TR020002 – SMAa representation to the Secretary of State for Transport

Response to Jennifer Dawes - Annex 1 - Report by Louise Congdon of York Aviation [LC]

Re-determination of the Application by RiverOak Strategic Partners Limited ("the Applicant") for an Order granting Development Consent for the reopening and development of Manston Airport in Kent.

Save Manston Airport association (SMAa) has over 3,700 members who are in full support of the Development Consent Order to reopen Manston Airport, many wanting jobs for themselves, their family or other Kentish people. Thus, we wish to make further representations to assist in the re-determination of the DCO.

1.0 Introduction

It seems surprising that Harrison Grant decided on behalf of Jennifer Dawes, to employ Louise Congdon (LC) to make representations on their behalf rather than a qualified expert on forecasting[1]. It will be interesting to see if Harrison Grant decide to retain the services of Paul Stinchcombe QC who cross-examined LC during the Stansted Public Inquiry and established that she was not qualified to act as an expert witness in aviation forecasting.

The representation produced by LC for Harrison Grant is mostly a regurgitation of, and attempts to justify, the comments made in previous submissions to the Examination by her. As such, most of this representation is irrelevant and does not address the 4 Matters raised by the Secretary of State (SoS).

The report by LC does not even address Matter 3 on the Sixth Carbon Budget, which is odd. It is worth noting that the JR case, on behalf of Jenny Dawes, was accepted as being covered by the Aarhus Convention as it involved environmental information and decision making by a public body. If the report from LC, on behalf of Harrison Grant, was paid for out of money donated for or from costs awarded from the Judicial Review (JR), we assume that Harrison Grant will be employing someone else to comment on this significant environmental issue.

2.0 Summary of Previous York Aviation Reports

All of section 2, nearly 7 pages, is a precis of representations "*submitted to the Examination at Deadline 3*"[2].

Since LC is aware that all previously submitted evidence will be considered by the DfT and LC does not produce any new evidence, this section is irrelevant.

This point is perfectly illustrated by the fact that LC is still questioning the inclusion of the Northern Grass in the DCO and refers to Associated Development. Since the applicant owns the land and did so before the Examination ended one must question why LC is still raising this point?

3.0 Changes to Policy

3.1 ANPS

LC states that *"The Heathrow Northwest Runway scheme delivers the greatest support for freight. The plans for the scheme include a doubling of freight capacity at the airport." and "Hence, the reinstatement of the ANPS is a material change in Government Policy since the decision was taken to confirm the Manston DCO in July 2020. This weakens the case, in so far as it existed, that there is any need for the development of Manston to meet any shortfall in freight capacity in the South East of England"[3].*

[1] SMAa [Matter 4]
[2] [LC] – page 3
[3] [LC] – page 11

As outlined in detail in SMAa [Matter 2] section 1.2, the expansion to Heathrow is not likely to happen for a considerable time and even when it does, with "*its emphasis on passengers and belly freight at Heathrow, it is not going to be sufficient to meet the predicted need. A reopened Manston, with its state-of-the-art facilities and available capacity, will provide resilience to the supply network in the UK that LHR cannot, for at least several decades. The predicted delay to Heathrow increases the quantitative need for Manston Airport*"**.**

It is worth noting that in the Bristol Airport Public Inquiry (July 2021), James Brass, also from York Aviation, stated in written evidence that "the model assumes that a third runway (R3) is delivered at Heathrow in 2033"[4]. This was confirmed during cross-examination.

During the Manston Examination, the applicant indicated that R3 would not be open until later than the 2026 date proposed[5] but the Examiners wrongly believed the 2026 date was realistic[6]. This must call into question the conclusions the Examiners reached based on this wrong assumption.

When asked whether the opening of R3 at Heathrow would reduce demand at Bristol James Brass from York Aviation said, "*I wouldn't see it reducing demand at Bristol*".

