is developing a new Aviation Strategy for the UK. The Aviation Strategy will set out the long-term direction for aviation policy making to 2050 and beyond. The strategy will have a particular focus on consumers and cover the whole country. It will look at where government could, and should make a difference. Throughout the strategy, the government will consider passengers, airports and airlines, communities, the freight sector, industry organisations, private fliers and environmental groups.

Aims and objectives

- 1.2 The new Aviation Strategy will take a fresh look at the aviation sector and its challenges and opportunities, as well as the role of government. It will build on the UK's aviation success story in pursuit of the following aim:
- 1.3 **To achieve a safe, secure and sustainable aviation sector that meets the needs of consumers and of a global, outward-looking Britain**
- 1.4 The strategy will have the following six objectives:
 - help the aviation industry work for its customers
 - ensure a safe and secure way to travel
 - build a global and connected Britain
 - encourage competitive markets
 - support growth while tackling environmental impacts
 - develop innovation, technology and skills

The Industrial Strategy

There is a huge opportunity for the UK if we harness our world class expertise in emerging technologies to address transport challenges. The Future of Mobility Grand Challenge is one of four Grand Challenges established in the Industrial Strategy to put the UK at the forefront of the industries of the future and improve people's lives and the country's productivity.

The government announced in the Industrial Strategy that it was backing the aerospace sector and its strengths in productivity and innovation to secure a share of the growing global market. The Aerospace Growth Partnership (AGP), a strategic partnership between the government and industry, is focused on helping shape and influence a business environment that tackles barriers to growth, boosts exports and grows high value jobs for the UK aerospace sector.

Progress so far

- 1.5 The first phase of the development of the strategy was the publication of a call for evidence in July 2017.² This set out the government's approach for a strategy that will put consumers at the centre of policy making, covering the whole of the UK's nations and regions.
- 1.6 The call for evidence invited comments on the proposed aim and objectives, and sought views on the policy priorities that should be addressed through the strategy and the timetable for its development.



2 <https://www.gov.uk/government/consultations/a-new-aviation-strategy-for-the-uk-call-for-evidence>

- 1.7 The government received 372 responses to the call for evidence and is grateful to all those organisations and individuals who responded. Respondents included airlines, airports, aviation industry organisations, the general aviation sector, environmental and community groups, local authorities and the wider business community. The government also held a number of engagement events with some of these organisations. A full list of the organisations that responded is included at Annex A.
- 1.8 Most respondents agreed with the need for a new Aviation Strategy and generally welcomed the government's proposed approach. A number of issues were raised by the response to the call evidence, including but not limited to:
- the importance of consumer choice and making sure the sector is delivering for those who use it
 - the challenge of delivering future airport capacity beyond 2030
 - the need for airspace modernisation
 - the importance of managing noise and other environmental impacts of aviation as the sector continues to grow
 - the continued success of the sector after the UK leaves the European Union

Northern Powerhouse

The Northern Powerhouse Connectivity Week in February highlighted the region's strong global connections that facilitate critical trade and exports across the UK. Airports and ports are the North's global gateways, driving much of the trade and travel that attracts inward investment and creates jobs.

The government is committed to the Northern Powerhouse, and throughout the Aviation Strategy it will ensure that the sector continues to benefit the whole of the UK.

About this document

- 1.9 This document sets out how the government will take account of the responses to the call for evidence through the next phase of development of the Aviation Strategy. The government has reviewed the responses and has drawn on them to develop the issues that it will address going forward.
- 1.10 Each of the following six chapters examines one of the strategy's objectives in depth, setting out what the government believes are the key issues that need to be explored, posing some of the questions that remain unanswered, and giving a sense of the range of actions that could potentially be taken to address the issues. Finally, Chapter 8 sets out the timetable and how you can continue to be involved in the conversation.



Help the aviation industry
work for its customers

2. Help the aviation industry work for its customers

- 2.1 The government has put consumers at the centre of the Aviation Strategy. Consumers include all those who make use of the benefits and opportunities that aviation brings, including passengers, industry, the freight sector, general aviation and businesses that rely on aviation services. This objective focuses primarily on passengers, while the importance of the sector to businesses, by providing both connectivity and freight services, is explored under the third objective, Build a Global and Connected Britain.
- 2.2 The government will consider what information passengers need at various stages of their journey. It will consider the levels of consumer protection that exist, both in times of disruption and in the event of airline failure, we will investigate and explore how government and industry can work together to plan for the border of the future, and what can be done to help ensure that those with disabilities are able to travel by air as seamlessly as possible. Finally, the strategy will develop solutions to help reduce disruptive passenger behaviour.
- Clear information at every stage of the journey**
- 2.3 An important part of ensuring an efficient aviation sector that works for its customers is ensuring that passengers have the information they need. If passengers have the right information, at the right time and in the right format, they can make informed choices. With better information, passengers may make different decisions that make their journeys easier, cheaper and more convenient, and help to improve their experience in times of disruption. The availability of new digital services can help passengers make these informed choices, so the government wants to encourage accessible information and ensure that innovation in this area continues.
- 2.4 Evidence suggests that there are three key areas where information needs to be improved: information before travelling, including comparison data when booking a flight, information during the journey, and information when things go wrong, such as a flight delay or cancellation.

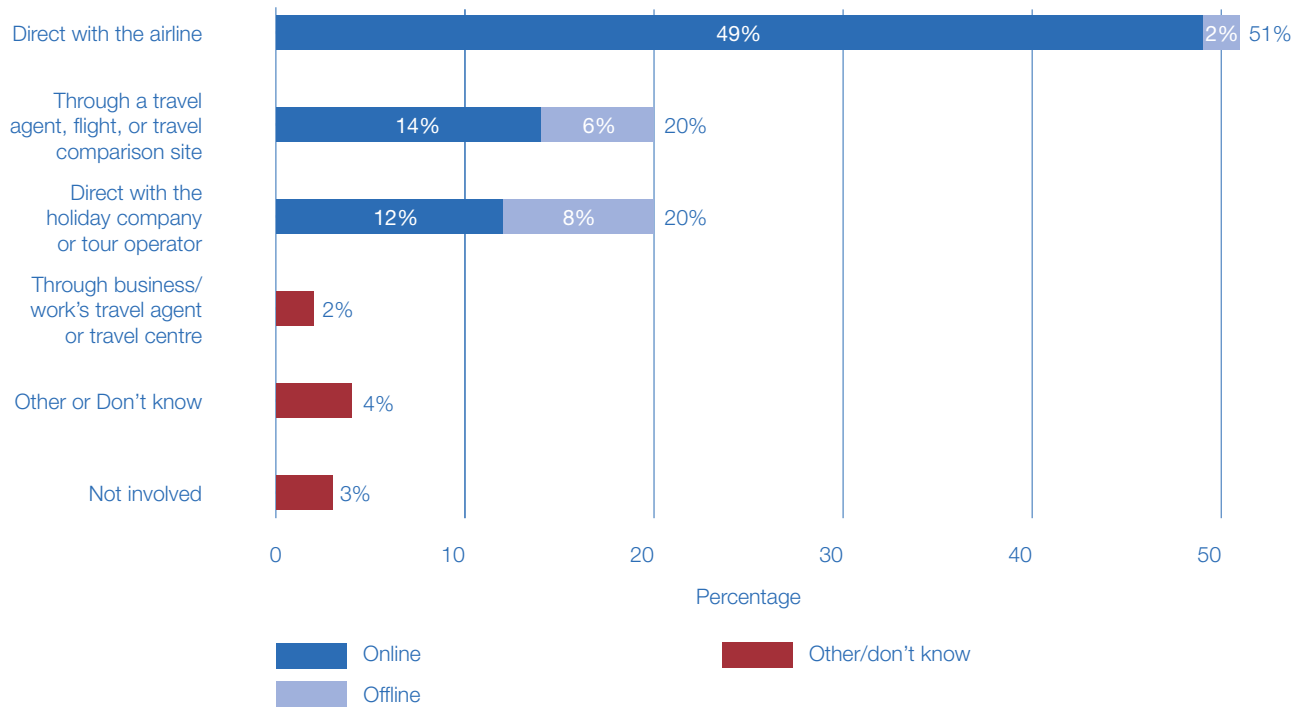


Figure 1 Booking method of last flight

2.5 Around half of UK consumers agree that it is easy to understand and make price comparisons (47%).³ Satisfaction with the airport experience varies with age, with older travellers more satisfied with multiple aspects of this part of the travel experience. While satisfaction ratings are generally good, it is worth exploring if better information during the journey can help improve the consumer experience. For example, satisfaction around information about flight status once at the airport tends to be lower. When it comes to information provided to customers when flights are delayed or cancelled, satisfaction levels drop considerably with only 44% of passengers satisfied with the amount of information that they receive during times of disruption.⁴

2.6 A survey conducted by the Civil Aviation Authority (CAA) found that 89% of passengers who said their flight was delayed were already at the airport when they found out about the delay. Of the passengers who said their flights were cancelled, 81% learned about the cancellation at the airport, and the rest were at home or en-route to the airport.⁵ This highlights the need to ensure that passengers are advised promptly of disruption to their flight and are updated regularly as the situation develops.

3 Civil Aviation Authority (2017): Consumer Tracker Survey, Wave 4

4 Civil Aviation Authority (2017): Consumer Tracker Survey, Wave 4

5 Civil Aviation Authority (2015): Passenger experiences during flight disruption



- 2.7 The CAA provides general advice for consumers planning on taking a trip, and things to watch for when booking a flight, such as understanding the terms and conditions and checking the airline's seating policy,⁶ but more information could be made available. The government is undertaking research to understand how consumers make decisions and whether they have enough information to make choices that are right for them. Overall, the government wants to better understand consumers' views on their whole flying experience and what their priorities are so that information can be used to empower consumers and drive up standards within the aviation industry.
- 2.8 We need to achieve the right balance of enough information for passengers to make the best decisions for their needs, without causing confusion with too much information.
- 2.9 There are also questions about whether the pricing of flight tickets and potential "add-on" charges is sufficiently clear and how information can be used to raise standards in this area. The government will look at measures to encourage more transparent pricing of tickets and additional charges, such as baggage costs and seat reservation charges.
- 2.10 The government also wants to better understand how innovations in technology can be used to create a more seamless and personalised experience for the whole journey from door-to-door, ensuring passengers have the information they need when making choices about how to travel to the airport. This could include the options available for parking and the costs associated with them, and the speed and reliability of the available modes of public transport.
- 2.11 The government is undertaking research on whether more should be done to support multi-modal ticketing. This research is looking at existing examples of multi-modal tickets, both in other transport modes in the UK, and in those other countries where plane journeys are already offered as part of an integrated ticket.
- 2.12 The government also recognises that passengers with food allergies sometimes face inconsistent responses from airlines when they notify them of their condition. The CAA is undertaking a review of the scientific evidence on the issue and will share the outcome with industry and provide guidance to better inform airlines' policies. This will help to ensure consistency in the information passengers are given.

6 <https://www.caa.co.uk/Passengers/Before-you-fly/>

- 2.13 It is clear that the lowest levels of passenger satisfaction occur when things go wrong, such as during delays. The government will be considering working with industry to create new guidance on information provision during times of disruption, including ensuring it is clear who should be providing that information.
- 2.14 The government will also explore whether there are barriers to the development of app based solutions for all of a passenger's information needs.

A fair and simple compensation process

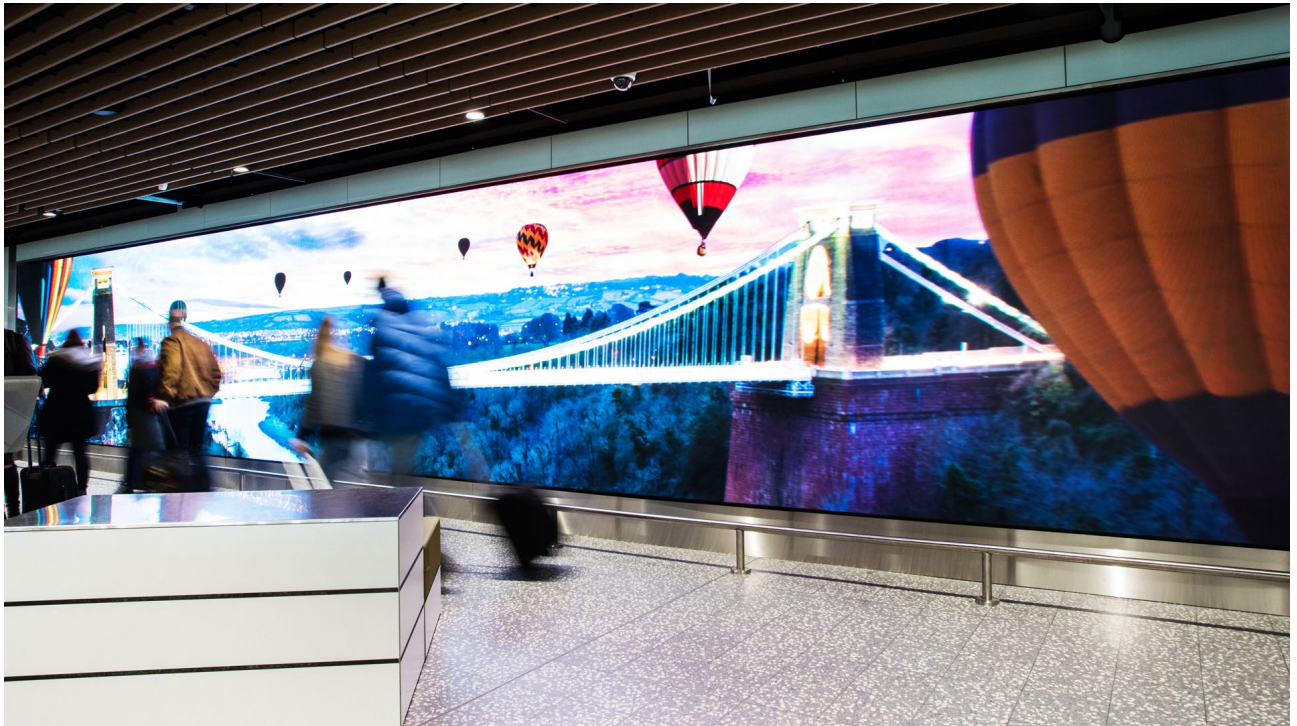
- 2.15 The government needs to ensure that consumers are protected when things go wrong. The current system of compensation for delay, cancellation and denied boarding provided by EU Regulation 261/2004 provides strong levels of consumer protection, and the UK will not fall below current standards of protection when we leave the EU, but the process by which compensation is accessed is often difficult for the consumer to navigate.
- 2.16 Customer satisfaction with complaint handling is currently low, with over 40% dissatisfied with the speed of response, the level of redress offered, and the information provided about the progress of complaints.⁷ Only 54% of those who considered making a formal complaint to an airline actually made one. The main barrier is the belief that it would take too much time and effort. Similarly, the main reason that most passengers did not escalate their complaint to a third party is the belief that it would take too much time and effort.⁸

- 2.17 The introduction of Alternative Dispute Resolution (ADR) to the sector in 2015 has helped to provide clarity in cases where there is disagreement between an airline and passenger on whether compensation is due, and the decisions made by the ADR body are binding on the airline. Around 80% of passengers on UK flights are now covered by ADR and the average rate at which consumers have had their complaints upheld (in full or part) by the CAA approved ADR providers is 79%.⁹ The CAA also undertakes regular compliance audits and has been required to take enforcement action against a number of airlines in recent years, often because they are failing to inform passengers of their rights during times of disruption.
- 2.18 The government wants to open a debate on how a compensation scheme should work in the interests of consumers. As part of this, the government will consider what means are available to increase the claim rates, such as strengthening or clarifying the requirement for airlines to inform passengers affected by disruption that they might be entitled to compensation.

⁷ Civil Aviation Authority (2017): Consumer Tracker Survey, Wave 4

⁸ Civil Aviation Authority (2017): Consumer Tracker Survey, Wave 4

⁹ Civil Aviation Authority (2017): ADR in the aviation sector – a first review



- 2.19 The government also wants to consider the ADR process and investigate whether the introduction of ADR has led to better outcomes for consumers. Its ambition is for as many passengers as possible to be covered by a successful ADR scheme and so the Aviation Strategy will consider if there is a case for a mandatory scheme, as is the case in some other sectors of the economy.
- 2.20 Other solutions the government will explore further include setting key performance indicators for airlines to respond to complaints so enforcement action can be taken if they are not met, giving the CAA greater powers to enforce the existing regulations, and making the compensation arrangements clearer for passengers.

At the border

- 2.21 Passport control at the airport is most people's first experience of the UK. These controls are managed by Border Force, an operational command of the Home Office with responsibility for securing the UK border and protecting vulnerable individuals from harm while ensuring the UK is open for business. The government is committed to the security of our border while at the same time facilitating travel for legitimate travellers and freight and ensuring we are prepared for EU exit. The Department for Transport (DfT) and the Home Office are working to continuously improve the border experience, at the same time as keeping the public safe from harm.

- 2.22 Given the expected increase in passenger demand it is clear work needs to be done to ensure the border can offer a world class service while still providing the security that the UK, and travellers, rightly demand. Border Force regularly meet the targets agreed with ports for timeliness of passengers clearing border crossing, with latest published data (for Q3 2017) revealing 95.7% of passengers were cleared within Service Level Agreements (SLAs).¹⁰ At certain peak times, however, SLAs are not always met leading to additional delays for arriving passengers. A recent Which? review of large airports (10 million or more passengers per year) indicated low satisfaction levels with the queues at passport control at 7 of the 13 airport terminals surveyed.¹¹ The responses to the call for evidence confirmed that this is an area that should be explored further in the strategy.
- 2.23 Border Force is currently using e-passport gates to great effect to speed up the border crossing for many passengers. The UK processes more passengers with facial recognition (via ePassport Gates) than any other country and Border Force has rolled these gates out widely where possible. In April 2016 there were 125 ePassport gates at 14 airport terminals, and now Border Force is operating 239 Gates at 19 airport terminals. This is resulting in increasing numbers of passengers using the gates; in 2017 e-gates at airports were used 44.9 million times.¹²
- 2.24 The government is now looking towards developing a longer term strategy which will better balance prosperity and security at the border. This will provide a service for legitimate travellers which ensure they can cross the border as easily as possible, whilst making it more difficult for people who wish to do us harm to travel. Alongside this, to ensure excellent service at the border whilst continuing both to deal with the growth in passenger numbers and increasing passenger expectations, as well as maintaining security, the Government will consider whether there are additional or alternative funding mechanisms in the medium term. A number of other countries have already introduced such schemes. Where any such mechanisms would affect industry and partners, a full consultation would be undertaken, for example before any significant new charging mechanisms were introduced.

10 Border Force (2017)

11 Which? (2017): Best and worst large UK airports

12 Border Force (2018)

- 2.25 Border Force also has a number of digital programmes at stages of development or roll-out, including Digital Services at the Border. These will deliver new systems and offer an opportunity to remove some older manual processes, such as officers needing to send faxes, and ensure officers have access to the information they need. Bringing this information together for users in one place will help Border Force make better decisions faster and with greater confidence.
- 2.26 Improving the experience at the border is not just the domain of Border Force, industry also have a role to play. Close working between DfT, Border Force and industry can improve the passenger experience at airports. The government is committed to working with the aviation industry to help Border Force plan effectively to minimise queue times, such as reducing last minute scheduling changes, and ensure that SLAs are set at the right levels.
- 2.27 The Home Office is actively exploring options of how to improve the experience at the border, working to ensure legitimate travellers are able to enter as quickly and as easily as possible, to ensure a world class service is offered.