3.2 Making Best Use (MBU)

LC quote "*"We therefore consider that any proposals should be judged by the relevant planning authority, taking careful account of all relevant considerations, particularly economic and environmental impacts and proposed mitigations."*

In this case it is the Secretary of State that will be "*taking careful account all relevant considerations"*. The recent Stansted Airport Public Inquiry decision makes clear that Making Best Use of existing runways (MBU) should be accepted as government policy:

"*The in-principal support for making best use of existing runways provided by MBU is a recent expression of policy by the Government. It is given in full knowledge of UK commitments to combat climate change, having been published long after the Climate Change Act 2008 (CCA) and after the international Paris Agreement. It thoroughly tests the potential implications of the policy in climate change terms, specifically carbon emissions. To ensure that Government policy is compatible with the UK's climate change commitments the Department for Transport (DfT) aviation model was used to look at the impact of allowing all MBU airports to make best use of their existing runway capacity. This methodology appears to represent a robust approach to the modelling*"[7].

In SMAa [Matter 1] section 2 we outline in detail the socio-economic benefits of the development.

In SMAa [Matter 3] sections 2 and 3 we outline in detail the environmental impacts of the scheme and that

"*The development, even without mitigation, represents a tiny proportion of the overall UK GHG emissions and a tiny proportion of the total passenger and cargo ATMs in the UK. With mitigation measures implemented, through the Carbon Minimisation Action Plan, the Proposed Development's effect on the global climate is not significant. With aeroplane operators obliged to offset all CO_2 emissions caused by International Flights, the granting of the DCO for Manston is not at odds with the recommendations by the CCC in the sixth carbon budget.*

With Government action to push forward airspace change, aircraft innovation and a commitment to SAF there is no reason why the Secretary of State should not grant the DCO for Manston Airport".

[4] YAL Bristol Airport Expansion – page 8
[5] Examining Authority Recommendation Report – 5.6.13
[6] Examining Authority Recommendation Report – 5.6.15
[7] Stansted Airport Public Inquiry decision – page 4 section 18

3.3 Climate Change

LC states "*We do not address this change in detail in this Report*" but does state "*there tends to be a lag in upgrading the freighter fleet to the newest technology. This would suggest that development of an airport specifically aimed at attracting more dedicated freighter operations is more likely to use a higher share of the UK's Carbon Budget*"[8].

LC is either misunderstanding or misrepresenting the situation here. In our submission on [Matter 2] section 2.1 we outlined why there is always going to be a need for dedicated freighters. Boeing state:

"In addition to the long-term trend of dedicated freighters carrying more than 50% of global air cargo traffic despite growing widebody passenger fleets, the COVID-19 pandemic has highlighted the importance of main-deck freighters in our global air transportation system"[9].

As outlined in SMAa [Matter 3] section 2.1, CORSIA, now being law in the UK, imposes obligations:

"*Aeroplane operators will be set a "CORSIA Eligible Emission Unit" quota by the ICAO Council and these must be cancelled by the buying and selling of Eligible Emission Units on the Carbon Market*"[10].

Whether dedicated freighters land and take off from Manston or another airport in the UK, **aeroplane operators** will still be obliged to offset all CO_2 emissions caused by International Flights.

Finally, DHL has ordered 12 all-electric freighter aircraft with the first delivery scheduled in 2024[11].

Therefore, the points raised by LC in this section are irrelevant to the granting of the DCO for Manston.

3.4 Thanet District Council Local Plan 2020

LC refers to Policy SP07 – Manston Airport:

"Manston Airport as identified on the Policies Map is safeguarded for airport related uses. Whether or not the DCO is confirmed, the future use and development of Manston Airport and/or policies affected by the outcome of the DCO process will be determined through the early review of the Plan."

And that "*The LP makes clear that this, and other related policies, will be subject to review when the outcome of the DCO is known".*

This is merely in line with TDC Policy SP03 - Local Plan Review

"*Within six months of the adoption of the Local Plan, the Council shall undertake and complete a review of the Plan with information published as part of an updated Local Development Scheme setting out a timetable for the completion of the review and any update as may be required*".