Improved accessibility

- 2.28 Providing high quality, timely assistance services to passengers with reduced mobility and passengers with disabilities, including hidden disabilities, is vital to enable and encourage air travel. The UK has a strong consumer protection regime in place, which requires assistance suitable for the passenger's needs to be provided without any cost to the passenger. The CAA has found that the demand for assistance services is growing faster than general passenger growth in the UK. In 2016, people with a disability requested extra help on over 3 million journeys – a rise of more than two thirds since 2010.¹³ The government wants to ensure that the industry is able to meet the increase in demand. The government will also explore what barriers exist that prevent passengers with reduced mobility from travelling by air, and how those barriers can be overcome.

13 Civil Aviation Authority (2017): Airport accessibility report 2016/17

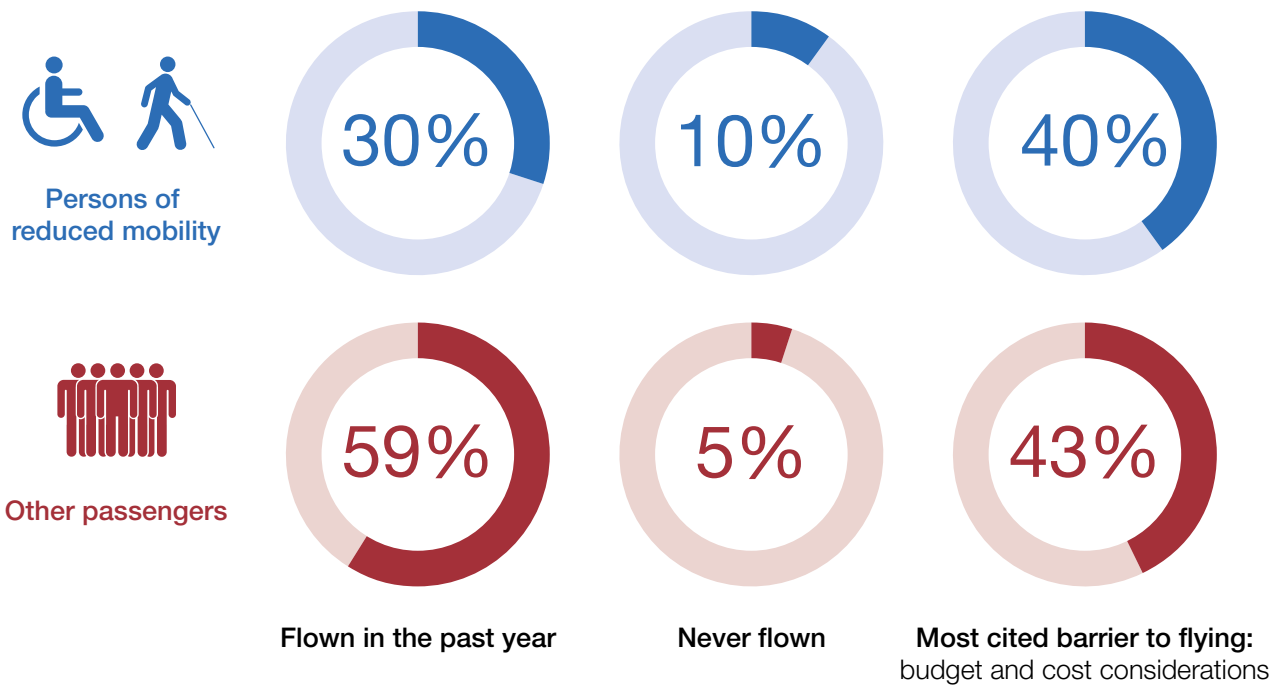


Figure 2 Persons of reduced mobility

2.30 Awareness of the availability of assistance, and satisfaction with that service, amongst passengers with reduced mobility who travel by air is generally high. However, there is a significant proportion of this group who do not fly because they do not see it as an option for them.¹⁴ While the most commonly cited barrier to flying for passengers with reduced mobility is cost considerations, the same as the population more generally, 36% also mention the difficulties that their health condition or disability would cause at airports or while flying.¹⁵

Those passengers with reduced mobility who have not flown within the last 12 months were also specifically asked in a CAA survey whether difficulties accessing and/or using airports or flying were a reason they have not flown recently.¹⁶ 40% of those non-recent flyers said that access was a barrier to flying. It will become ever more important to address these challenges as the population ages.

14 Civil Aviation Authority (2017): Consumer Tracker Survey, Wave 4

15 Civil Aviation Authority (2017): Consumer Tracker Survey, Wave 4

16 Civil Aviation Authority (2017): Consumer Tracker Survey, Wave 4

Accessibility Action Plan

Last year DfT consulted on a draft Accessibility Action Plan covering all modes of transport, which asked what more we could do to ensure that passengers with reduced mobility are able to access the information they need in order to fly. The Accessibility Action Plan consultation received over 1000 responses, which DfT is carefully considering. The government will publish its response to the consultation as well as its inclusive transport strategy later this year.

- 2.31 The CAA has stepped up its compliance activity, including a 'name and shame' policy, which highlights airports that are falling below what government would consider acceptable when offering assistance to passengers. This has been a key driver in improving standards for passengers with reduced mobility. Industry are also taking action to address some of the issues around hidden disabilities, such as autism and dementia. A number of airports have, for example, trialled offering lanyards to passengers so that airport staff can easily identify more vulnerable people who may not want to share details of their disabilities. Staff have been trained to recognise the lanyards and provide additional support if and when required.
- 2.32 Passengers with reduced mobility who already travel by air are generally satisfied with the service and assistance they receive, but the government will explore why standards across the sector are inconsistent. It also needs to understand why a significant proportion of UK citizens with a disability or reduced mobility feel that it prevents them from travelling by air. Finally, while the barriers at airports could be overcome with the right incentives for industry to act, the government needs to explore further what can be done on-board aircraft to remove barriers, including in the way future aircraft are designed.
- 2.33 Options to ensure passengers with reduced mobility have the same opportunities to travel by air as other passengers could involve relatively simple solutions such as strengthening training amongst airport and airline staff or introducing an accredited training scheme, raising awareness of the assistance service provided at airports or reviewing performance standards such as for the length of time that a passenger with reduced mobility in a wheelchair has to wait to be helped off an arriving aircraft.
- 2.34 Other considerations that will be discussed in more detail in the forthcoming consultation paper could include a requirement that all aircraft are equipped with an on-board wheelchair and a disabled toilet, or reducing airport walking distances through the installation of travellators. The government will be speaking with stakeholders prior to the publication of the consultation paper to better understand the issues and present various options for discussion.

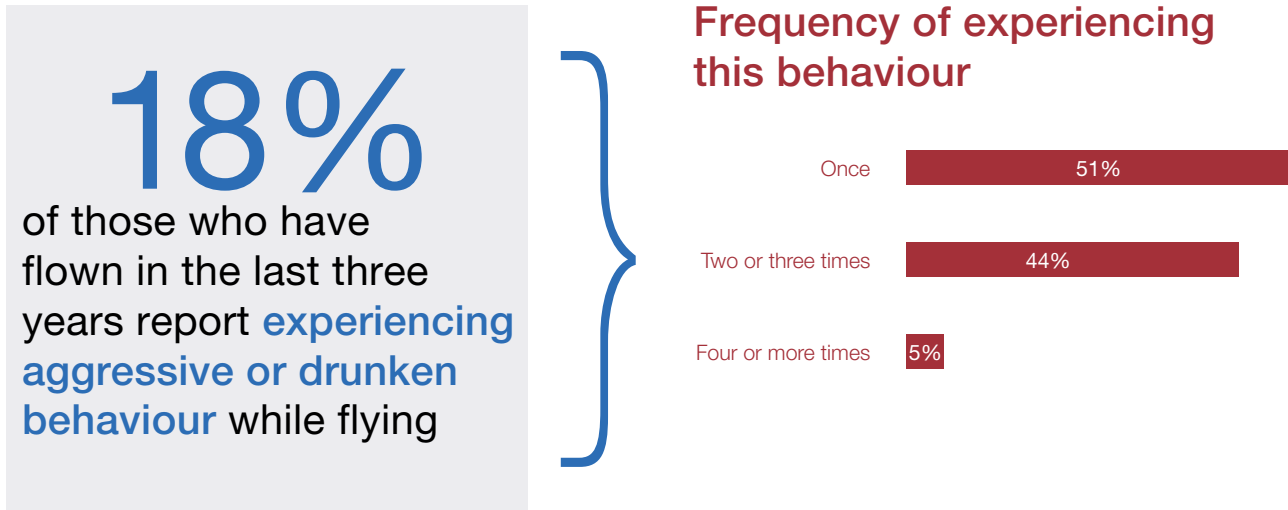


Figure 3 Aggressive or drunken behaviour

Addressing disruptive passenger behaviour

2.35 Passengers who behave in a disruptive manner can affect the journeys of many other travellers. At one end of the scale disruptive passenger behaviour may result in nuisance and annoyance to other passengers. At the other end of the scale it can involve verbal and physical assaults on crew and passengers. At its most extreme, disruptive behaviour can even threaten the safety of the aircraft. This type of behaviour is reported to be on the rise, and it is clear that it should not be tolerated. Through the Aviation Strategy, the government wants to explore what supportive actions it can take to help the aviation industry in its efforts to tackle the problem.

2.36 There are increasing reports of disruptive passengers, with 18% of people that have flown in the last three years witnessing aggressive or drunken behaviour during flights.¹⁷ Airline data indicates that alcohol is the single biggest causal factor in disruptive passenger incidents with around 70% of incidents involving alcohol.¹⁸ It is not yet clear what proportion of alcohol is brought into the airport by passengers, or purchased airside and then consumed on-board the aircraft, or consumed before passengers arrive at the airport. It will be important to understand this when deciding which solutions could be most effective.

17 Civil Aviation Authority (2017): Consumer Tracker Survey, Wave 4

18 Airlines UK (2017)

2.37 The consumption of alcohol brought onto aircraft cannot easily be monitored or prevented by crew, and thus it could be contributing to a substantial number of disruptive incidents. Airlines UK has conducted surveys on the number of incidents where the consumption of alcohol brought on board the aircraft by a passenger was a contributing factor.¹⁹ One airline reported that in around 50% of their disruptive passenger incidents that involved alcohol, crew found evidence that the passengers had consumed their own alcohol on-board the aircraft.

The Licencing Act 2003

A recent report by the House of Lords Select Committee recommended that the Licensing Act 2003 be extended to airside premises at airports to allow licencing authorities to have greater oversight of the bars, restaurants, retail outlets and other premises that sell and supply alcohol airside. The Home Office will issue a call for evidence on the Select Committee's recommendation. The call for evidence will assist the government to assess the impact an extension of the Licensing Act to airside premises at airports in England and Wales could have on reducing alcohol-related disruptive passenger behaviour. It will also allow the government to ascertain more precisely the scale and causes of the problem and assess the effectiveness of industry-led partnerships and non-legislative solutions in addressing it.

2.38 Since June 2015 a selection of Airlines UK members have been working with partners across the industry, including airports, the police, retailers and bar/pub operators to prevent and minimise disruptive passenger behaviour. This resulted in the UK Aviation Industry Code of Practice on Disruptive Passengers which the government fully supports.

2.39 Many airlines and airports are working collaboratively to address the issue of disruptive passengers and excessive consumption of alcohol, such as warning signs at check-in desks, intelligence-led and high visibility patrols, staff being encouraged to report the details of any potential incident of disruptive behaviour to a central control room and the confiscation of duty free alcohol for the duration of the flight.

2.40 There are already tough penalties in place for drunkenness on an aircraft – an individual can be imprisoned for up to two years or given an unlimited fine or both – but it is not clear to what degree passengers are aware of this.²⁰ The options that might be considered range from raising awareness of the consequences of disruptive behaviour, such as penalties for boarding a plane while drunk or getting drunk while in the air; ensuring duty free alcohol is placed in sealed bags with passengers not allowed to open or consume the alcohol until they reach their final destination; or to tougher measures, such as introducing stronger penalties.

19 Airlines UK (2017)

20 Articles 242 and 265(7) of the Air Navigation order 2016.

New arrangements for airline failure

- 2.41 The collapse of Monarch in 2017 brought into sharp focus the need for an airline failure regime that meets the needs of consumers, businesses and the taxpayer. The repatriation operation that followed Monarch's collapse required the government's intervention, and highlighted the need to examine how airline failure should be managed in future. Any future regime needs to recognise that over 50% of consumers expect companies to bring passengers home or refund them in the event of their airline failing. The Air Travel Operators Licence (ATOL) scheme provides protection for those passengers who have booked a package holiday if their holiday provider fails, but it does not protect passengers who have only booked a flight. Another issue is a lack of airline capacity, which would be needed to repatriate passengers in the event of a large company failing.
- 2.42 Initial research on the subject asked airline passengers for their views on insolvency protection for those companies that sell flights only, and are not currently covered by insurance for the eventuality of them going out of business.²¹ Most people felt that protection should be provided to consumers, with more than half (57%) wanting flight companies to be required either to bring the passenger home if they are overseas or to refund them if they have not yet flown. An additional one in five (21%) felt that one or other of these options should be provided.

Review of airline insolvency arrangements

The government has launched a review into consumer protection in the event of an airline or travel company failure. This review will be led by Peter Bucks, and will consider options for an orderly wind down of an airline so that they are able to conduct and finance repatriation operations with minimal impact on the taxpayer. It will consider both repatriation and refund protection and identify the market reforms necessary to ensure passengers are protected.

This review will draw on experience from the collapse of Monarch to identify the market reforms necessary to ensure passengers are protected. An initial review will be made to the Secretary of State for Transport by summer 2018 and a final report within 1 year. The findings of this review will feed into the Aviation Strategy, forming a vital part of the government's vision for making sure airline passengers have adequate protection.

²¹ Civil Aviation Authority (2015): Consumer research for the UK aviation sector



Ensure a safe and secure
way to travel

3. Ensure a safe and secure way to travel

- 3.1 The safety and security of the travelling public is always of the utmost importance. The UK is a world leader in aviation safety and security, sharing our knowledge and expertise around the world. This improves global standards and builds the UK's potential to export our skills, expertise and technological solutions. Responses to the call for evidence supported the importance placed on this objective, with many acknowledging that other challenges or opportunities must be secondary to ensuring that air travel remains safe and secure.
- 3.2 2017 was the safest year in history for commercial airlines, with no passenger jets crashes anywhere in the world, despite more flights being made than ever before. It is nevertheless important to recognise that the safety performance of large commercial aeroplanes varies across the world. The fatal accident rate for UK airlines is one of the lowest in Europe and the world. UK airspace is among the safest. There have been no fatal accidents involving UK passenger aeroplanes for more than 15 years: the most recent fatal accident involving a large UK passenger aeroplane in the UK was in 1989. For a UK aeroplane outside the UK, it was in 1999.
- 3.3 However we cannot be complacent and must continue to strive to improve, ensuring the safety regulatory framework keeps pace with emerging technology and new innovative business models.
- 3.4 As with safety, the UK is recognised as a global leader in aviation security, and the the government has strong relationships with the aviation sector, with interested partners and internationally. The UK's aviation security system offers a strong response to threats from terrorists, with many visible and invisible highly sophisticated security interventions in place. We have an aviation security system that presents a formidable obstacle to terrorists, and keeps people safe.
- 3.5 However, the government must not ignore the fact that aviation continues to be a target for terrorists, and there have been a number of successful or attempted attacks globally. Recent events have shown that the UK continues to be a target for terrorists.

- 3.6 The UK will maintain a strong and dynamic aviation security system that is constantly adapting and changing to maintain high standards. The UK has in place a number of More Stringent Measures, above the EU baseline requirements, meaning we have much higher standards than some other countries. And when we need to, the UK will take the tough decisions to put in place additional measures, such as restrictions on laptops and liquids, to stay ahead of terrorists.
- 3.7 The UK's domestic response to aviation security runs across government, with targeted action, as part of the government's CONTEST Strategy, to combat terrorism.

Air Accident Investigation Branch

The Air Accidents Investigation Branch (AAIB) investigates civil aircraft accidents and serious incidents within the UK, its overseas territories and crown dependencies. It also provides assistance and expertise to international air accident investigations and organisations. In 2017, the AAIB conducted 38 field investigations, 16 of which were fatal accidents in the UK that had resulted in 28 deaths. A further 204 investigations were conducted by correspondence. AAIB was also deployed to 7 accidents overseas, including to Norway, Ireland, Holland, the USA, the British Virgin Islands and the Turks and Caicos Islands.

Focus attention on highest safety risks

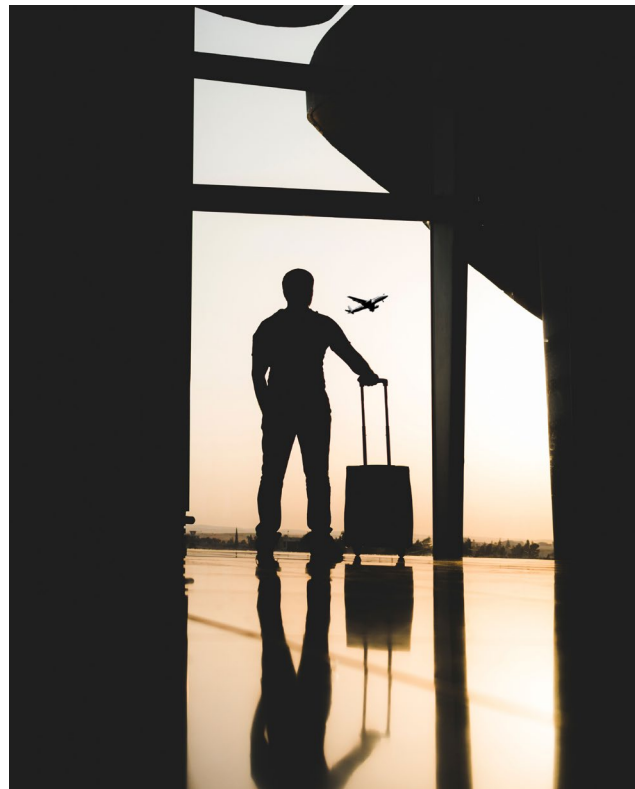
- 3.8 The government should target reform on areas with the most frequent accidents, or where data suggests that there is an emerging safety risk. The increased use of drones presents a safety risk to aircraft, and the government has consulted on a proposed regulatory framework for their use and has determined that drones will have to be registered and users will have to sit safety awareness tests. The government is working closely with the European Commission and the International Civil Aviation Organisation (ICAO) to establish an effective and proportionate set of rules to govern this.
- 3.9 Another area of concern is the amount of laser attacks on aircraft, with over a thousand incidents having been reported to the CAA in the last year. Lasers can dazzle, distract or blind those in control of an aircraft with serious and even potentially fatal consequences. The government has introduced the Laser Misuse (Vehicles) Bill, which will give the police more power to investigate such incidents and impose tougher sentences on those found guilty.

3.10 Some general aviation activities and helicopter operations have higher levels of fatalities. While these have been identified as higher risk compared the wider aviation industry this must be considered in the context of the industry's overall excellent safety record. In contrast to the strong safety record of UK commercial passenger services, which have seen no deaths since 1999, there were 21 deaths involving general aviation aircraft during 2016 alone.²² All of the UK fatalities in aviation in the last two years have been in general aviation. It is important that government look at this disparity and consider whether there is more that the government should do to address the imbalance, while recognising the value of general aviation to the wider industry and UK economy. Responses to the call for evidence supported the government in its consideration of what an effective and proportionate safety regime for the general aviation sector might look like.

3.11 The government's approach to the regulation of general aviation is set out in the General Aviation Strategy of 2015 and it remains committed to supporting and encouraging a dynamic GA sector. This includes ensuring a safety regulation system that imposes the minimum necessary burden and empowers individuals to make responsible decisions to secure an acceptable level of safety. Where there have been serious accidents, the CAA has taken swift action – such as its response to the tragic events at the Shoreham Airshow in August 2015. The CAA has also published the first edition of The Skyway Code. This easy to access document gives general

aviation pilots practical guidance on the key operational, safety and regulatory issues relevant to their flying. It covers a wide range of safety aspects, such as pre-flight planning, weather information, pilot fitness, competence, attitude and decision making.

3.12 Incidents in 2016 involving large offshore helicopters highlight the importance for the oil and gas industry, regulators and operators to remain focused on improving safety within the sector. Offshore helicopters have a fatal accident rate of 1.6 per million flights and on average one fatality per year. Onshore helicopter operations also continue to see significant occurrences throughout both commercial and private operations with an average of 2 fatalities per year based on a 2012 to 2016 average and a fatal accident rate of 28.4 per million flights.



²² Civil Aviation Authority (2017): UK Aviation Safety Review for 2016

- 3.13 The CAA and the Air Accident Investigation Branch have responded to a number of tragic helicopter accidents, working to improve safety outcomes, especially in the difficult working conditions in the North Sea. The CAA has also launched an Onshore Helicopter Review to identify safety improvement opportunities to complement our continued collaboration with the British Helicopter Association.
- 3.14 One of the key aspects of this objective of the Aviation Strategy is to move further away from reactive rule-making in response to events and to be more aware of emerging risks in a fluid and data-rich regulatory environment. A key aspect of this is to explore through the strategy how the government can work to reduce the likelihood of fatal accidents occurring in all UK aviation activities and fatal accidents involving people on the ground in the UK as a result of an aviation accident. The government needs to consider whether we have the correct proportionate approach to safety risk management in each part of the sector. It will also explore whether there are international comparisons or data sources that should be considered to improve our understanding and approach to safety oversight.
- 3.15 Worldwide accident statistics for the last five years show a decrease in both the number of accidents as well as the accident rate. Commercial aviation continues to be one of the safest forms of travel, and it is getting safer.
- 3.16 While this global performance is impressive, it masks underlying disparities in the safety performance of the industry across the world. In order to ensure passengers are protected it is important that the high standards of safety that we enjoy are maintained when UK operators are operating overseas, or when overseas operators are using UK airspace.
- 3.17 The government is working hard to improve safety standards worldwide, engaging closely with ICAO, the European Commission, and European Aviation Safety Agency (EASA), as well as bilaterally with a number of countries with large numbers of UK passengers. The UK works in partnership with a number of states to share safety information and best practice leading to improving safety standards for UK passengers overseas, and improved overseas operating environments for UK airlines. In addition to this, CAA International (CAAi), a social enterprise arm of the CAA, offers technical cooperation, consulting and aviation training across the world. They have provided aviation safety, security and economic regulation assistance in over 140 countries, and support the work of ICAO and EASA.

Improving safety standards overseas

3.18 There is more that can be done to raise international standards. Options for how the government could address these issues include working more closely with CAAi to expand its overseas contracts, working with ICAO and in Europe to produce tangible safety plans focusing on realistic objectives and goals, and to review and improve aviation safety rules to focus on key safety risks and priorities. The government can also seek to embed and improve the international aviation safety culture, ensuring that it encourages and facilitates open reporting of risks to safety, and step up our participation in international capacity building activities such as ICAO's No Country Left Behind programme.

A comprehensive approach to aviation security

3.19 In the UK the government deploys a range of measures to mitigate the risk of a terrorist attack to aviation. These are at various points in the chain – from a terrorist decision to target aviation through to developing a methodology and deploying it. The government understands that no single security intervention can provide a comprehensive solution so a multi-layered approach is used that includes technology, training and physical security. The government will focus on continuously developing and expanding this approach, with an even greater focus on taking action before threats can endanger the aviation system. The aim is to deter, detect and disrupt those who wish to cause harm sooner, while delivering a faster, more integrated and more seamless security experience for passengers and cargo.



3.20 The use of behavioural science to detect, deter and disrupt those who may pose a threat is just one example of where the government, working together with industry, is focusing on early intervention. The aim is for behavioural science to become embedded across all aspects of aviation security, making existing processes more effective and introducing new ways of detecting, deterring and disrupting those who may pose a threat. As part of this the government is exploring options for further developing the existing behaviour awareness capabilities at UK airports.

Innovative solutions for aviation security

3.21 As with safety, the advent of new technologies offers both challenges and opportunities for aviation security. In particular, advances in screening technology have the potential to greatly improve security and the passenger experience at airports. As global passenger numbers and cargo volumes continue to grow, 8% and 9% respectively in 2017, it is vital that the UK continues to have an effective security system while supporting increased traffic flows and enhancing the passenger experience.²³

3.22 Domestically, the government and the aviation industry invest to ensure that the very latest technology is in place to keep passenger and cargo safe and secure. The government is committed to further improving the passenger and cargo experience, using better, faster and more agile equipment to provide an increasingly seamless passenger journey. As there continue to be innovative technological advancements the government wants to get faster at agreeing standards, establishing trials and delivering solutions commercially.

3.23 One area in which the government is currently working to support the roll out of the latest technology is through trials of new hand luggage screening equipment. This equipment has the potential to improve the effectiveness of security screening, while also helping the passenger experience by allowing laptops, tablets and liquids to be screened while still in hand luggage.

Future Aviation Security Solutions (FASS)

The Future Aviation Security Solutions (FASS) programme aims to improve aviation security by funding and supporting the development of innovative science and technology. The programme has £25.5 million in funding to invest over 5 years to provide new aviation security solutions, not just concepts, for the commercial market. The programme will improve our ability to prevent terrorist attacks on aviation and have a positive impact on passengers' experiences.



Raising international security standards

- 3.24 As with safety, while security standards continue to be high in the UK and Europe, the standard of security implemented around the world can be mixed. The UK is a global leader, working internationally to improve aviation security. This has helped reduce security risks to aircraft flying into the UK and has raised the global standard of aviation security, meaning safer and more secure journeys for passengers around the world.
- 3.25 The UK played a key role in developing ICAO's Global Aviation Security Plan and the UN's Security Council Resolution 2309, which recognises the global importance of aviation and the need to ensure it remains safe and secure. The government will continue to work with ICAO to deliver both long term sustainable change and more immediate short term improvements at the global level. For example the government wants ICAO's audit function to be enhanced so it provides an internationally recognised assessment of member states' security standards. It will also explore the option of dedicating the next ICAO Council to a concentrated discussion on aviation security.
- 3.26 Alongside multilateral engagement, the UK's International Capacity Development Programme provides bilateral support to partner countries, including advice, training and equipment through a network of Aviation Security Liaison Officers to drive up standards and ensure high-quality security screening for passengers and cargo flying to the UK. The government wants to broaden our relationships with international partners, recognising that there is more that can be done to raise standards internationally. The government will therefore expand and enhance its Capacity Development Programme, focusing efforts where the need for our support is greatest.
- 3.27 The government recognises that these efforts will take time and that the UK has few levers with which to influence change in other countries, and therefore the government needs to consider how we can best affect improvements in this area. For example, it could look to encourage the aviation industry to engage constructively with ICAO and member states to develop innovative solutions to improve global aviation security.



Build a global and
connected Britain

4. Build a global and connected Britain

- 4.1 The UK has always been at the forefront of aviation, in terms of the size of our sector, our lead role in technological development, and the liberalisation of both domestic and international markets. As set out in the previous chapter, we are also a world leader in the areas of safety and security regulation. The UK's influence on the international aviation landscape has brought clear benefits, both for the UK consumer and consumers around the world.
- 4.2 As a founder member of ICAO, and a leading voice today we have played a key role in creating the international framework aviation relies upon. British technology developed jet powered aircraft and our aerospace sector today is world leading with our technology and manufacturing excellence found in planes across the globe.
- 4.3 As we leave the EU, it is a key objective for the government to establish an ambitious new relationship on aviation, including on market access, safety regulation and air traffic management. The aviation strategy will examine our air service agreements (ASAs), to ensure that the UK is using these treaties to drive even more connectivity and competition for the benefit of the consumer.
- 4.4 Alongside ASAs, international aviation is regulated by a framework of standards which merit further attention. The strategy will set out our approach to international standards in the coming years, to maximise the UK's influence while helping to develop the capacity of other nations.
- 4.5 Whether in the bellyhold of commercial airlines or in dedicated aircraft, air freight plays a crucial role in the sector and is currently flourishing. The strategy will establish our approach to place the UK at the forefront of air freight technology and facilitation processes.
- 4.6 Aviation plays a crucial role in our wider economy and productivity challenge. The government will set out our approach to working with the sector to promote its exports, and its ability to support the exports of the wider UK economy.

A new relationship with Europe

- 4.7 Aviation is critical to both the UK and the EU. We have a common interest in a positive future relationship. People all across Europe benefit from liberal aviation market access, whether travelling for business or for leisure. There were 153 million passenger journeys made by air between the UK and the EU in 2016. Of the over 370 international destinations that had at least a weekly service from an airport in the UK in 2016, more than a half of these were in the EU.²⁴
- 4.8 UK aviation also brings significant benefits to our EU partners. In 2016, UK tourists spent over £25 billion in the EU across 53 million visits and EU citizens spent nearly £10 billion in the UK across 25 million visits.²⁵ Of the many airlines operating in the EU, the top five by passenger numbers for 2016 included two UK registered companies – easyJet and British Airways. A significant proportion of Ryanair’s operations are conducted to and from UK airports. In 2016, Ryanair carried 38.8 million passengers on 233,000 international flights to and from 18 UK airports.²⁶
- 4.9 The government is focused on securing the right arrangements for the future so that our aviation industry can continue to thrive and passengers across the UK and the EU continue to have high levels of connectivity and choice at attractive prices. The increase in liberalisation, as pursued by the UK, has enhanced competition which has led to the benefits seen today. We also want to secure a continuation of the close cooperation between the UK and the EU on air traffic management. An efficient air navigation system is in the interests of all airlines, whether based in the UK or in the EU.
- 4.10 In her speech on 2 March 2018, the Prime Minister made clear that the UK would welcome continuing our participation in the EASA system. This would help to maintain and raise safety standards across Europe, and reduce regulatory burdens for the aviation and aerospace sectors. International standards and the work of EASA have enabled the development of consistent safety rules across Europe and the world. The UK has played an important role not only in influencing those international standards, but also in providing considerable expertise to the development of EU safety regulations. There are clear precedents for third country participation in the EASA system.

24 DfT Analysis of Civil Aviation Authority (2016): Airport Data

25 Office of National Statistics (2016): UK residents visits abroad, Overseas visits to the UK

26 Civil Aviation Authority (2016): Airport/Airline Data

4.11 Since the call for evidence was published, the UK and EU have agreed to move onto the next phase of Exit negotiations. The UK is well prepared for discussions around the future relationship agreement with the EU, having conducted extensive engagement with industry.

4.12 A key priority for DfT is to replace agreements with third countries where our market access is currently via EU level agreements. Through its current EU membership, the UK has access to 44 countries, including the 27 other EU members. The majority of the UK's international air traffic occurs through EU-based agreements. Discussions with these third countries, such as the US and Canada, about arrangements post EU Exit are progressing well.

Expanding our international connectivity

4.13 ASAs are international treaties covering aviation traffic rights, including the volume and types of flights allowed and the destinations that airlines can operate between. They can also contain other restrictions on airlines' commercial activities, along with rules on taxation, pricing and a range of other non-economic matters, including safety and environmental protections.

4.14 These agreements take the form of bilateral or multi-lateral treaties under a global framework established by the 1944 Chicago Convention and overseen by ICAO. They are quite distinct from trade agreements under the World Trade Organisation, which does not cover air services.

4.15 The UK has 111 bilateral ASAs which will continue after the UK leaves the EU. These agreements provide access to overseas markets for UK carriers as well as access to UK airports for foreign carriers. This access has facilitated direct flights between Manchester and China for example, which has more than doubled the value of goods exported by businesses from Manchester airport to £115 million since the route started.²⁷ The number of Chinese students studying in Manchester has grown, and Chinese tourists have doubled their spending in the region.²⁸ The greater competition that liberalised access allows results in greater choice and connectivity for all consumers, at lower fares.



Copyright: London Heathrow

²⁷ HMRC (2016-17): Trade Statistics

²⁸ SDG Economic Development (2017): The China Dividend One Year In

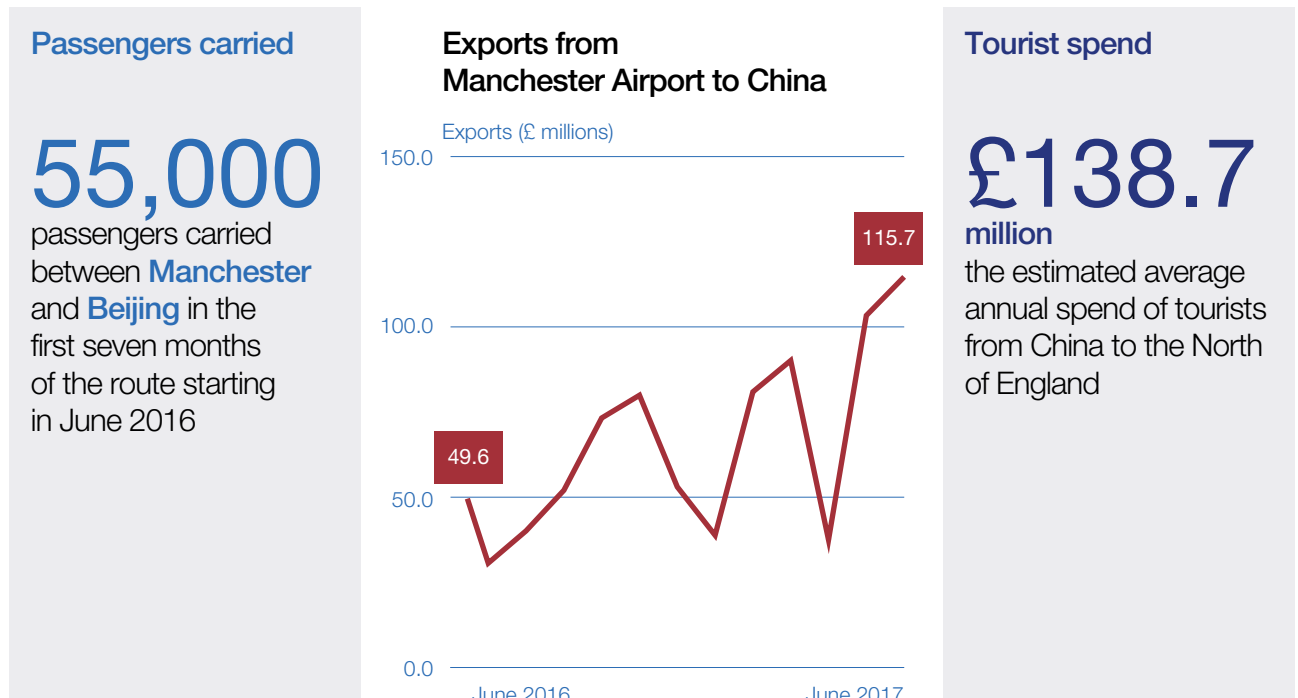


Figure 4 Impact of direct flights between Manchester and China

- 4.16 The UK's new air services arrangements with China increased the number of passenger services allowed to operate from 40 services per week to 150 services per week between the world's second and third biggest aviation markets, with 50 ring-fenced for services to and from UK airports outside of London. The agreement in 2016 also removed limits on the frequency of all-cargo services allowed between the two countries as well as restrictions on the number of cities that could be served in each country.
- 4.17 As the Aviation Strategy is developed the government is considering how it currently prioritises which agreements to update in order to maximise the competition on routes and improve the benefits to consumers. Factors to examine will include size of the market, attractiveness of the destination for passengers and likely competition effects. The government wants the information on current arrangements to be easily accessible to airlines and are looking at how to present that information more effectively.



Figure 5 Air traffic between the UK and India

4.18 The UK is already very active in updating these agreements with other countries; as well as updating our agreement with China in both 2016 and 2017, our agreements with both India and Mexico were updated in 2017. Under the India agreement there are already more than 2.5 million passengers flying direct between the UK and India each year, and there were on average over 120 scheduled passenger services per week departing from UK airports to India in 2016.²⁹ That agreement has opened up even more routes and opportunities.

4.19 ASAs that the UK has negotiated in the past have typically been delivered on a reciprocal basis: the UK has opened up our markets to foreign carriers in return for access to their markets. The government has also pursued a policy of encouraging greater access to airports outside of the south-east.

29 DfT Analysis of Civil Aviation Authority (2016): Airport Data

4.20 The UK has led the way in continuing to push for enhanced liberalisation and the reduction of restrictions in our air services agreements. There was strong support in the responses to the call for evidence for maintaining this approach to air access. The government will use the Aviation Strategy to outline our approach to further liberalisation in agreements.

Delivering an effective international framework of standards

4.21 Alongside market access, the UK has taken a leading role in shaping the global aviation framework – the rules that govern a wide range of industry standards, from the environment to those on security and safety. The UK is a ‘state of chief importance in air transport’ with a permanent seat on ICAO’s council. ICAO is a UN agency, comprised of 192 Member States and a wide range of industry and civil society groups. It works by consensus to establish international, civil aviation Standards and Recommended Practices (SARPs). ICAO also plays a key role coordinating assistance and capacity building for states to help them reach these standards.

4.22 The UK plays a major role at ICAO, and is one of the few states with representation in almost all working groups. We are a strong influence leading and guiding ICAO’s activities. In 2016 shortly after the terrorist attack on Brussels Airport the UK played a lead role in the drafting of an ICAO recommended practice for security in landside areas of airports, based on the approach already applied by the UK. The UK then led efforts in ICAO to have the recommended practice quickly adopted as a mandatory Standard by the ICAO Council, increasing security both for UK passengers and the travelling public around the world.

4.23 Beyond ICAO, the UK is influential in regional bodies, such as the European Civil Aviation Conference (ECAC), and has strong relationships with many individual states around the world. As noted in chapter 3, DfT and the CAA are working together to develop State Safety Partnerships with many states, while the government has a network of officials working to raise standards in aviation security around the world.

- 4.24 The Aviation Strategy will seek to maximise our influence by looking strategically across the global landscape of organisations, the wide range of activities the government undertakes and our working methods. This may involve reducing our involvement in some areas to focus it more in others. The government is considering whether our current position across a broad spread of working groups is the correct one to have. In addition, the government will look at the use of secondments to ICAO to increase the UK influence as we do in other international bodies. It may prove more effective to focus efforts to increase capacity building in international fora and build global engagement in certain issues, as opposed to engaging bilaterally.
- 4.25 The strategy presents an opportunity to ensure our international efforts across safety, security, the environment and economic regulation are coherent and coordinated. The government will ensure that it uses the influence the UK possesses to maximise the benefits to UK consumers and businesses from these international activities.



Facilitating the air freight market in the UK

- 4.26 Many of the respondents to the call for evidence underlined the importance of aviation and air freight to the UK economy. As an island nation in a globalised world, aviation is critical to enable businesses to deliver services across the world and to maintain the UK's place in international supply chains. A thriving air freight sector makes the UK more attractive for multi-national companies, and more able to attract international talent and tourists.
- 4.27 The industries which rely on aviation to deliver their products and services are often of high value to our economy. Aviation supports the more productive aspects of the UK economy and has directly and indirectly been a driver of innovation. As the Industrial Strategy identifies, tackling our productivity challenge is a priority for the government. The UK air freight sector is flourishing. In 2016, the volume of freight handled by UK airports grew by 5% to 2.4 million tonnes shipped.³⁰ There is also significant investment underway; last year, for example, ground was broken on Segro Logistics Park East Midlands Gateway – a 700 acre facility, which will link the airport with a major new rail freight terminal as well as the M1.
- 4.28 The government recognises the crucial role this sector plays in our economy, especially high end manufacturing, engineering, pharmaceuticals, retailing and the automotive sectors. For time-critical goods such as pharmaceuticals, air freight is the only method of shipping fast enough to deliver these items in the required timeframe.