Point 3.4 raised by LC about reviewing the Policy is pointless. The airport is safeguarded for airport related uses and the applicant owns the airport land.

3.5 Employment

LC state "*We note that the claimant rate in Kent is actually below the national average"*[12].

[8] [LC] – page 12
[9] Boeing Executive Summary
[10] CORSIA – FAQs – page 20 section 2.14
[11] DHL all-electric freighter aircraft
[12] [LC] - page 13

This is, at best, misleading. It seems to imply that there isn't a problem with unemployment throughout Kent.

This is definitely not the case, and it is unforgivable that LC has not included data about Thanet which has[13]:

- the highest unemployment rate in Kent.[14]
- the highest 18-24 unemployment rate in the South East[15].
- many areas with very high levels of deprivation[16].

Following on from that:

- There is an established link between deprivation and life expectancy with a difference of over 9 years for males and over 7 years for females[17].
- In the Thanet District only 0.1% of enterprises (5 out of 4,050) employ more than 250 people.[18]
- By year two, direct jobs projected by the applicant (856)[19] will exceed the 250-job threshold making it one of the major employers in the area.
- The Manston development will reduce local unemployment.
- The Manston development will reduce local deprivation.
- The Manston development will improve local life expectancy and local healthy life expectancy.

The statement by LC "*To the extent that there is ongoing unemployment in Kent, the Airport would, at best, make only a small contribution to overcoming the issue*" is blatantly untrue.

3.6 Thames Freeport

LC states that the "*Thames Freeport will be of no benefit to Manston Airport or positive influence on its alleged need case as it is not included within the boundary of the Thames Freeport and tariffs would still be applicable to goods using the Airport*"[20].

However, in the same section when explaining Freeports she states, "*This allows firms to import goods, use the same goods in manufacturing, and export finished products without facing the standard tariffs or customs checks".* In other words, goods could be imported via Manston, enter the freeport, use those goods in manufacturing, and then the goods could leave the freeport to areas within the Southeast or be flown from Manston to other countries.

Therefore, the statement by LC that the "*Thames Freeport will be of no benefit to Manston Airport" is not true.*

3.7 The London Resort

In connection with the London Resort LC states "*Realistically, this would dwarf the potential job generation impact of an air freight hub at Manston Airport and could make local recruitment more difficult*"[21].

It is hard to imagine that there is direct correlation between the two. As stated earlier, Thanet has a very high unemployment rate, particularly in the 18-24 age group and, as indicated in our representation on [Matter 1]

[13] SMAa [Matter 1]
[14] District Unemployment Level Kent 2021
[15] District Unemployment Kent Level 2021
[16] Indices of Deprivation headline figures 2020
[17] The Kings Fund
[18] UK-business-counts-statistics 2020
[19] [APP-085] – Volume IV page 28
[20] [LC] - page 14
[21] [LC] - page 15

section 2.5, the applicant has a commitment to employ local people. **This is, at best, an extremely weak argument put forward by LC and is not a significant consideration.**

3.8 Ebbsfleet Garden City

LC seems to be making the same extremely weak argument and so is not a significant consideration.

3.9 The Lower Thames Crossing

LC states "*The Lower Thames Crossing is a significant development that would ultimately provide Kent with easier access to Southend and Stansted airports*"[22].

Whilst this statement is undoubtably true it is equally true that the Lower Thames Crossing will give easier access for freight travelling from Manston to the Thames Freeport, Essex and beyond.

In addition, we outlined in detail in SMAa [Matter 2] section 1.1 why Stansted will not have the Cargo ATMs required to meet the need.

At present, according to the Southend Airport web site FAQs, Southend uses only Boeing 737 – 400F aircraft for its freight operations probably due to its relatively short runway (1,856m).

It is hard to see that the opening of the Lower Thames Crossing will make any material difference to the decision of granting the DCO.