³⁰ Civil Aviation Authority (2016): Airport Data

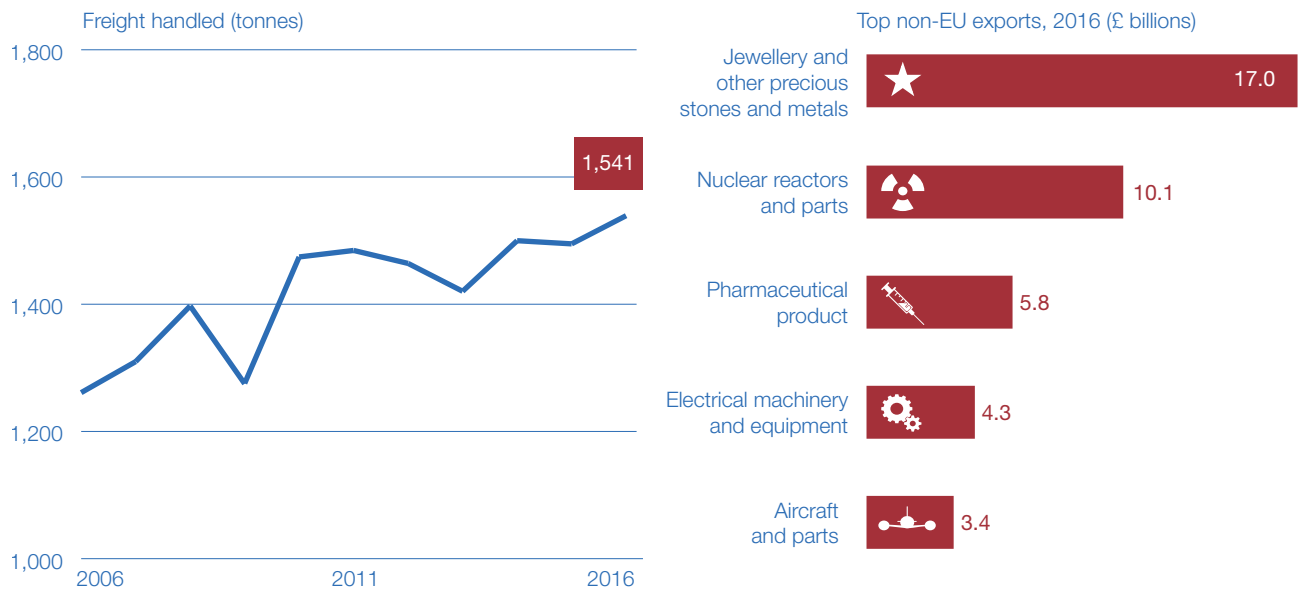


Figure 6 Freight handled at Heathrow Airport

- 4.29 Although the volumes are comparatively small, the value of air freight per tonne is much greater than other modes of freight, due to the nature of the goods transported. In 2016 goods worth around £178 billion were shipped by air between the UK and non-EU countries. This represented over 45% of the UK's non-EU trade by value. In 2016, Heathrow handled 64% of air freight by volume and is the UK's highest value port, with East Midlands Airport and Stansted being the next largest airports for freight transport. The importance of Heathrow to the air freight market, and its potential for growth, was an important consideration for the government in supporting its proposed expansion.
- 4.30 Air freight operates in several distinct markets: domestic; UK to EU/EEA; and UK to Non-EU/EEA. Dedicated fast parcel operators are dominant in the domestic market and, to a lesser extent, the UK to EU market, whereas the vast majority of long haul air freight is flown in the bellyhold of passenger aircraft. The UK and EU will continue to be important freight markets for each other after we exit the EU.
- 4.31 As the Aviation Strategy is developed, the government will engage with all major airports and all major operators across the market, and the businesses that rely on them, to identify barriers and understand what government can do to reduce them. This will include what action can be taken on infrastructure and capacity building, as explored further in Chapter 6.
- 4.32 The Aviation Strategy will set out our approach to working closely with industry and other government departments such as HM Revenue and Customs and HM Treasury, as well as industry organisations such as the

International Air Transport Association (IATA), the British International Freight Association and the Freight Transport Association, to help ensure that our air freight sector is at the forefront of technology and the facilitation processes.

Supporting aviation exports

- 4.33 The aviation sector itself provides at least £22 billion to the UK economy each year – with around £14 billion from the air transport sector and £8 billion from the aerospace sector.³¹ This covers a vast range of industries including airlines, airports, aircraft manufacture, aircraft maintenance, ground handling, air traffic management and regulatory expertise. In addition, the success of the aviation sector in the UK creates a platform for British companies overseas in many other sectors of the economy not included in the numbers above. For example, the terminal building at Stansted Airport completed in 1991 and designed by Foster + Partners was the start of many terminal projects across the world for the architectural firm.
- 4.34 The new international airport in Mexico City currently under construction was designed by Foster + Partners, who collaborated with Arup, another British company as their structural engineers. There are currently more opportunities in the supply chain for UK companies in the construction of this airport. Through the Aviation Strategy the government wants to encourage more collaboration and consortia building of UK firms overseas, a ‘Team UK’ approach.
- 4.35 The government believes there is untapped potential to enhance and expand the export of the UK’s world-leading aviation strengths to global markets. In the Aviation Strategy the government will look at what it can do to make full use of the UK’s potential and harness the support of the UK government across departments to deliver this. DfT, Department for International Trade (DIT), and the Department for Business, Energy and Industrial Strategy (BEIS) will work together to ensure aviation trade opportunities are prioritised.
- 4.36 In doing so, the government will work closely with industry, engaging with trade bodies, such as the British Aviation Group, ADS, and new bodies such as Infrastructure Exports:UK (part of the Department for International Trade, but industry led). The government will identify where it can support industry priorities at an SME level as well as with large companies. The government is looking at how to best leverage government networks to facilitate contacts, build the reputation of British companies and compete with the existing work undertaken by competitor countries. Our aim is to use government resources in the most effective way to deliver productivity and export growth in the aviation sector and beyond.

31 DfT analysis of ONS GDP low level aggregates



Encourage competitive markets

5. Encourage competitive markets

- 5.1 The UK has led the way in promoting competition in the aviation market from the privatisation of British Airports Authority (BAA) and British Airways in the 1980s, to the liberalisation of air routes from the 1990s. This has allowed new airlines to enter the market, including easyJet and Ryanair, to provide flights to new destinations, with increased frequencies and lower fares, from most of our commercial airports. It has also allowed UK airports to develop strong links to a number of global hub airports such as Schiphol with KLM offering flights to 14 UK airports and Dubai with Emirates providing 6 UK airports. These links allow passengers to connect to flights throughout the world.³²
- 5.2 This competitive market continued to develop into the 2000s with the Competition Commission, one of the Competition and Markets Authority's (CMA) predecessor bodies, ruling that BAA should be required to sell three of its airports to increase competition for the benefit of airlines and passengers.
- 5.3 The subsequent sale of Gatwick in 2009 followed by Edinburgh in 2012 and then Stansted in 2013 has led to the airports attracting airlines and passengers outside their traditional target market. This has seen both Gatwick and Stansted increasing their share of passengers travelling to and from London's airports and Edinburgh's share in Scotland increasing.
- 5.4 Independent estimates indicate that the benefits from improved connectivity and choice and downward pressure on fares could be worth around £870 million by 2020.³³
- 5.5 The Competition Commission also made a range of other recommendations including reforming the regulatory regime for airports. The CAA therefore now has a duty to promote competition across the airport and air traffic control sectors, together with related powers, some of which are held jointly with the CMA. The CAA currently regulates two airports under this framework – Heathrow and Gatwick.

32 DfT analysis of Civil Aviation Authority (2016): Airport/Airline Data, based on the number of scheduled passenger services

33 Competition & Markets Authority (2016): BAA Airports – Evaluation of the Competition Commission's 2009 market investigation remedies

5.6 Privatisation and liberalisation of the airport and airline industry has resulted in the most visible benefits for passengers, but there have also been benefits brought by competition in the services that support these industries, such as air traffic control towers, ground handling, rescue and fire-fighting provision and security. The government’s belief is that these markets are broadly working effectively and provide the right outcomes for consumers, but we will use the Aviation Strategy to consider whether there is need to promote further competition.

Encourage competition that benefits consumers

5.7 There is intense competition between airports and airlines and this brings benefits to consumers. However, there are some areas identified in the call for evidence that the Aviation Strategy will look at in more detail. Firstly, whether the development of a single dominant carrier at airports could harm consumer interests in the future. While British Airways has been a dominant carrier at Heathrow for a number of years (52% of flights in 2016), since 2000 other airlines have established a larger market share at some of our other largest airports (easyJet with 42% at Gatwick and Ryanair 78% at Stansted in 2016).³⁴

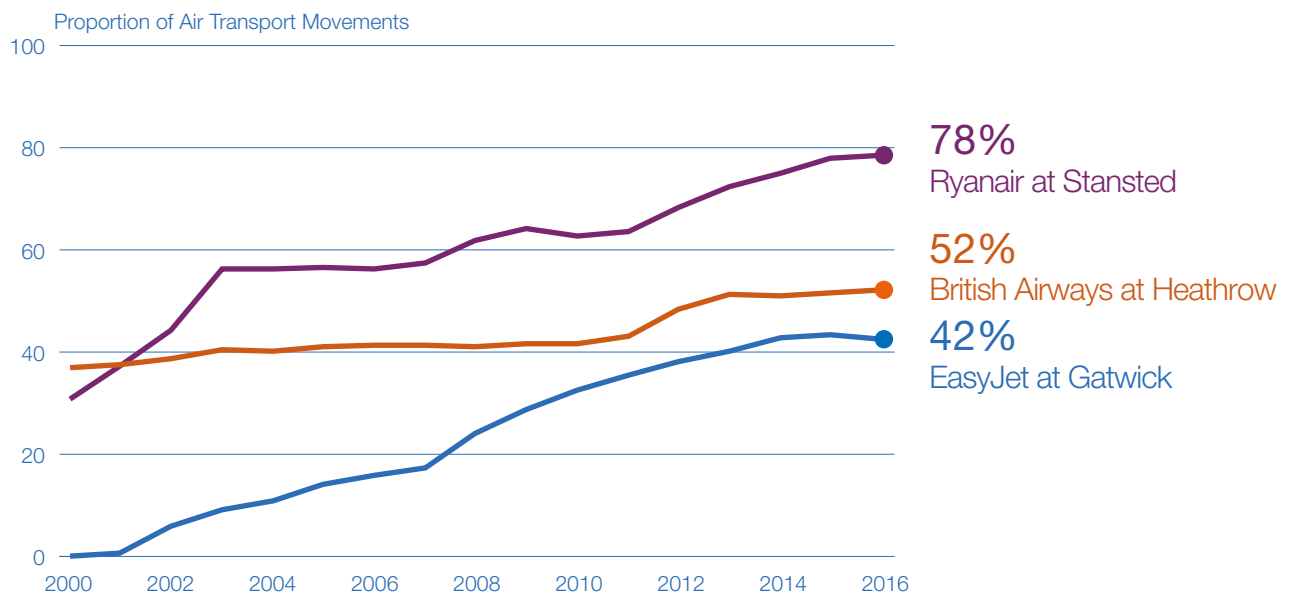


Figure 7 Percentage of Air Transport Movements (ATMs) conducted by single carriers 2000-2016

34 DfT Analysis of Civil Aviation Authority (2016): Airport/Airline Data

- 5.8 The government recognises the benefits of airlines developing large operating bases at airports as these lead to economies of scale which can benefit the consumer through lower fares, more destinations and greater frequencies. However the government wants to explore whether this dominant position has the potential to harm consumer interests.
- 5.9 A large number of responses to the call for evidence expressed concerns that while the market in ground handling services is competitive, market incentives are not necessarily incentivising the best outcome for either ground handling agents, airports, airlines or ultimately the consumer. The government will therefore look at what is driving market performance to see whether existing regulation is promoting effective competition.
- 5.10 While the market for terminal air navigation services in the UK has been liberalised since 1985, changes of service providers at major airports such as Gatwick (from NATS to ANS Ltd) or Birmingham (to self-supply) have only been seen in more recent years. While it is recognised that the UK is the most competitive environment in Europe, DfT requested that the CAA undertakes a review into whether the sector is subject to the right level of market conditions at relevant UK airports. The CAA is now consulting on its draft finding that appropriate market conditions do exist.³⁵ The government will consider the findings of this review as part of the Aviation Strategy.

Better regulation of airport slots

- 5.11 An airport slot is permission for an airline to use airport facilities, including the runway, stands, and terminals, for landing or take-off at a specific date and time. The allocation of slots at UK airports is governed by EU regulations, and based on IATA guidelines. The regulations are intended to support liberalisation of the EU aviation market by enshrining neutral, transparent and non-discriminatory rules on the allocation of slots. Airport Coordination Limited (ACL) is responsible for slot allocation and scheduling at 'coordinated'³⁶ UK airports.³⁷ The UK also has an active secondary trading market that allows airlines to exchange slots, which can include financial incentives. The EU regulations provide that an airline retains the right to use a slot (under the 'use it or lose it' rule) provided it has used it for at least 80% of the time in the previous period. Slots are therefore allocated on the basis of these historic (or 'grandfather') rights. Airlines are able to vary the use of slots for which they have historic rights, for example by destination and aircraft size. Grandfather rights provide certainty to airlines that they will retain their slots if they meet the criteria, which supports the provision of stable airline schedules and enables airlines to make long-term investment decisions, such as in newer, more environmentally friendly aircraft.

36 Co-ordinated airports are those where airlines' demand to operate services exceeds the airport infrastructure's capacity (or permitted capacity) for at least one scheduling period, and the imbalance therefore requires the formal allocation of slots by an independent co-ordinator.

37 Heathrow, Gatwick, Manchester, Stansted, Luton, Birmingham, Bristol and London City

35 <http://publicapps.caa.co.uk/docs/33/CAP1634%20Non-Confidential.pdf>

5.12 Slots that are not allocated to airlines on the basis of grandfather rights are placed in a ‘slot pool’ to be allocated by ACL. Under the current regulations slots created by new airport capacity, such as new runways or investment in other airport facilities, would be placed in the airport’s slot pool. New entrant airlines have priority for 50% of these slots, this ensures that new airlines can enter the market. The remaining 50% of pool slots, along with any unallocated slots for which new entrants have priority, are allocated by ACL to airlines already operating at the airport. These incumbent airlines have no entitlement to any particular share of new capacity slots not allocated to new entrants.

5.13 ACL considers a range of other criteria in allocating slots for which there are competing bids, including the size and type of market (for example, the level of services on a particular route), frequency and ‘local guidelines’ that are agreed by airlines, the airport operator, air traffic control and other users.³⁸ Local guidelines must be consistent with the EU regulation. Airlines make no payment for slots allocated from the slot pool.

5.14 One of the main challenges is that many UK airports have limited or no spare capacity at certain times of day, while the busiest (Heathrow, Gatwick) have little or no spare capacity at any time. This has resulted in airlines finding it increasingly difficult to acquire slots.

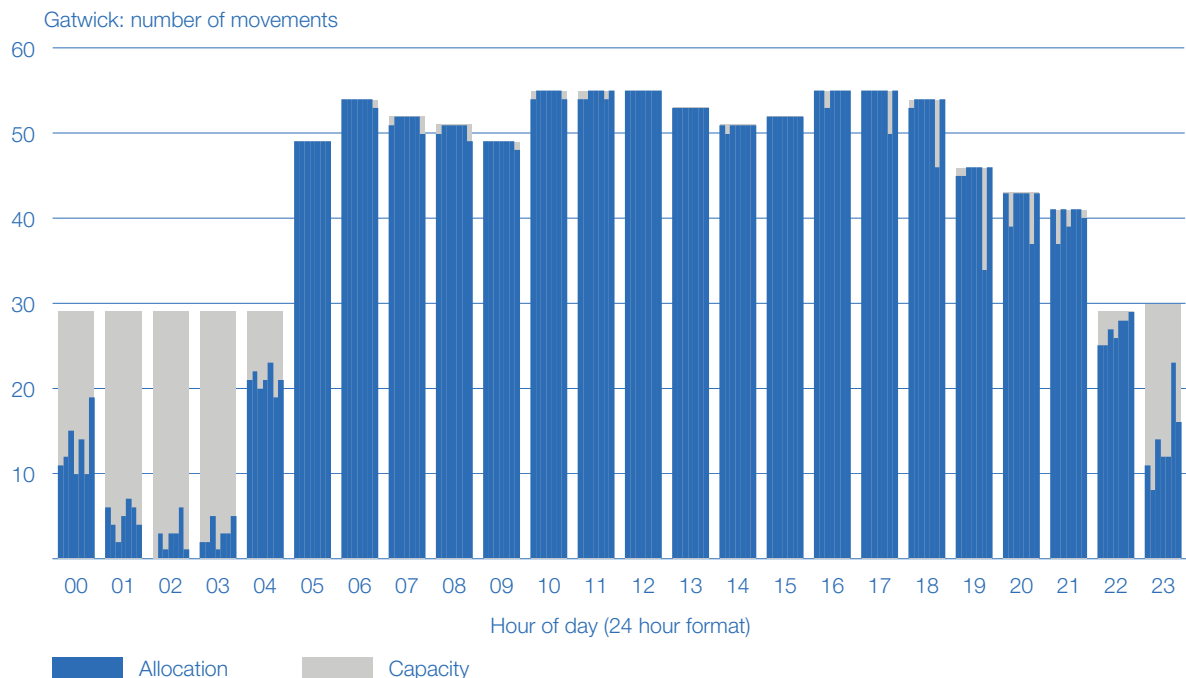


Figure 9 Gatwick: Total hourly arrival and departure slot allocation – representative of peak week, Summer 2018

38 These are based on the Worldwide Scheduling Guidelines published by the International Air Transport Association (IATA)

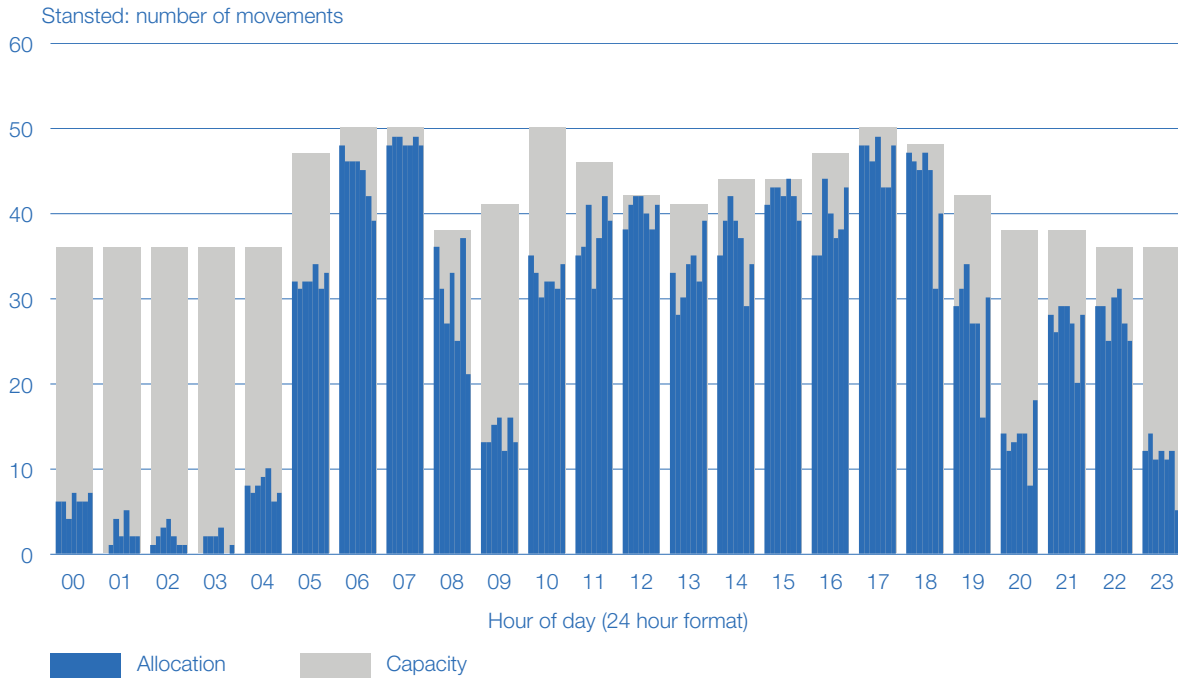


Figure 8 Stansted: Total hourly arrival and departure slot allocation – representative of peak week, Summer 2018

- 5.15 Concerns were raised in the consultation responses around the ability of airlines to acquire slots, particularly at congested airports, and whether the existing slot regulations incentivise behaviour that could harm the interests of passengers when new capacity is due to be allocated.
- 5.16 While a secondary trading market exists for slots, the prices attached to trades are often high, meaning that only airlines with high levels of capital can afford them. For example it has been reported that an airline purchased a single slot pair at Heathrow for \$75 million last year. This, combined with the system for slot allocation, and the rules around grandfather rights described above, has prompted questions as to whether the current slot regulations create barriers to competition.

5.17 The government recognises that the existing slot regulations ensure that airlines and airports can plan their operations effectively, and that the resulting economies of scale mean consumers will benefit from a more stable, frequent and comprehensive range of services. That said, the government wants to identify whether the market delivers the best result for consumers and, if not, to explore a range of possible solutions.

- 5.18 One area of particular interest is how new capacity can be best allocated. The government published a revised draft Airports National Policy Statement (NPS) that set out its preferred option for a new Heathrow Northwest Runway that would require sufficient slots to accommodate at least an additional 260,000 air transport movements per year.
- 5.19 The government will consult with industry on how new capacity should be best allocated in the interest of the consumer – while also noting an ambition to remain compliant with existing IATA Worldwide Scheduling Guidelines and any other regulatory arrangements. Within this framework, DfT will invite industry views on options to deliver the objectives of expansion, such as increasing domestic connectivity, opening up access to new global markets, increasing competition on existing routes, and maintaining the UK's hub status.
- 5.20 The overarching principle that will guide the development of the Aviation Strategy in this area is that slot regulation should be open, transparent and fair – and ensure the most efficient use of constrained capacity in consumers' interest.

Connections that help regions fulfil their potential

- 5.21 The UK is already one of the best connected countries in the world by air. Beyond London, the UK has six airports with more than 5 million passengers per annum, offering an intensive short-haul network and an increasing number of long-haul destinations.³⁹ In addition the UK has almost 30 smaller regional airports, including Leeds Bradford, Exeter, Doncaster-Sheffield, Norwich, that are served by low-cost and seasonal carriers.
- 5.22 Our airports also have strong connections to major hub airports, including Heathrow (8 UK airports connected), Paris CDG (19), Dublin (21), Munich (10), Frankfurt (7) and Istanbul (7).⁴⁰ Our regions also have good air connectivity to London with 13 airports having at least a daily flight to the capital, with over 11 million passenger per year making use of these flights, and over 20 million passenger per year make use of intra-regional flights within the UK.⁴¹



39 Civil Aviation Authority (2016): Airport Data

40 DfT Analysis of Civil Aviation Authority (2016): Airport Data

41 DfT Analysis of Civil Aviation Authority (2016): Airport Data

- 5.23 While the total number of UK regional airports connected to Heathrow has remained relatively stable over recent years, the total number of terminal passengers from UK regional airports handled by London Heathrow between 2000 and 2016 has fallen.⁴² While this has been partly caused by high demand for slots at Heathrow, which has perhaps forced domestic routes out for more profitable long-haul routes, it has also been impacted by increased competition from other London airports, and by rail, which can often serve point to point traffic to central London more effectively than Heathrow. Regional airports have also been increasing their connections to other hub airports, in particular Schiphol. Schiphol now handles up to 8 million UK passengers a year, 60% of whom connect to onward flights.⁴³
- 5.24 Responses to the call for evidence raised concerns that a number of regions do not have the connectivity, in particular to Heathrow Airport, they require to support economic growth for the regions they serve. The government will therefore examine the connectivity that our nations and regions have between each other, to key overseas markets and to hub airports to allow onward connectivity.
- 5.25 Increased airport capacity in the South East will improve regional connectivity. In the context of expansion, the revised draft Airports NPS has set out a clear expectation that any expansion of Heathrow Airport should deliver an increase in the number of UK airports with connections specifically into the airport. The revised draft NPS states that the government is determined that new routes be secured, and it will hold Heathrow Airport to account on this. The Secretary of State for Transport has also set a further expectation that up to 15% of slots at a potentially expanded Heathrow Airport will be used for domestic routes.⁴⁴
- 5.26 Under existing policy, the government has sought to protect connectivity to London, through the establishment of Public Service Obligations (PSOs) as governed by EU regulations.⁴⁵
- 5.27 PSOs allow government to set the service level an airline should provide on given air routes to meet the needs of the consumer if the market itself does not deliver an acceptable level of air transport services to a given region. It also allows government to award exclusive rights (with or without compensation) to an airline to operate a given route.

42 DfT Analysis of Civil Aviation Authority (2016): Airport Data

43 Schiphol Group (2015)

44 Transport Select Committee, 7 February 2018, Oral evidence: Airports National Policy Statement, HC 548: <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/transport-committee/airports-national-policy-statement/oral/78105.html>

45 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/266383/pso-policy-guidance.pdf

5.28 The government will examine the level of connectivity by either air, rail and road in connecting the UK's nations and regions, as well as to key overseas markets and hub airports to allow access to long-haul destinations. If suitable connectivity does not exist to meet a clear demand, then the government will look to develop a methodology for assessing the economic benefits that air connectivity provides to a region, and consider what role government should play. This could range from protecting slots at key airports, route development funds and PSOs.



Taxation and regulation that support the sector's competitiveness

- 5.29 As well as encouraging competition within markets, the UK also has to ensure that it remains competitive in the global marketplace. The response to the consultation showed the concerns of industry and others about the impact that Air Passenger Duty (APD) has on the sector, as well as the disproportionate impact some regulatory requirements can have on smaller airports.
- 5.30 APD is charged on departures from UK airports but not on arrivals. It becomes due when a flight departs, and is payable by the operator of the aircraft. The amount due is dependent on the final destination and passenger's class of travel. In line with ICAO rules, the UK does not tax fuel used for international flights.⁴⁶ While some other countries levy VAT on domestic flights, there is no VAT on domestic flights within the UK.
- 5.31 Therefore, although the UK's level of APD is higher than comparable taxes elsewhere, in its absence aviation would be relatively under-taxed compared with other goods and services. This ensures that the aviation sector contributes toward general taxation – raising at least £3.1 billion per year.⁴⁷ APD has not held back passenger growth in recent years – in 2016 UK airports handled 268 million terminal passengers, a 7% increase from the previous year.⁴⁸

46 Domestic flights are also exempt in the UK

47 HMRC (2015): Air Passenger Duty Bulletin

48 Civil Aviation Authority (2016): Airport Data

- 5.32 The government wants to see success in the aviation sector to continue to enable tourism, connect consumers and businesses with international markets and create jobs. In light of this the government has made a number of reforms to reduce the effect of APD on consumers, such as exempting children on economy flights and freezing the short-haul and long-haul reduced rate of APD for the tax year 2019 to 2020 at the 2018 to 2019 level.
- 5.33 The government has also announced a call for evidence on the impact of VAT and APD on tourism in Northern Ireland. This will help to establish the significance of any impacts that VAT and APD have on tourism and how they may be used to support the tourism sector in Northern Ireland. The call for evidence runs until June. The government will respond at the next Budget in the autumn of 2018.
- 5.34 The government would like to use the Aviation Strategy to hear from industry about how APD could be reformed to support regional airports as well as other policy objectives of the strategy, such as environmental, growth, competition and connectivity.
- 5.35 Given the strong interaction with EU law, HM Treasury is exploring the impact of APD on the competitiveness of the UK aviation industry, and on the UK's connectivity to key international markets after the UK has exited from the EU. DfT will support HM Treasury in this work. The government will also consider how aviation taxation policy could support sustainable growth in and routes from airports of all sizes.



Supporting the general aviation sector

- 5.36 The GA sector benefits the UK economy in multiple ways. It provides direct economic benefits, for instance through generating employment at regional airports and business links, and also skills benefits.
- 5.37 GA can be defined as private or commercial aviation that is neither military aviation nor scheduled commercial air transport. It covers a diverse sector, including business jets, fast parcels, aerial work, such as flight displays, aerial photography, air sea rescue, police and ambulances, flight training, and leisure activities, such as recreational light aircraft flying, gliding, microlights, parachuting, and hot air balloons. Ensuring that smaller airfields are able to thrive is an important issue for the GA sector.
- 5.38 The government believes that it is important to ensure a long term strategic vision for the GA sector that helps it to realise its full economic potential. In 2015, the government published the world's first GA specific strategy with a vision of making the UK the best country in the world for GA. The new Aviation Strategy will complement, and update where necessary, the 2015 GA strategy.

General Aviation Champion

The government has appointed Byron Davies as the new general aviation Champion with a remit to review the current position of UK airfields and identify aerodromes that constitute a strategic network for GA's contribution to the economy. He will provide a report by the end of the year which will feed into the final Aviation Strategy.

- 5.39 Respondents to the call for evidence from the GA sector highlighted the important role that it plays in providing an effective network of airfields and the training of pilots. An issue of particular concern was the number of airfields that are at risk of closure due to the attractiveness of some sites for developments such as housing. Respondents also highlighted the role of GA in developing important aviation skills, including pilot training and engineering.
- 5.40 In March 2018 the government launched a consultation on the revised National Planning Policy Framework (NPPF). The draft NPPF text states that transport issues should be considered from the earliest stages of the planning and development process, so that the potential impacts of development on transport networks can be addressed. In particular it strengthens the language on airfields and aviation networks. The NPPF also states that all planning policies should recognise the importance of maintaining a national network of general aviation facilities, taking into account their economic value in serving business, leisure, training and emergency service needs.



Support growth while tackling
environmental impacts

6. Support growth while tackling environmental impacts

- 6.1 The UK has the biggest aviation market in Europe and the third largest in the world, while London has the busiest airport system of any city in the world. Aviation creates jobs in the UK, supports our economy to grow and connects us with the rest of the world as a dynamic trading nation.
- 6.2 Demand for air services has grown strongly in recent decades, and the government expects that demand will continue to rise significantly between now and 2050. There is clear and strong evidence that there is a need to increase capacity in the south-east of England by 2030. The government has set out its preferred option of the Heathrow Northwest Runway in the revised draft Airports NPS for addressing this need.
- 6.3 The continued growth of the sector also creates challenges that will need to be addressed for the wider resilience of the airport system. We need to ensure our airspace is modernised by creating the right incentives and structures to support industry's programme. There is also a need to provide sufficient coordination and long-term planning of road and rail links to airports to meet the needs of consumers and the environment.
- 6.4 In parallel, the government must ensure that growth is sustainable and is balanced with local and global environmental concerns. The government has an important role in ensuring the negative impacts of aviation are mitigated. At a local level, aviation noise is the key environmental concern, and the government will consider whether the right regulations, controls and incentives are in place to ensure the sector continues to address noise impacts as well as tackling air quality concerns. At a global level, the government will consider our overarching framework for tackling UK aviation's carbon emissions to 2050 and how this can ensure that aviation contributes its fair share to action on climate change.

- 6.5 With 8 million tonnes of plastic making their way into our oceans each year plastic pollution is one of the biggest challenges facing the marine environment. The government is keen to work with the aviation sector to find a way to reduce the usage of single use plastics on aircraft, as well as increase the numbers of drinks containers reused or recycled at airports.
- 6.6 Respondents to the call for evidence ranked the objective of supporting growth while tackling environmental impacts as second only to safety and security in their order of priority for the strategy. The top six issues mentioned by respondents all related to the challenges of delivering future capacity, utilising current capacity and addressing the concerns that people have in respect to aviation's contribution to noise, air quality and carbon levels. The interdependencies of these issues has confirmed the government's view that they should all be addressed together as part of a single objective in the aviation strategy.

Developing a framework for growth

- 6.7 There hasn't been a new runway built in south-east England for over 60 years. The government has reached a preference to support a new Northwest Runway at Heathrow Airport. The development of the revised draft Airports NPS has set out the proposed policy framework and the government carried out a further consultation on the revised draft NPS last year. This will be subject to ongoing parliamentary scrutiny ahead of an anticipated vote in the summer. The government hopes that this will result in a clear way forward in order to address the identified capacity needs to 2030 in the south-east.
- 6.8 The Aviation Strategy will look to address what should constitute a framework for future sustainable growth throughout the country beyond 2030. It will consider how the UK can balance environmental costs with the economic benefits of aviation growth.



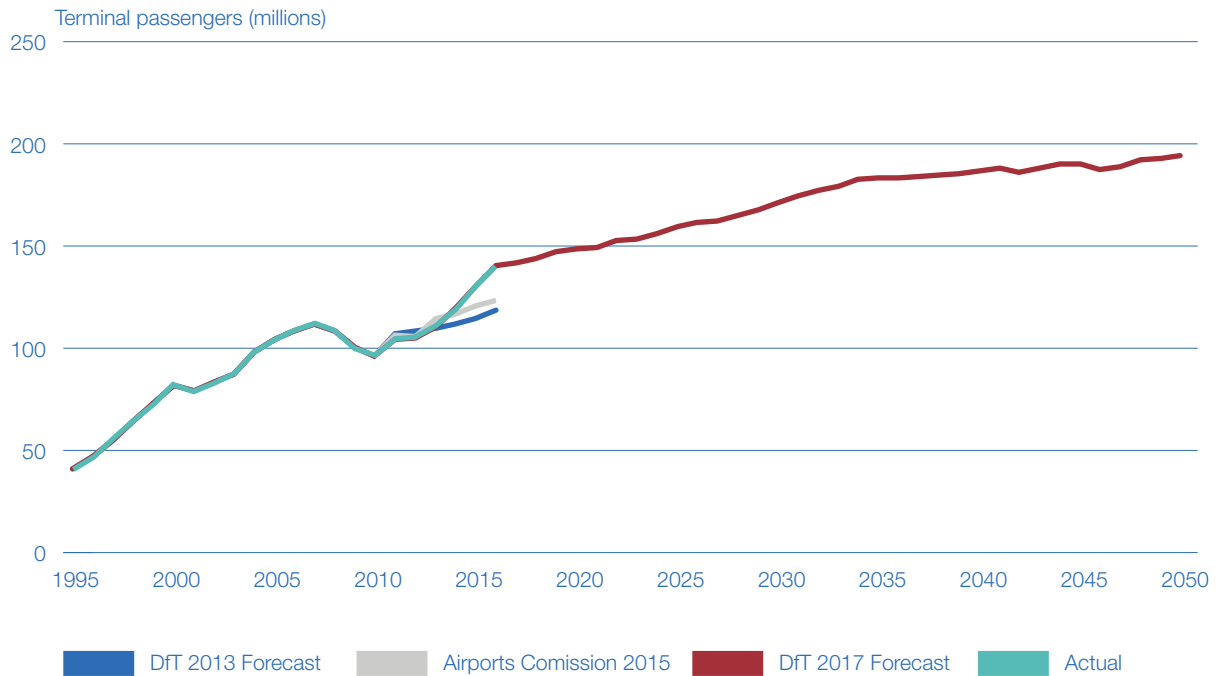


Figure 9 Terminal passengers at London airports, forecast and actual – scenario under no expansion

6.9 While the government is not recommending a particular approach, it is interested to hear views on how this could be taken forward. In parallel the government will consider what the carbon and wider environmental framework should be to inform the final policy on sustainable growth. This will include setting a national carbon policy for aviation, and considering additional noise policies including noise targets, as well as assessing what the benefits are for consumers and businesses when airports are able to expand. The government will also consider whether local planning and central government policies could be more

aligned to safeguard long-term planning, and how best to integrate the views of communities and environmental organisations on airport capacity.

Tackling carbon emissions

- 6.10 UK aviation accounted for around 7% of the UK's total greenhouse gas emissions in 2016, an increase from around 5% in 2005.⁴⁹ This share of UK emissions is likely to continue to increase in proportion to other sectors, such as energy and manufacturing, as these are able to decarbonise more quickly.
- 6.11 Many respondents to the call for evidence highlighted the need for a clear approach to tackling aviation's carbon emissions, taking into account the UK's domestic and international obligations, to ensure that aviation contributes its fair share to action on climate change.
- 6.12 In the UK, the Climate Change Act 2008 sets a legally binding target for the UK to reduce its greenhouse gas emissions by at least 80% by 2050, compared to 1990 levels. This target includes UK domestic aviation (flights which take off and land in the UK) but does not include emissions from international aviation. The government will use the Aviation Strategy to re-examine how the aviation sector can best contribute its fair share to emissions reductions at both the UK and global level.
- 6.13 Globally, international aviation's carbon emissions currently account for less than 2% of total emissions,⁵⁰ but these could increase by two to four times between now and 2050.⁵¹ Internationally, the UK is committed to taking action to ensure that aviation plays its part in contributing to the 'well below two degrees goal' established by the Paris Agreement in 2015, and to the International Civil Aviation Organisation's (ICAO's) goal of carbon neutral growth from 2020. Significant progress has been made towards this objective. Most notably, the UK played a crucial role in reaching agreement at the ICAO Assembly in October 2016 on the first ever sector based global climate change deal for aviation, an offsetting scheme involving the purchasing of emissions reduction credits from other sectors, known as the Carbon Offsetting and Reduction Scheme for International Aviation, or CORSIA. The Aviation Strategy will consider what further action the UK wants to encourage across ICAO's full range of policy measures.

49 Department for Business, Energy and Industrial Strategy (2016): Final UK Greenhouse Gas Emissions National Statistics

50 European Commission (2017): Emission Database for Global Atmospheric Research (EDGAR), CO₂ Time Series 1990-2015 per region/country

51 ICAO: Environmental Report 2016

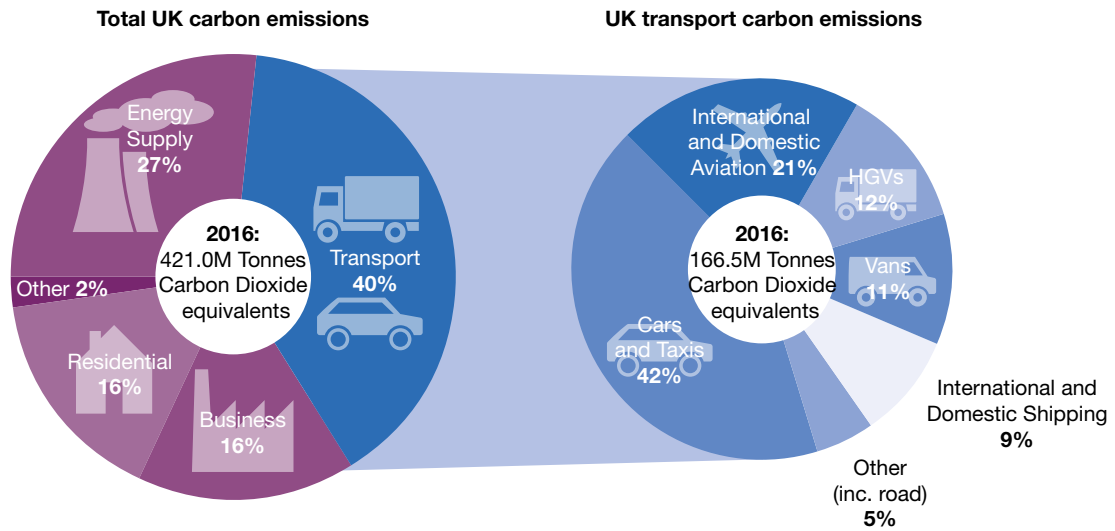


Figure 10 UK carbon dioxide emissions by source

- 6.14 In Europe, aviation has been included in the EU Emissions Trading System (ETS) since 2012. As set out in the Clean Growth Strategy, the government is considering the UK's future participation in the EU ETS after our exit from the EU. Whatever our future relationship with the EU, the government will seek to ensure that our approach is at least as ambitious as the existing scheme and provides a smooth transition for the relevant sectors.
- 6.15 It has long been the government's position that international aviation emissions are best tackled at the international level. This reflects the inherently global nature of both the aviation industry and the challenge of climate change. Airline schedules are designed so that an aircraft may fly between any number of states in any given day and be registered to an operator in a different state altogether. Assigning portions of the aircraft's emissions to different states is problematic, particularly in the absence of an agreed international methodology.
- 6.16 Stronger action at the UK level without an equivalent level of action internationally is likely to impose greater costs on airlines flying to and from the UK, thereby putting UK airlines at a greater competitive disadvantage compared to foreign airlines and potentially increasing fares. Passengers may, as a result, choose to travel through other airport hubs which would simply move the emissions elsewhere rather than reducing them (known as carbon 'leakage').
- 6.17 In addition to the government's emphasis on international action, it has always been willing to consider all cost effective measures to ensure that the sector continues to contribute to the UK's emissions reduction obligations, including under the Climate Change Act and Paris Agreement.