4.0 Updating the qualified need case

4.1 The baseline

Sections 4.1 to 4.8[23] cover information from periods before July 2019 and so are irrelevant. Although it is nice to see someone using a "Waterfall Chart" (sometimes called a bridge), the SoS asked whether "*the quantitative need for the Development has been affected by any changes **since 9 July 2019***" (our emphasis) **so none of the comments by LC address the questions asked.**

4.2 The effects of Covid

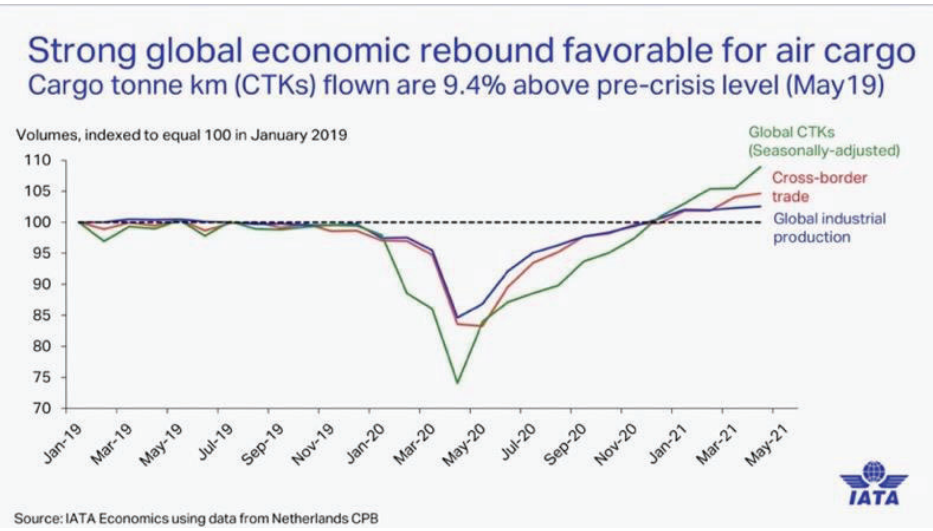
LC states *"Figure 4.2 presents the overall freight tonnage flown to or from UK airports on a monthly basis from January 2019 through to May 2021"[24].*

[22] [LC] - page 15
[23] [LC] - page 18
[24] [LC] - page 20

Unfortunately, LC seems to have used the wrong data for May 2021. The cumulative total should be 192,369 (bellyhold 40,394 + freighter 142,975)[25] and not the approximately 160,000 shown by LC. **This lack of accuracy is very worrying and does call into question her attention to detail.**

LC states that "*overall projections for the operation of dedicated freighter aircraft globally have not changed, despite any short-term factors arising from the pandemic. In 2018, Boeing forecast a worldwide freighter fleet of 3,260 aircraft by 2037 and now projects the same number by 2039*"[26].

It should be noted that Boeing released its 2020-2039 report[27] in October 2020 when the full extent of the upturn in air freight demand was not clear[28]:



The graph clearly shows that after a big drop in early 2020, not only has it recovered to pre-covid levels in around the time of the Boeing forecast but by May 2021 was 9.4% above the levels in January 2019. N.B. In their latest data IATA have indicated that the June 2021 CTKs are 9.9% above June 2019 levels.[29]

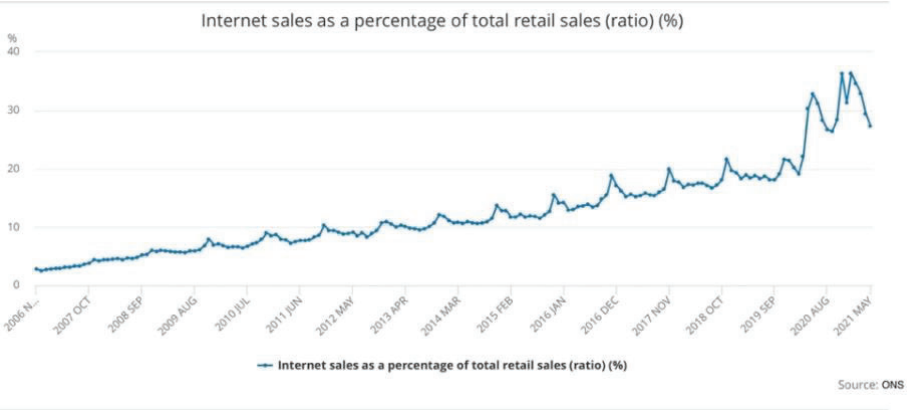
This suggests that were Boeing to have written their report in May 2021, the figure quoted of 3,260 freighter aircraft may well have been higher.