- 6.18 The Aviation Strategy will investigate what technical and policy measures are available to address aviation emissions and what their combined impact could be. It will then consider what the possible combination of measures could be through to 2050 and how that relates to the recommendation of the Committee on Climate Change. These include operational and technological improvements as well as the use of sustainable alternative fuels and policies to encourage behavioural change.
- 6.19 Operational measures have the potential to contribute significantly to emissions reductions. Many such measures are well established, such as minimising empty seats, reducing cabin weight and supplying aircraft, while at their gate, with ground power and air conditioning from the airport terminal rather than the aircraft running its engines or additional generators. Other operational measures, such as alternatives to engine power while taxiing, are still in the development stage and may particularly benefit from policy support. Modernisation of the UK's airspace is fundamental to improving the operational efficiency of the sector with the benefit of associated carbon reduction and is a government priority.
- 6.20 Aerospace technology has improved fuel efficiency significantly over recent decades and this is expected to continue. As noted in the call for evidence, the government has committed, through the Aerospace Technology Institute (ATI), £1.95 billion for aerospace research and development from 2013 to 2026, a figure matched by industry to give a joint fund of nearly £4 billion. The majority of this is used to develop more environmentally-friendly aerospace technologies and improve manufacturing processes. In March 2018 the government announced £24 million of investment to support four Rolls-Royce led research and development projects that will develop the next generation of aircraft engines.
- 6.21 The government could seek to provide further policy support for research and development of technologies to improve fuel efficiency or consider measures to ensure the most fuel efficient aircraft are using UK airports. Step changes in aviation technology such as hybrid and electric aircraft offer the potential to mitigate environmental issues, including carbon and noise emissions. The government will therefore work with bodies like the ATI and key industry players, to support the emergence of hybrid and electric aircraft use, where it makes commercial and transport sense. The future role of technologies such as these is explored in more depth in chapter 7.

- 6.22 Sustainable alternative aviation fuels are widely seen as essential to the long term sustainability of the aviation sector. The government has legislated to extend eligibility of the Renewable Transport Fuels Obligation to aviation fuels and through the Future Fuels for Flight and Freight Competition government has made £22 million of matched capital funding available to support the production of low carbon fuels for aviation and Heavy Goods Vehicles. Through the Aviation Strategy the government will consider policies it can put in place to further assist the long term uptake of sustainable alternative fuels in this sector which is particularly difficult to decarbonise.
- 6.23 Where it is cost effective and proportionate, the government will examine policies that make airlines and passengers more aware of the carbon implications of their actions and encourage them to operate and travel more efficiently to reduce their carbon impacts.
- 6.24 The government's Aviation Strategy presents an opportunity to take stock of the considerable progress made in recent years by both industry and government and to look ahead at what further action is required between now and 2050. The government will look again at what domestic policies are available to complement its international approach and will consider areas of greater scientific uncertainty, such as the aviation's contribution to non-carbon dioxide climate change effects and how policy might make provision for their effects.

Managing noise and other local environmental impacts

- 6.25 The government recognises the impact on communities living near airports and understands their concerns over local environmental issues, particularly noise. As airports grow, it is important that communities share in the economic benefits of this growth, and that adverse impacts are mitigated where possible. The Aviation Strategy will explore whether the UK has the right regulation, controls and incentives to ensure the sector continues to address aviation noise and pays for its impact on communities in a manner which is proportionate to its growth. The government also wants to ensure that there is a suitable framework to manage other local environmental issues, including air quality. Surface transport continues to be the main contributor to local air quality emissions around airports which will be tackled through approaches such as the air quality plan for nitrogen dioxide published last year. Although only 1.4% of total transport NOx emissions comes from aircraft landing and taking off, the government wants to ensure the aviation sector plays an appropriate role in managing the emissions that it can control.⁵²

52 Department for Transport (2015): Transport energy and environment statistics, Air pollutant emissions by transport mode

6.26 New generation aircraft⁵³ now entering into service in the fleets of major airlines such as British Airways and easyJet are up to 50% quieter on departure and 30% quieter on arrival⁵⁴ than the aircraft they are replacing, and new aircraft designs must now comply with more stringent international noise standards. Twelve times as many people are affected by road noise, and three times as many by rail noise, than those affected by aviation noise.⁵⁵ Despite these statistics, the Survey of Noise Attitudes 2014 showed that people are now more sensitive to aviation noise than was previously the case.⁵⁶ The reasons behind this are complex, but it is clear that communities are concerned by a number of factors including recent growth in the overall number of flights at some airports, as well more concentrated flightpaths, aircraft flying lower or in places which people do not expect, and flights during the night.

6.27 The government is already acting on aviation noise. It sets noise controls at Heathrow, Gatwick and Stansted (the 'designated' airports) to balance the impacts on communities with benefits to the UK economy. At other airports, similar noise controls are set locally, either as planning conditions or using airports' own powers under the Civil Aviation Act to apply penalties to airlines. The government also announced new airspace and noise policies in October 2017 which will ensure airspace change decisions better take account of communities' views, are based on robust evidence and consider local circumstances, as well as establishing an Independent Commission on Civil Aviation Noise (ICCAN).

Independent Commission on Civil Aviation Noise

ICCAN is an independent body established to be a credible and authoritative voice on aviation noise issues. It will allow communities to have a greater stake in noise management and, where necessary, will challenge industry to enhance its approach to assessing and mitigating noise impacts and engaging communities.

53 Such as the Airbus A320 neo, Boeing 737 MAX, the Boeing 787 'Dreamliner' and the Airbus A350.

54 Based on their noise 'footprint' at a given decibel level.

55 Environmental Noise Directive Strategic Noise Mapping (2012): <http://noise.eea.europa.eu/>

56 Civil Aviation Authority (2014): Survey of noise attitudes 2014

- 6.28 The government will build upon these changes by reviewing, and revising as necessary, its policies relating to the local environmental impacts of aviation to ensure they are fit-for-purpose. In particular the government will consider noise reduction in the context of airport growth; how reducing one emission, such as carbon, affects other emissions, such as noise; the most appropriate way to measure the industry's long term performance in noise reduction; explore whether current compensation arrangements are adequate; and consider the response to housing demand near airports which exposes more people to noise.
- 6.29 The challenge for the Aviation Strategy to address will be to ensure that the right regulatory arrangements are in place to manage these impacts, particularly noise, but also other issues such as air quality. Policy options that the government intends to explore include setting noise targets and aviation specific air quality targets; strengthening noise controls and enforcement of these controls; strengthening incentives to bring forward production and operation of quieter aircraft; enhancing compensation for those exposed to significantly increased levels of aviation noise in the airspace change process, and the use of other types of mitigation where noise reduction is not possible.

Deliver successful airspace modernisation

- 6.30 Another important consideration for the future growth of the sector is how the UK uses and manages its airspace. The UK's airspace structure is an essential, but largely invisible, part of our national transport infrastructure, and it is also some of the most complex in the world.
- 6.31 The UK's airspace can be divided into two main categories – controlled and uncontrolled. Aircraft flying in controlled airspace do so under the direction of air traffic controllers. The vast majority of commercial flights operate in controlled airspace. Uncontrolled airspace typically incorporates all areas at lower altitudes where there is no operational safety reason for aircraft to be identified and managed by air traffic control. The GA community operates largely in uncontrolled airspace alongside the military and a small number of commercial flights.
- 6.32 Our airspace is already struggling to keep pace with the growing demand for aviation. More traffic is being squeezed into the same congested areas of airspace, causing inefficient flight paths that are not optimised to reduce noise, passenger delays and poor resilience to disruption, such as that which can occur from bad weather or technical difficulties. The UK's aviation industry has expanded significantly since the 1950s and 1960s when much of our airspace structure was first designed. Since then airspace has been added to and adapted in response to growing traffic levels, but many departure routes at our major airports, for example, have been little changed for many years, even several decades.

- 6.33 If the structure of UK airspace is not upgraded, the lack of capacity is expected to lead to a sharp increase in air traffic delays. This creates costs and disruption for passengers and businesses, and leads to more planes queuing in holding stacks, which cause unnecessary noise and emissions around airports. NATS predicts that air traffic delays will increase to 5.6 million minutes a year (on average almost 30 minutes per delayed flight) by 2030 as traffic grows if airspace is not modernised. If delays reach this level, more than 1 in 3 flights from all UK airports are expected to depart over half an hour late.⁵⁷ An increase in delays would also have noise consequences on the ground, for example from the greater use of holding stacks.
- 6.34 Modernising our airspace will be beneficial for the aviation industry and for local communities affected by aircraft noise. It will mean journeys are quicker, quieter and cleaner. It will cut aviation emissions per flight and save fuel through more direct routings and improved flight efficiencies and reduce noise from holding at lower altitudes.
- 6.35 The strategic case and benefits of modernisation are well established. The challenge which the government will seek to address through the Aviation Strategy is ensuring that the right roles, structures, powers and incentives are in place to successfully deliver this modernisation.
- 6.36 The government has already made significant progress towards this. In October 2017, a new airspace change framework was published that will ensure a greater focus on industry and communities working together to find ways to manage the noise impacts of individual airspace changes. The new process includes:
- greater cost benefit analysis of different flight path options
 - a Secretary of State for Transport call-in power for airspace changes of national strategic importance
 - the establishment of the Independent Commission on Civil Aviation Noise, which will provide advice on the noise impacts of airspace changes
- 6.37 As part of the Aviation Strategy the government will now consider whether further policy is required to support airspace modernisation. In particular, the government recognises that there is a key policy challenge to coordinate multiple different airspace changes across different airports. As part of the initial phase of this coordination work the Secretary of State for Transport has commissioned NATS to produce a feasibility assessment of the potential future demands for airspace of airports in the south of England, which is expected to report in May 2018. The focus of this work is to ascertain whether the projected increase in demand for air travel can be accommodated within our airspace, whether and where airports may have the same demands over the same airspace, and the best sequence for implementation. This work will set the context for individual airspace design changes that will follow.

⁵⁷ Department for Transport (2017): Upgrading UK Airspace, Strategic Rationale

- 6.38 The government also expects to introduce new arrangements to take forward the delivery of the airspace modernisation programme, including a new governance structure defining and overseeing the overall programme. Airports will need to develop their airspace modernisation proposals in conjunction with each other where there are interdependencies between their airspace designs. This creates a potential issue. Should one airport decide not to progress with an airspace change that has interdependencies with other airspace changes, it could create delays for other airports.
- 6.39 The government will therefore consider through the Aviation Strategy whether it needs to take new enforcement powers to require airports to take forward, or to hand over to NATS to take forward, particular airspace changes that are important for wider airspace modernisation. Any enforcement powers would be subject to primary legislation. The government would also like to progress proposals to modernise the licensing framework for national air traffic control services, though this will also be contingent on primary legislation.

Road and rail links to airports

- 6.40 The government recognises the importance of surface transport to airports for passengers the aviation industry. Responses to the call for evidence highlighted this, and the important role that good quality and choice of road and rail links to airports has in supporting local, regional, and national growth.
- 6.41 The aviation industry is usually the bearer of the cost of upgrading or enhancing the transport networks that exclusively benefit its consumers, with consideration given to additional public funding on a case-by-case basis when benefits are shared more widely. While it is right that airports should continue to pay for infrastructure for which their consumers solely benefit, the government recognises that there are a number of issues associated with this approach.

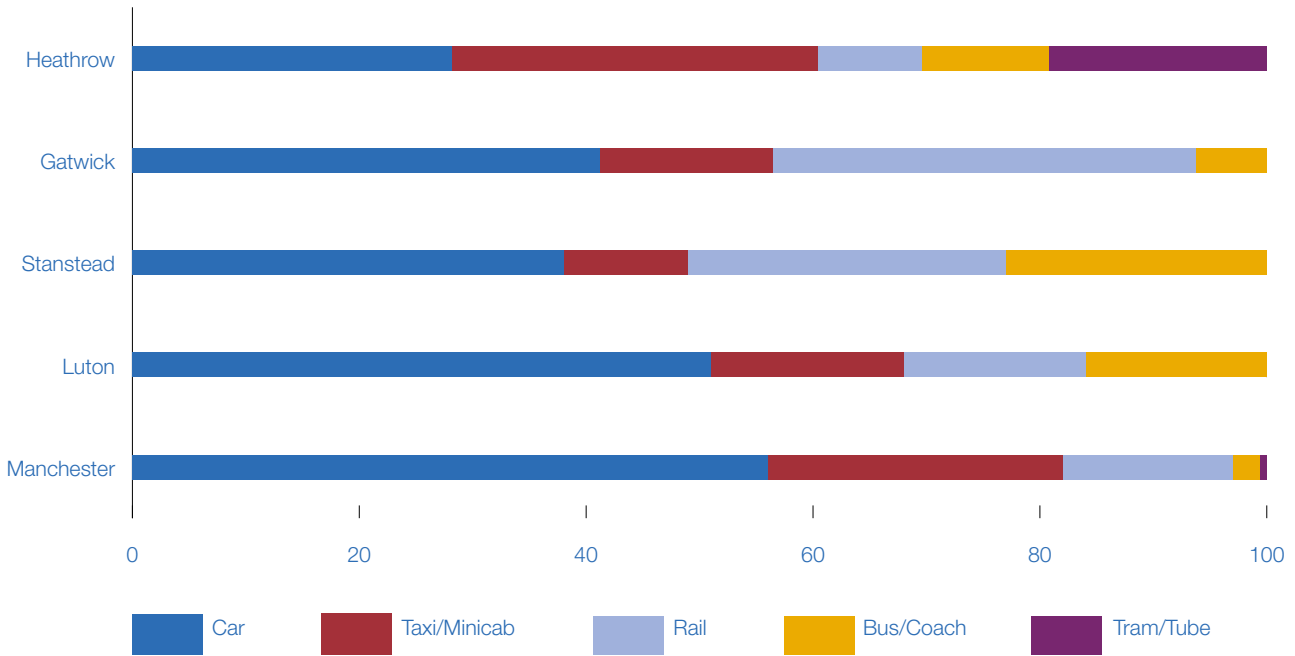


Figure 11 Percentage mode of transport to selected airports – based on the CAA Departing Passenger Survey, 2016

6.42 As airports grow, surface access options need to be developed in tandem to cater for increased passenger numbers travelling to and from the airport. As highlighted in a number of call for evidence responses, this coordination of public and private investment is difficult, and at times can seem uncoordinated. This challenge can often be compounded by the private ownership structures of UK airports, which can potentially make providing necessary funding for road and rail infrastructure in line with government expectations and timescales difficult.

6.43 It was also noted in a number of responses that consumer access to appropriate sustainable travel solutions and environmentally beneficial mode-share targets are important considerations in the provision of surface access links to airports. Historically, there has been an emphasis on moving traffic from roads to coach and rail, however in the longer term government would like to consider the impact of surface access planning that incorporates likely environmentally friendly technological developments such as the use of electric vehicles.

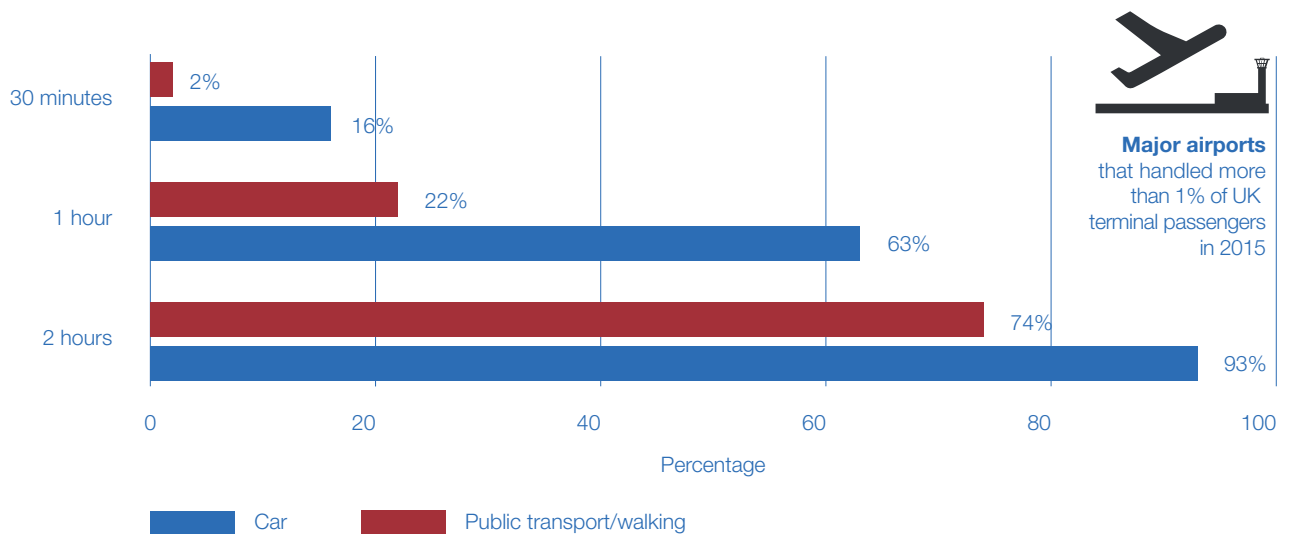


Figure 12 Percentage of population able to access major airports – within given times, England 2015

6.44 As the Aviation Strategy is developed, the government will reflect on the role of airports in existing surface access processes. Through its current investment cycles, the government expects transport service organisations like Network Rail and Highways England to work with the industry to provide surface access provision to airports across the UK. This work should take into consideration both the needs of the aviation passenger and the environment, as well as wider considerations for these networks. The government is already working to ensure that the aviation sector is fully engaged with forthcoming investment, and that airport plans and future government transport access improvements are well coordinated. The Aviation Strategy will be used to explore the aviation sector's understanding of these processes, and set out clearly how they should continue to engage with surface access providers to achieve their aims.

6.45 The government will also consider the current funding arrangements for surface access service provisions. As part of this, it will investigate the appropriate investment risk sharing and funding models required to support the development of surface access projects at airports, in line with current work such as the recent publication of the Rail Market-led Proposals guidance. This will consider how government can accommodate airports and airlines that are looking to invest in surface access schemes alongside Highways England and Network Rail investment processes.