However, even if we take the figure of 3,260 freighters, what LC failed to explain was that this figure represents a 60% increase in the freighter fleet:

"The combination of 4.0% annual average RTK growth, in addition to the proven need for dedicated freighter capacity to support our global transportation system, results in the need for a 60% larger fleet during the next two decades"[30].

One of the biggest drivers of this upturn has been the huge growth in e-commerce. It is true that e-commerce has been growing for many years and according to ONS data total e-commerce sales in the UK have risen from £375 billion in 2009 to £669 billion in 2019[31]. There was then a rapid rise in e-commerce because of the pandemic and, although there have been fluctuations as normal retail reopens, internet sales as a percentage of total retail sales are still way above pre-pandemic levels:

[25] CAA airport data May 2021
[26] [LC] - page 21
[27] Boeing Executive Summary
[28] IATA air freight monthly analysis May 2021
[29] IATA air freight monthly analysis June 2021
[30] Boeing WACF – page 10
[31] ONS e-commerce data - table 1



Internet sales as a percentage of total retail sales have risen from 19.1% in February 2020 to 27.3% in May 2021 (the last data available). At the peak of the graph shown above it was at 36.3% in both November 2020 and January 2021[32].

According to Boeing "*However, it is clear that e-commerce is revolutionizing customer expectations and air cargo logistics. In the next four years, the market size is forecast to increase over US$3 trillion, to US$6.5 trillion in 2023"*[33].

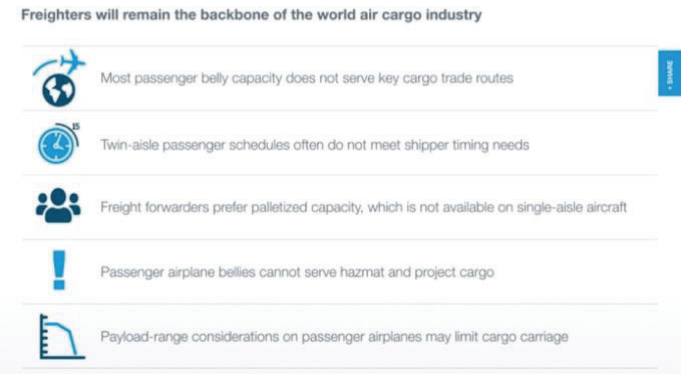
It seems astonishing that LC decided not to include the effect the pandemic has had on e-commerce and internet sales because of the implications it has for air cargo and dedicated freighter use. To have totally ignored it in this section must seriously call into question her judgement and the conclusion she reached that "*Prima facie, there is no change in the need for additional airport capacity going forward for dedicated freighter operations as a consequence of the Covid-19 pandemic than there was in our original assessments in 2017 and 2019*".

4.3 Changes related to the UK's withdrawal from the European Union

LC states "*Ultimately, there is no compelling evidence to suggest that the UK's withdrawal from the European Union contributes to an alleged need for the development and re-opening of Manston Airport".*

This is a somewhat surprising conclusion because, as LC has indicated, the UK have already agreed several trade deals that will increase the need for air cargo. LC seems to be suggesting that "*this will tend to reinforce the importance of bellyhold capacity as the principal means of carriage as it enables a wider network of points to be served directly rather than trying to consolidate cargo onto a small number of dedicated freight routes".*

This is, at best, misleading, as all the evidence indicates that bellyhold is not the "*principle means of carriage*". The split is approximately 50/50 and bellyhold has limitations[34]:

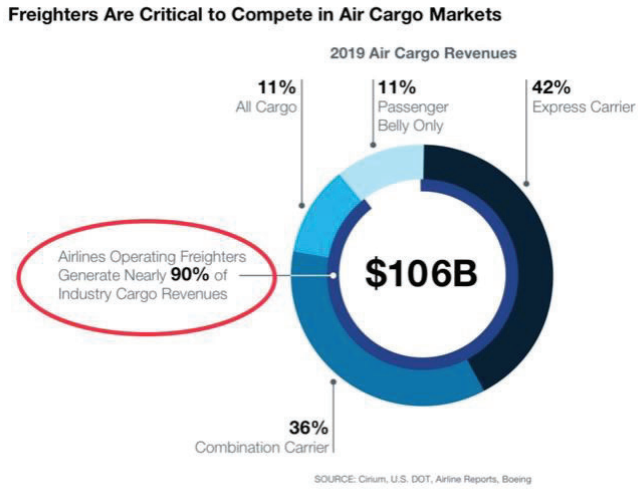


[32] ONS – Internet sales as a percentage of total retail sales
[33] Boeing WACF – page 17
[34] Boeing WACF – overview

New trade deals will increase the need for both bellyhold and dedicated freighters and the latter will increase the quantitative need for Manston. To suggest otherwise goes against all the evidence.

Whilst on the subject, LC has asserted that bellyhold freight is more economic than freight carried on dedicated freighters[35]. She claims to have provided proof in her 2019 report in paras. 4.7 to 4.15. However, having looked at that document, there is no credible factual evidence to back up her claims and it is just a mixture of anecdotal evidence and supposition on her part.

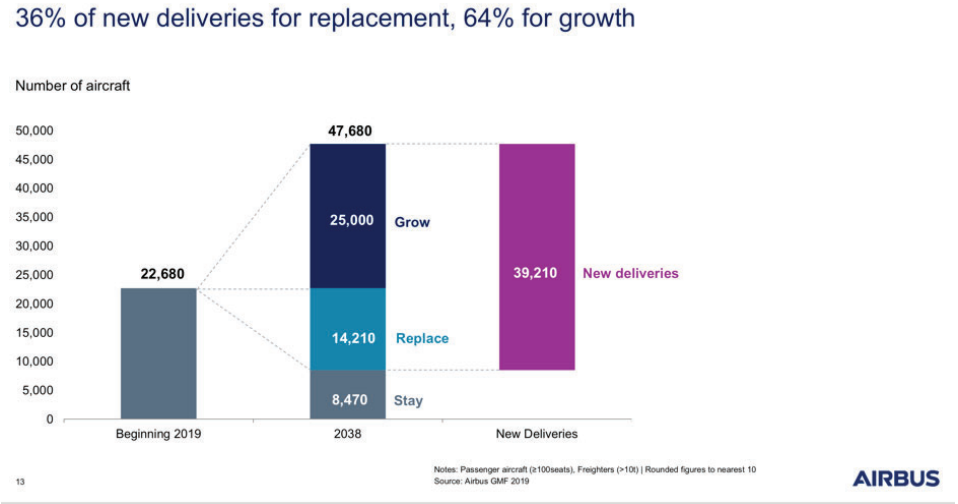
What is fact is that Airlines operating freighters generate nearly 90% of Industry cargo revenues[36]:



4.6 Changes in airline fleets

LC states "*Some large operators of freighter aircraft have placed new factory orders for additional aircraft but at least some of these new orders will be one-for-one replacements of existing aircraft within freighter fleets, which in principle would not contribute to growth within the market".*