- 6.46 The government will also consider the question of ownership of infrastructure through processes such as the Road Investment Strategy, and consider the relative merits of airports, local or national government owning the road or rail links to the airport. The Aviation Strategy will consider the planning and provision of road and rail access for airports, and the respective roles of government at the national and local level, airports, and wider industry. This will include environmental elements of surface access including factors such as promotion of greater incentives for staff and passengers to use sustainable modes of travel to transport to and from airports in the future.
- 6.47 However, it is not just the physical infrastructure that is important for aviation. While an airport might have a rail link and a station located conveniently, it is the routes, frequencies, and journey times of the rail services provided that can create benefits for airport passengers. The government will look to review the airports' engagement with the rail industry planning process to confirm the needs of airport consumers are given proportionate consideration in the process.

Better planning to improve resilience

- 6.48 The UK's airport and airspace capacity is constrained, and there will be no new significant airport runway capacity until 2025. The benefits of airspace modernisation are still a number of years away. The situation is particularly acute in the south-east of England where increases in capacity have been achieved through higher utilisation of existing runways and airspace.
- 6.49 While this brings more choice and competition, it makes airports vulnerable to potentially disruptive events such as severe weather. For example, 48 hours of snow disruption in December 2010 cost Heathrow £20 million. British Airways estimated its lost revenue from disruption during the winter of 2010-11 as approximately £50 million. Passengers suffer most in terms of delayed or cancelled flights.
- 6.50 At the UK's busiest airports delays have been increasing in recent years. Without industry working together this performance may continue to decline further as aircraft movements grow.⁵⁸

⁵⁸ NATS Blog (2016): Record demand will put pressure on airspace capacity

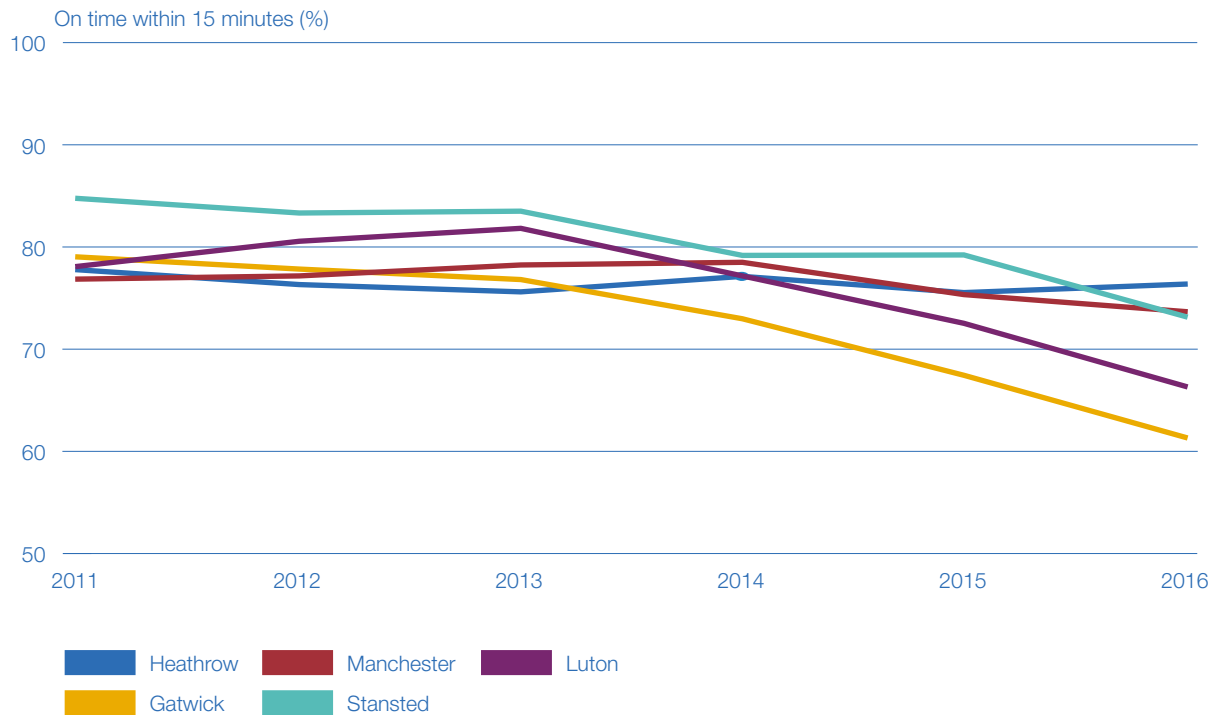
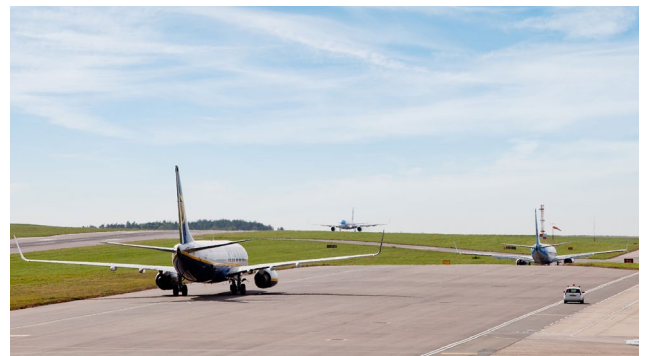


Figure 13 Percentage of flights on time within 15 minutes

6.51 In 2017 the CAA published its report ‘Operating resilience of the UK’s aviation infrastructure and the consumer interest’, which concluded that collective cross-industry action was needed to mitigate the risks to consumers arising from events which impact upon aviation resilience.⁵⁹ The government is working jointly with the CAA, NATS and industry representatives to consider how co-ordinated resilience planning can deliver on the recommendations of this study and whether there is a role for government and the CAA in overseeing future airport capacity declarations to ensure adequate system resilience is being factored into long-term planning. There will be a need to consider the trade-offs between more competition and choice for the passenger and

benefits of improved on-time and delay performance.

6.52 The government will also undertake research to understand better how critical aviation supply chains such as aviation fuel and de-icer function and their influence on the aviation sector’s resilience.



59 https://publicapps.caa.co.uk/docs/33/CAP1515%20Operating%20Resilience%20and%20the%20consumer%20interest%20v2.5_final_clean_FINAL.pdf



Develop innovation,
technology and skills

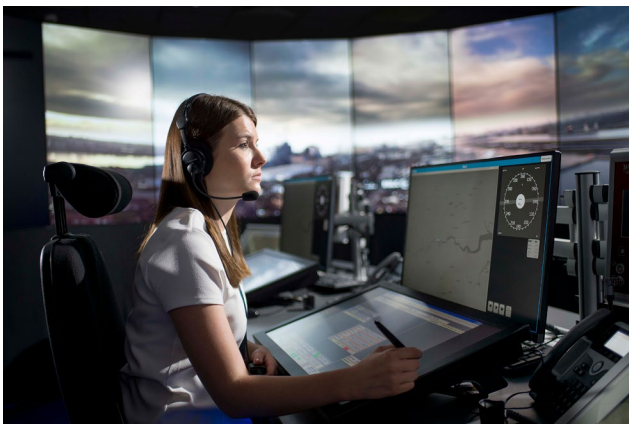
7. Develop innovation, technology and skills

- 7.1 Within almost every industrial sector there are a number of significant changes being driven by technological development and innovative approaches to business models. This is boosting the productivity and efficiency of these industries, and creating new jobs across the UK. This is particularly the case in the transport sector, with advances in technology driving new models of mobility. A prime example of this is the development of driverless cars, which could revolutionise automotive transport and bring many benefits. The UK is leading the way in this challenge, establishing ourselves as a global leader in connected and autonomous vehicles through the efforts of the Centre for Connected and Autonomous Vehicles (CCAV).
- 7.2 Advances in technology are enabling businesses to develop new and disruptive models and services, changing how people and goods move around the UK and across the globe. The innovative model of Uber, for instance, has disrupted established private hire services, offering new choices to people but also challenges to existing regulatory structures.
- 7.3 To prepare the UK for the benefits and challenges of such disruptive change, the Industrial Strategy sets out a number of Grand Challenges, all of which have significant bearing on the future of transport in the UK.⁶⁰ The challenges of artificial intelligence, the future of mobility, an ageing society and clean growth can offer significant benefits in terms of new jobs, increased productivity, greater efficiency, and greater choice for consumers. For example, the development of the commercial spaceflight sector and a fast growing drones market that is estimated to be worth over £100 billion by 2025.⁶¹ But they also present a number of challenges – both for the government and industry.
- 7.4 As innovation and technology within the aviation sector advance rapidly, it is important that current policy and regulatory practices are sufficient to realise the benefits, while managing the risks. Drones, for example, are being used across many of sectors, improving the safety and efficiency of services, but they are also pushing current regulatory structures and creating new public risks around safety and privacy.

60 <https://www.gov.uk/government/publications/industrial-strategy-the-grand-challenges/industrial-strategy-the-grand-challenges>

61 <https://preview.thenewsmarket.com/Previews/PWC/DocumentAssets/433056.pdf>

- 7.5 These challenges are likely to increase with the sector's development. Significant step changes in technology are on the horizon: trends in increased automation through to full autonomy; widespread digitalisation and mass data availability; along with revolutions in power, such as electrification.
- 7.6 The Aviation Strategy will examine these trends and consider what government and industry should be doing now to prepare for them. It is already clear that current structures and ways of operating may have to innovate alongside the development of technology and services.
- 7.7 The UK has one of the busiest and safest aviation sectors in the world. The government will strive to keep this status by ensuring an aviation system that continues to increase safety, is more responsive to user needs, more accessible and more efficient – but this will require us to change and innovate with the trends of business and technology. Common themes arose in the call for evidence responses that will help in achieving that aim.



Step change: Capturing opportunities of a digital future

- 7.8 Technology is advancing at an ever increasing rate and there is a growing reliance on digital platforms across industries. The development of digital systems is transforming our transport system. For example, the introduction of digital technologies, such as in-cab signalling and intelligent traffic management systems on the rail network, will become increasingly important to deliver much needed capacity from existing infrastructure.⁶²
- 7.9 Similarly, the emergence of new data sources and enhanced capability for its analysis brings a host of opportunities and can provide significant economic benefits. The Transport Systems Catapult estimates that making improvements to data sharing in the transport sector could yield potential benefits of £14 billion by 2025. The digital economy is growing 32% faster than the rest of the UK economy.⁶³ The UK's aviation sector recognises the value of data and a range of responses to the call for evidence encouraged the government to seek to make more aviation-related data open and transparent.

62 <https://www.gov.uk/government/publications/uk-digital-strategy/uk-digital-strategy#executive-summary>

63 Transport System Catapult (2017): The case for government involvement to incentivise data sharing in the UK intelligent mobility sector, Briefing Paper

- 7.10 The benefits for the aviation industry of advances in digitalisation, the availability of aviation data and capacity for its analysis need to be realised if the UK is to remain a global player. The UK is already leading the way in some areas, such as the development of digital towers at major airports like London City, industry investment in new avionic systems, and an increasing bank of aviation data which is helping transform passenger services and experience.^{64,65,66} The government will seek mechanisms to encourage greater data sharing between organisations in the aviation sector, and look for opportunities for greater efficiency in the sector through the use of new digital processes, such as distributed ledger technologies like blockchain.
- 7.11 Unlocking the value of data is key to enabling new mobility services. DfT will seek to understand what aviation data has most value in this respect. The government recognises that sharing data, with the appropriate security and privacy arrangements, can catalyse innovation and improve user experience. It will engage with industry to develop options that could encourage better data sharing, such as industry-led standards on data formatting. The government are already making efforts in this regard. To support the most effective and safe use of drones in our airspace, it has launched Project Chatham, a project to create an authoritative source of UK airspace data relevant for drone users and drone manufacturers. This will build greater awareness of airspace restrictions amongst drone users and ultimately form one pillar of a future unmanned traffic management system in the UK.

64 NATS work on digital towers: <https://www.nats.aero/services/airports/digital-remote-towers/>
Digital tower at London City Airport: <https://www.nats.aero/news/london-city-airport-and-nats-to-introduce-the-uks-first-digital-air-traffic-control-tower/>

65 New digital aviation research centre at Cranfield: <https://www.cranfield.ac.uk/centres/digital-aviation-research-and-technology-centre>
Boeing and Airbus plans for more automates avionic systems: <https://www.theguardian.com/world/2018/feb/09/boeing-raises-prospect-of-only-one-pilot-in-the-cockpit-of-planes>

66 Civil Aviation Authority: Data and analysis (<https://www.caa.co.uk/Data-and-analysis/>)

- 7.12 While keen to realise these opportunities, it is important to be mindful of the challenges that digitalisation and the use of data can bring, such as the increased risk of cyber-related disruption and new privacy concerns. The government is conscious that the environment the sector operates in is getting ever more complex and inter-related, which could challenge the UK's ability to maintain our record as one of the safest aviation regimes in the world. The government will look to use new technologies and greater use of data to mitigate these risks.
- 7.13 One example will be the Aviation Strategy's exploration of a policy on mandating identification of all objects in the air, requiring every aircraft, manned or unmanned, to have a working transponder. This form of electronic conspicuity is likely to be a key foundation in developing an effective traffic management system for all airspace users, including unmanned and manned aircraft in safely sharing airspace. The government will work with the GA sector to develop an approach on issues relevant to them.

Step change: Automation

- 7.14 The future aviation market will operate very differently to today, with step changes in technology, automation and consumer behaviour impacting passengers and consumers' behaviour and demands.
- 7.15 Increasingly automated, and potentially fully autonomous, processes will likely play an important role in shaping the dynamic between the aircrew and the on-board systems and enabling safer operations. Human error is a primary contributor to more than 70% of commercial airplane hull-loss accidents.^{67,68} The ATI's Raising Ambition Strategy (2016) states that 'fully-autonomous vehicles offer cost advantages and will ultimately open up new applications'. In line with this, the ATI is focusing efforts on autonomous technologies that can deliver wide-ranging benefits in civil aerospace, such as sensing and avoiding other aircraft.
- 7.16 The industry is shifting towards greater automation, with some manufacturers collaborating with other sectors like the automotive industry to develop technologies for increasingly autonomous flight, which can bring both opportunities and challenges.⁶⁹ The government recognises that achieving effective autonomy is not the only issue.

67 Aerospace Technology Institute (2016): Raising Ambition – Technology Strategy and Portfolio Update

68 Boeing: Aero Magazine, The role of human factors in improving aviation safety (http://www.boeing.com/commercial/aeromagazine/aero_08/human_textonly.html)

69 <https://interestingengineering.com/future-boeing-jets-may-have-only-one-pilot-in-the-cockpit>

- 7.17 For these emerging technologies other factors such as integration with existing traffic control, insurance and liabilities provisions, and public perceptions can present substantial challenges to their establishment in the market place. Aligning with the Future of Mobility Grand Challenge, the government will work with industry and cities to test these issues, considering research and requirements to examine the case for future urban air mobility in particular, and considering the roadmap for potential development of greater automation in commercial aviation.
- 7.18 DfT will also look at public perception and passenger behaviours to evaluate how automation and autonomy will be viewed. The public, industry and government can and should make informed decisions to guide the emergence of automation. This is particularly the case around autonomous systems, which raise ethical debates about the role of human and machine decision-making at various stages of operations.
- 7.19 As part of the work on the Future of Mobility Grand Challenge, the government will work with industry, academics and civil society on how to best support and safely pioneer such technological step change in automation and autonomous systems. It will also consider the role that vertical take-off and lift vehicles could play in shaping how people travel in and between cities and regions, and how these might integrate not only in airspace but with surface transport.

Step change: Electrification

- 7.20 Improvements to battery technology are enabling new concepts of power across all transport modes. The UK leads the way in much of this, with 1 in every 5 battery electric vehicles sold in Europe in 2016 being built in the UK, fuelling an increase of nearly 30% of electric vehicle sales in 2017 when compared to 2016.⁷⁰
- 7.21 Electric and hybrid aircraft are not yet flying in our skies. Although many challenges are similar in nature, development and asset lifetimes are much longer for aircraft than road vehicles, and the weight of batteries are prohibitive for use in aviation today due to the vastly greater power requirement of aircraft. But this is rapidly changing and the sector may be about to experience the next revolution in aircraft engines and power.
- 7.22 Electric aircraft, currently in design phase, have the potential to disrupt parts of the UK's transport market, providing new service options for how passengers or goods travel within and between our cities and regions. This could have an impact on how the UK's airport network is used, potentially freeing capacity at major hubs and competing with other modes. Electrification also offers the potential to mitigate several of aviation's environmental issues, including reducing carbon emissions and noise.

70 The Society of Motor Manufacturers and Traders (SMMT): <https://www.smmt.co.uk/wp-content/uploads/sites/2/Dec-car-ev.jpg>

7.23 DfT will work across government, with bodies like the ATI, and with the range of industry players, from established aerospace to the emerging electrical supply chain, to encourage the emergence of this technology and support a roadmap to bring forward electric and hybrid-electric aircraft use, where it makes sense for both industry and passengers.

Structural and framework challenges

7.24 The technology trends and opportunities for innovation in the sector present a number of common challenges for the role of government. Three key cross-cutting themes emerged from the responses to our call for evidence: better alignment of government support; ensuring regulation and policy is agile enough to support such advances; and the role of the government in assisting public understanding of new technologies and business models.

Aligning support for development and innovation

7.25 The government wants to create the right environment to quickly and safely enable innovative technologies and business solutions to develop across the aviation sector. In a complex and evolving landscape, with high capital investment and long delivery times, it can be challenging for R&D to proceed and particularly difficult for start-ups to navigate their way and secure support. There is a need to ensure that government, industry and academia are aligned in focus and action to maximise our effectiveness and incentivise innovation.

7.26 To be successful in a competitive global environment, it is vital that new technology receives consistent, end-to-end support in the UK: from identifying demand and opportunity, through R&D, design, testing and demonstration, and ultimately to commercial operations.

7.27 The UK has already taken significant steps in this respect. The government is backing the aerospace sector, and its strengths in productivity and innovation, to secure a share of the expanding global market.⁷¹ The Department for Business, Energy and Industrial Strategy (BEIS) brings together responsibility for the Industrial Strategy and the government's relationship with business, as well as ensuring the UK remains at the leading edge of science, research and innovation. As noted previously, BEIS is investing £1.95 billion in aerospace R&D from 2013 to 2026. This is match-funded 50:50 by industry bringing the overall pot to £3.9 billion.

7.28 The ATI works with BEIS to target aerospace R&D to sustain and grow the UK's internationally competitive aerospace sector through investment in technologies. The ATI's focus is on providing technology leadership, maximising funding impact, strategic partnerships, and the UK's international profile. DfT has a role in defining outcomes for the aviation sector, such as environmental impacts and noise emission targets, and ensuring that regulation and policy does not present a barrier to adoption.

71 BEIS (2017) Industrial Strategy – Building a Britain fit for the future

7.29 When DfT's Science Advisory Council met in summer 2017 to discuss the future of flight, it was highlighted that a concerted effort on horizon scanning, including bodies like the ATI, NATS and the CAA, would help government and industry identify which technologies are likely to have a place in the market. For the government, this means that it should better align policies and targets that support the adoption of such emerging technologies.

7.30 The Aviation Strategy will explore the government's ability to do this and work to improve alignment across departments and actors to ensure the right support framework is in place for firms to bring their innovative solutions to market and help meet clear government objectives. This includes the possible creation of a joint innovation council between DfT, BEIS, ATI, InnovateUK, academia and industry partners.

Agile regulatory frameworks

7.31 These step changes in technology and innovative market offerings often require a regulatory, policy and/or administrative response, either to enable new services to occur or to ensure safety and environmental issues are dealt with appropriately. Increasingly, the pace of developments is outstripping our ability to provide this regulatory change.

7.32 Through the the call for evidence explicit feedback was received that aviation needs to be much more agile in the future while retaining clear, long term regulations. This was echoed by a range of industry participants at the CAA's Innovation Conference in March 2018, who described some of the evolving technology and market opportunities, and the supporting role that the government and regulators can play in setting a framework both that will protect passengers and encourage these opportunities to be realised. These are also themes that the CAA has been exploring with its Aviation Futures think tank.

7.33 Wider industry feedback has indicated that government should carefully consider how safety regulations in particular can enable and support new technological solutions and new business models while retaining adequate protections. As noted in Chapter 3, this will be a key priority for the government in ensuring our regulatory framework is fit for the future. In line with DfT's regulatory review under the Future of Mobility Grand Challenge, our ambition is to ensure that the aviation policy and regulatory frameworks are appropriately designed to encourage and support the benefits of emerging technologies and innovative business models.



- 7.34 Changes are taking place. In March 2018 the Space Industry Bill received Royal Assent, paving the way for satellite and spaceflight launch from the UK. Working with industry, the government created a completely new and flexible regulatory framework that can adjust and react to further technological developments as markets are established for the first time. This will help facilitate the UK space industry, worth £13.7 billion per year, to reach a global share of 10% by 2030 from 6.5% today.⁷² The government will engage with industry on whether its current approach to aviation innovation poses barriers to development. This will include considering the role of regulation as opposed to administrative action, the evolving task of the regulator, and the agility of the government's policy framework.
- 7.35 In addition to technological change, new business models are emerging such as 'sky taxi' services and low cost long haul, which provides benefits to consumers through cheaper fares and more competition in the market. It is important to maintain appropriate safety oversight of these operators, particularly when the business models are complex and spread across more than one country. In the case where airlines' activities take place in a country other than that in which the principal place of business is located, it can be unclear which country is responsible for safety assurance and oversight.

- 7.36 While not wishing to stifle innovation and growth, it is important to establish formal oversight arrangements with other countries to agreed standards. The government needs to explore how best to undertake this work, including whether it should be bilaterally on a case-by-case basis, or through a standardised international approach. The government will also encourage more communication with industry to horizon scan for emerging technologies and business models.

Consumer behaviour and public understanding

- 7.37 Although many emerging technologies have the potential to bring benefits for passengers and society, a lack of understanding may lead to developments failing to break through. To ensure that the benefits of these technologies are realised, the government wants to better understand how consumer behaviour and public understanding of new transport technologies can affect their uptake.

⁷² UK Space Agency (2016): The Size & Health of the UK Space Industry

- 7.38 This challenge is not a new phenomenon, and is something that government is working with industry to address across a number of sectors, including transport. For example, the Go Ultra Low campaign is jointly funded by government through the Office for Low Emission Vehicles (OLEV) and industry. This campaign aims to increase take-up of electric vehicles by helping motorists and fleet owners understand the benefits, cost savings and capabilities of the wide range of electric vehicles on the market.⁷³
- 7.39 In 2016, the government commissioned a public dialogue on the use of drones in the UK which explored the public's expectations and concerns.⁷⁴ At the start, high level opinions about drones tended to be negative, linked to concerns about privacy and safety, and fear of the unknown. Some participants acknowledged that these views were driven by the portrayal of drones in the media, and that they didn't feel they had heard or knew that much about the subject. As the dialogue progressed and participants learnt more about drones and economic uses, they tended overall to become more positive and balanced in their perception. This dialogue demonstrated the difference engagement can have in public perceptions of new technologies and, in this particular case, helped inform the development of new drone policies and regulations, such as a registration scheme, and leisure user training and education.
- 7.40 Some of the identified trends will be controversial, and on some there will be choices for consumers and the public of what technology and services they want. To help better define the role of government in best informing the public and assisting consumer behaviour, the government will carry out further research into how public attitudes can affect the uptake of emerging aviation technologies. It also needs to consider where policies or behaviours may act as a barrier, for instance whether the cost of investment is deterring airlines, who are under pressure to keep prices competitive and low for passengers.

Addressing skills shortages

- 7.41 The aviation sector is estimated to support over half a million jobs, spread across all of the regions of the UK. Some of these jobs are in the high skilled roles that are vital for the success of the UK's aerospace industry, and involve the production of some of the most technologically sophisticated parts of aircraft, such as wings and aircraft engines. The consultation highlighted concerns that the aviation industry could face a skills shortage in some aerospace and air transport sub-sectors, especially in key science, technology, engineering and manufacturing (STEM) roles.

73 <https://www.goultralow.com/about/>

74 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/579550/drones-uk-public-dialogue.pdf

7.42 Boeing has estimated that the world's airlines will need around 637,000 new commercial airline pilots (108,290 in Europe) over the next 20 years, in addition to 839,000 cabin crew and 648,000 maintenance technicians.⁷⁵ Yet the cost of pilot training, and the provision of appropriate STEM training for those across the aviation sector who draw on STEM knowledge, can be a barrier for those wanting to pursue a career in aviation. There are also issues that have been highlighted in respect to gender equality, with an average of only 5% female pilots employed by UK registered airlines.⁷⁶ Addressing potential skills shortages, in areas such as pilot training, airspace modelling and engineering, must be a priority for the Aviation Strategy.



7.43 Government action has included the introduction of the Apprenticeship Levy in 2017, which has provided the impetus for industry to work together. One such partnership is the Aviation Industry Skills Board, where airports, airlines and the rest of the industry have come together to develop more apprenticeship standards and share best practice. The government also established the Transport Skills Apprenticeship Taskforce (STAT), an employer-led group to help the transport sector address skills challenges and take forward DfT's commitment to treble the number of apprenticeships in the transport sector by 2020. STAT has recently broadened out from rail and road to include aviation to ensure that the sector can benefit from these initiatives.

7.44 The government has also made 2018 the 'Year of Engineering'. This aims to celebrate the importance of engineering and forms an important part of the Industrial Strategy's objective to boost engineering across the UK. The 'people' strand of the Industrial Strategy includes measures to establish a technical education system that rivals the best in the world and the investment of £406 million in education and skills, including maths, digital and technical education. The Aviation Strategy will provide an opportunity to consider whether the sector requires any further support on specific skill areas.

75 Boeing (2017): Pilot and Technician Outlook 2017-2036

76 Civil Aviation Authority (2015): Airline Data

7.45 The industry has also led in this area, supporting investment in the next generation of pilots and engineers. Flybe has an established partnership with Exeter University to support its aircraft engineering degree, while easyJet has an initiative to increase the number of female pilots. The British Airline Pilots' Association's 'nextGen' programme includes mentoring for trainee pilots and support from experienced pilots. The Heathrow Skills Taskforce is an example of a shared initiative with business, trade unions, schools and further and higher education providers to identify employment opportunities to make the airport a role model for local social mobility and diversity. This should help ensure that young people in the local community have the skills necessary to build careers at Heathrow. Another exciting development is Stansted Airport College, a new college opening later this year which will offer technical and professional courses in aviation, engineering and business. The GA sector also remains an invaluable training ground for the development of aviation skills such as pilot training, and this is something that the government will want to see continue and realise its full potential.

7.46 The priorities for the strategy will be to continue to work with the industry to better understand the extent of any skills shortages and ensuring that they are addressed. Further action could include a greater role for the industry in working with education providers to invest in the next generation of our pilots and engineers and helping people to get in to, and progress in, a career in aviation. The government also wants to use the strategy to look at specific areas that may require attention in order for the UK to maintain its competitiveness and to equip the UK to meet the demographic and technological challenge of the future.



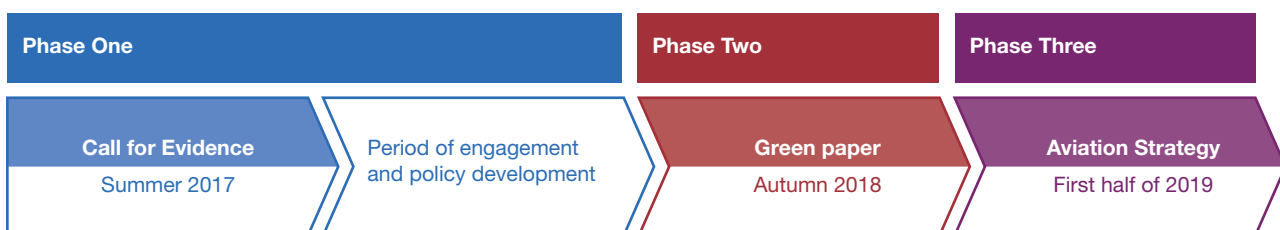
8. Next steps in developing the aviation strategy

Timeline for consulting

- 8.1 The government has considered the feedback received through the call for evidence, as well as how the development of the strategy will best align with wider government processes. This has led to a new simpler process that will see a single green paper produced in the autumn of this year. This Next Steps document will start a period of intense engagement and policy development that will inform the contents of the green paper. This will ensure that the government is able to publish a comprehensive and fully informed aviation strategy in early 2019.
- 8.2 The adjusted timings will not stop the government from continuing to implement aviation policy decisions if required, in parallel to the aviation strategy consultation process. This document has already highlighted some areas where bold action is needed.

How you can continue to be involved

- 8.3 The final Aviation Strategy will be shaped by our stakeholders and partners across the breadth of the aviation industry, as well as by business, consumers, environmental groups, communities and anyone with an interest in aviation.
- 8.4 From April 2018 up to the formal consultation period in autumn 2018, the government will be carrying out a period of widespread engagement that will inform our green paper. This will include a series of roundtables and workshops.
- 8.5 But throughout the process the government is keen to engage through established forums and events.



- 8.6 You can keep up to date with the progress of the Aviation Strategy by visiting our website at: aviationstrategy.campaign.gov.uk. DfT will also be sending out regular stakeholder updates.
- 8.7 Make sure you also keep an eye on DfT's Twitter channel @transportgovuk, where we will be sharing Aviation Strategy content and policy ideas. The government wants to start discussion and debate and get your views on some of the policy issues that it will be testing ahead of the green paper.
- 8.8 To find out more about our engagement plans and to get involved, email the aviation strategy team on: aviationstrategy@dft.gsi.gov.uk.

Annex A: list of respondents

The following organisations responded to the Aviation Strategy call for evidence. Responses were also received from 160 individuals.

2Excel Aviation Limited

Aberdeen International Airport Consultative Committee

ADS Group Ltd

Air Service Training (Engineering) Ltd

Airbus

Aircraft Owners and Pilots Association (AOPA)

Airlines for America

Airlines UK

Airport Operators Association (AOA)

Airssociates Consulting Limited

Association of British Travel Agents (ABTA)

Association of Licenced Multiple Retailers (ALMR)

Aviation Environment Federation

Aviation South West

Biggin Hill Airport Limited

Biofuelwatch

Bircham Dyson Bell LLP

Birmingham Airport

Board of Airline Representatives UK (BAR-UK)

Boeing

Bristol Airport

Bristol Airport Consultative Committee

Bristow Helicopters Ltd

British Airlines Pilots Association (BALPA)

British Aviation Preservation Council

British Business and General Aviation Association

British Chambers of Commerce

British Gliding Association

British Helicopter Association (BHA)

British International Freight Association

British Microlight Aircraft Association

British Model Flying Association

Buckenham Aviation Centre Ltd.

Buckingham New University

Cambridge University Health Partners

Campaign Against Climate Change

Campaign for Better Transport

Cardiff International Airport Ltd

Chartered Institute of Logistics and Transport

Chiswick Against a Third Runway

Civil Aviation Authority (CAA)

Cleeve Parish Council

Cobarl Technology Limited

Confederation of British Industry (CBI)

Cornwall Airport Limited

Cornwall Council
Cranfield University
Crawley Borough Council
Design Council
DHL International
East Herts Council
East Midlands Chamber
East Reading action group
East Sussex County Council
easyJet
EEF – The Manufacturer’s Organisation
Emirates
England’s Economic Heartland
Essex Chambers of Commerce
Essex County Council
Exeter City Council
FASIIIG – The Future Airspace Strategy
Industry Implementation Group
FASVIG – The Future Airspace Strategy VFR
Implementation Group
Federal Express Corp (FedEx)
Fellow Travellers
Flybe Group plc
Flying Disabled
Freight Transport Association
Friends of the Earth
Future Flight Concepts Ltd
Gatwick Airport Consultative Committee
Gatwick Airport Ltd
Gatwick Area Conservation Campaign
General Aviation Alliance (GAA)
General Aviation Awareness Council
Glasgow Chamber of Commerce
Glasgow Prestwick Airport
Greater Birmingham Chambers of Commerce
Green Party Group on Norwich City Council
Greenpeace
Heathrow Airport Consultative Committee
Heathrow Airport Ltd
Heathrow Association for the Control of
Aircraft Noise (HACAN)
Heathrow Strategic Planning Group
Hertfordshire County Council
Highlands and Islands Airports Limited
Highlands and Islands Enterprise
Hillingdon, Wandsworth, Richmond and
Windsor (Joint)
Historic England
Institute of Directors
International Air Cadet Training
International Air Transport Association
International Airlines Group
Kent County Council
Kings Newton Residence Association
LAP Investments EU
Leeds Bradford Airport
Leonardo Helicopters Division
Liverpool City Region Combined Authority
Local Authorities’ Aircraft Noise Council
(LAANC)
Local Government Technical Advisors Group
London Borough of Ealing
London Borough of Hammersmith and
Fulham
London Borough of Southwark

London Chamber of Commerce and Industry	Northern Powerhouse Partnership
London City Airport	Norwegian UK
London First	Old Windsor Residents Association
London Forum of Amenity and Civic Society	Parish Councils Airport Association
London Heliport Consultative Group	Peel Airports Group
London Luton Airport Operations Limited	Plane Wrong
London Southend Airport	Prospect
London Stansted Cambridge Consortium	Prospect ATCO
Loughborough University	Public and Commercial Services Union (PCS)
Manchester Airport Consultative Committee	Public Liaison for All Party Group on General Aviation
Manchester Airports Group PLC	Regional and City Airports
Manchester China Forum	Reigate & Banstead Borough Council
Manchester Investment Development Agency Service	Renewable UK
Marketing Manchester	Residents Against Aircraft Noise
Mayor of Cambridgeshire and Peterborough	Richmond Heathrow Campaign
Mayor of London	Rolls Royce
Melbourne Civic Society	Royal Aeronautical Society
Met Office	RSBP – the Royal Society for the Protection of Birds
MHP Communications responding on behalf of IFM Investors	Scottish Chambers of Commerce
NATS	Scottish Passenger Agents Association
Nestrans	Scottish Power
Newcastle Airport Consultative Committee	Sheffield City Region
Newcastle International Airport	SITA
No Night Flights	Slinfold Parish Council
No Third Runway Coalition	South Derbyshire District Council
North East England Chamber of Commerce	South East Scotland Transport Partnership
North Somerset Council	Staffordshire Chamber of Commerce
North West Business Leadership Team	Stansted Airport Consultative Committee
Northern Ireland Department for the Economy	Stop Stansted Expansion
	Strategic Airports Special Interest Group

Suffolk Chamber of Commerce
Sustainable Aviation
Sywell Aviation Limited
TAG Farnborough Airport
Takeley Parish Council
Tank Storage Association
Teddington Action Group (TAG)
Thames Valley Berkshire Local Enterprise Partnership
The Balsall Common Village Residents Association (BCVRA)
The Consumer Council
The Heritage Alliance
The Highlands and Islands Transport Partnership (HITRANS)
The Honourable Company of Air Pilots
The Northern Powerhouse Partnership
Transition Plymouth
Transport for the North
Transport for the West Midlands
Transport Planning Society
TUI
Tyndall Centre for Climate Change Research
UK Airport Consultative Committees
UK Flight Safety Committee
UK Petroleum Industry Association
UK Regional and Business Airports Group
UK Travel Retail Forum (UKTRF)
UKinbound
United Parcel Service (UPS)
University of Cambridge
University of Oxford (System Security Lab, Department of Computer Science)
Uttlesford District Council
Via Technology Limited
Virgin Atlantic Airways
Welsh Government
West London Friends of the Earth
West of England Combined Authority
West of England Unitary Authorities
West Windsor Residents Association
WINGS
Withyham Parish Council
Woodland Trust
WWF – World Wide Fund for Nature

Annex B: summary of responses

Summary of responses by respondent group

- B.1 Airlines** highlighted the objectives on markets and competitiveness as priorities in a post-EU Exit world, and said that the strategy's focus on consumers should be balanced with the needs of airlines as businesses. They also proposed creating a roadmap on how to address the issues. Some airlines felt that the overall aim could be more ambitious, such as setting targets for maintaining the UK's market share, or be showing more explicit support for sustainable growth. It was also felt that more could be done to bring out the economic and social value of aviation. Some airlines strongly supported the aims of boosting regional connectivity and the greater use of Public Service Obligations (PSOs) as a means of ensuring connectivity on routes that are essential for establishing and better connecting those remote communities not well served by other means of public transport and that would otherwise not be commercially viable. A number of airlines also commented on the impacts of APD.
- B.2 Airports** highlighted the importance of setting out a long-term vision that supports investment decisions. Some responses emphasised the need to establish a framework for future sustainable growth that would give airports the certainty to make long-term investment decision and could include a road-map to creating better surface access to airports and supporting the wider aviation 'system' including regional and smaller airports. Some responses also raised the importance of supporting Border Force to ensure that passengers experience at the border is improved. APD was also highlighted as a key issue affecting competitiveness.
- B.3 Aerospace** industry responses noted the potential overlap with the Industrial Strategy on issues affecting aerospace, including skills development and ensuring that the UK has the right regulatory framework in place to support investment in innovation and new technology. They welcomed the prospect of a sector deal to assist in this. They placed emphasis on the importance of our relationship to EU safety regulations post-EU Exit and in particular the future relationship with EASA. Some responses emphasised the importance of harnessing emerging technologies in areas such as autonomous aviation, space, and design.

- B.4 The **general aviation** sector said that the strategy appeared too focussed on commercial air transport, highlighting the importance of an effective network of airfields and the training of pilots. Respondents asked that more be done to highlight the role that the sector plays in raising interest in the sector, especially amongst young people. Some respondents also expressed concern that the market-driven focus would lead to more airfield closures to make way for housing.
- B.5 **Environment and community groups** felt that the document gave insufficient prominence to carbon emissions and downplayed other environmental impacts as secondary to supporting growth, without questioning whether growth was a positive outcome to aim for. Some said that meeting the recommendations of the Committee on Climate Change will require some demand management, and that there needed to be clarity on how the government plan to manage the UK's aviation carbon emissions, to ensure the UK is able to meet its obligations under the Paris Agreement. Community Groups placed emphasis on local environmental impacts, primarily noise and air quality.
- B.6 The **wider business community** was supportive of the need for a strategy, while highlighting the need for direction and clarity, with delivery-focussed next steps and a clear plan for implementation. It emphasised the need for the strategy to recognise the positive role that the sector will play in realising the Industrial Strategy and a clear framework for sustainable growth and the importance of integrating aviation with other transport modes. There was also a strong emphasis on freight, and some proposed that facilitating trade should be brought out more clearly in the strategy's aim. There were also suggestions for additional policy tests that government could apply to the options under consideration, including the cost of doing nothing, cost to the taxpayer, and impact on competition.
- B.7 **Local government** responses suggested that the focus on passengers was too narrow and that the strategy should be giving more consideration to the users of aviation in the broader sense, including local businesses who are dependent on airports. There was also emphasis placed on understanding local environmental impacts of any growth in the sector.
- B.8 The government was also encouraged by the number of responses received from **members of the public**. It is important that the strategy reflects a broad range of views and the insights that these responses gave will help ensure that the government is listening to views of those individuals who are impacted – both positively and negatively – by the sector. Most of those who responded as individuals are either private or leisure pilots, live in communities around airports, or want to see greater action over the climate change impacts of the sector.

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