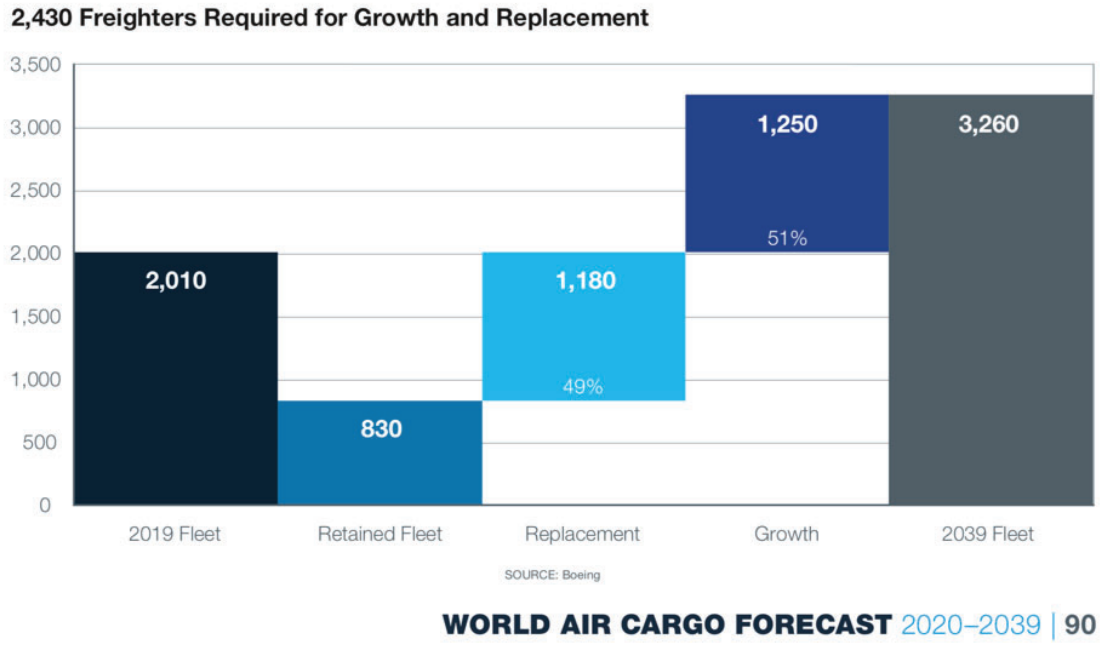
This statement is at odds with the evidence:



The graphic above is from the 2019 forecast[37] which is their latest release and shows growth for passenger and freighter aircraft.

[35] [LC] – page 8 section 2.11
[36] Boeing WACF – page 19
[37] Airbus 2019 forecast – page 13

Boeing have a more up to date and therefore more relevant graphic:



This graphic shows that 51% of freighters will be for growth. LC has, once again, misrepresented the evidence.

LC has failed to mention a recent trend away from wide-body aircraft:

"A trend among airlines of phasing out four-engine widebody aircraft in favour of smaller, more fuel-efficient two-engine aircraft, including even narrow bodies, has accelerated"[38].

This trend is explained because *"a narrow-body airplane can make money in good times and lose money in bad times, but the swing in either direction is not so great. A wide-body can make more money in good times, of course because they can carry more people. But they also can lose a lot more in weaker times, because of their high monthly ownership costs, fuel, and labour requirements"*[39].

Orders for the new Airbus A321XLR are strong with 20 companies and 450 ordered so far[40]. "*The A321XLR is a single-aisle, narrow-body aircraft with a typical two-class capacity of 180-200. But it pushes the range to the highest of any narrowbody – up of 8,700 kilometers (4,700 NM)*"and "*should enter service in 2023*"[41].

According to Airbus figures, the A321XLR will have "*20% lower fuel burn per seat, 5,000 tonnes less CO2 per year, and a noise footprint that is 50% lower for passengers and airports*"[42].

For aeroplane operators, the increased range, increased fuel economy and a smaller Carbon footprint will make such planes an attractive proposition.

If this trend for a reduction in wide-body aircraft does materialise then it has huge ramifications for belly hold cargo. The narrow-bodied planes clearly have less belly hold capacity and once passenger baggage has been accommodated there is not going to be much room for air cargo. For example, the A321XLR could

[38] Forbes – fewer wide-body aircraft
[39] Forbes – fewer wide-body aircraft
[40] Travel Daily – switch to narrow bodied
[41] Simple Flying - A321XLR
[42] Airbus A321XLR

accommodate 3 tonnes of additional cargo compared with 13.5 tonnes in a B747-400ER[43]. This potential reduction in bellyhold capacity strengthens the case for reopening Manston for dedicated freighters.

4.7.0 Changes in capacity at other airports

4.7.1 Heathrow

As has already been stated, this has already been covered by us in detail in SMAa [Matter 2] section 1.2, and previously in this representation under section 3.1. Heathrow expansion is unlikely to happen for a considerable length of time and certainly later than the date assumed by the Examining Authority.

4.7.2 Stansted

LC states that "the current position remains as at July 2019 in that Stansted has substantial headroom to grow its freighter activity".

We addressed this point in detail in SMAa [Matter 2] section 1.1 and concluded:

"The evidence demonstrates that for the maximum Cargo ATMs availability is shrinking and must continue to fall because of the clear intention of MAG to increase passenger numbers. Depending on three scenarios the % reduction in the maximum Cargo ATMs available (currently 20,500) range from a Minimum 22% reduction (to 16,000) to a maximum of 71% reduction (to 6,000)[44].

In summary, because of the appeal decision to grant the planning application, Stansted will not have sufficient Cargo ATMs in the very near future to meet the cargo need as it increases its passenger ATMs closer and closer to the total ATMs available at Stansted. In our view this change increases the quantitative need for Manston Airport".

4.7.3 Gatwick and Luton

Both airports have a long way to go before their plans for expansion are realised and even when they do, as acknowledged by LC, the plans involve passenger growth and not dedicated freighters so are irrelevant.

4.7.4 Southampton

Although planning permission has been granted as LC states "**an extended runway will allow the Airport to rebuild its reduced passenger network since the closure of Flybe. This may offer some limited opportunities for short haul freight**". **It seems unlikely that such expansion materially alters the quantitative need for the Manston development, and one wonders why LC bothered to mention it?**

4.7.5 East Midlands

LC states "that Manston, located where it is, would be highly unlikely to offer any competition to East Midlands".

However, this should not be seen as an either East Midlands or Manston Airport situation. Instead, it should be seen as a vital opportunity to build significant resilience to the air freight market by having both airports available for dedicated freighters, one serving the Midlands / North and the other the South of England.

As has been stated earlier, e-commerce is a huge market and will continue to grow and would certainly support the use of both East Midlands and Manston Airports.

[43] [RSP Annex 3] – para 28

[44] Reduction in air cargo ATMS at Stansted

From our representation SMAa [Matter 2] section 2.1 "*One of the major drivers of this increase in e-commerce is Amazon and it is significant to note that Amazon are in the process of building a "Mega Shed" in Dartford. This will be one of their largest warehouses in Europe and its four floors will encompass 2.3 million square feet.*

Amazon have decided to make this huge investment in the South East rather than in the Midlands which is very telling. As has already been stated, neither Stansted nor Heathrow will have sufficient capacity to meet the need for e-commerce dedicated freighters in the next 5 to 10 years. In contrast, Manston Airport will have the necessary capacity and the location of this facility is much closer to Manston than East Midlands by road (58.5 miles as compared with 141.2 miles)[45]. Since the warehouse is adjacent to the Thames, it opens up the possibility of using greener methods of transporting goods from Manston, via Ramsgate Port, to Dartford.

Consumers increasingly expect rapid / next day delivery of their e-commerce items. The extra delay from landing their goods at East Midlands and then having to truck them down to Kent and the South East adds a significant extra delay compared to landing e-commerce items at Manston".

4.8 Quantifying the Need for Manston Airport

Sections 4.65 to 4.68 involve LC making forecasts for future growth.

As has already been stated, LC is not qualified to act as an expert in aviation forecasting. Instead, we believe the SoS should rely on expert predictions for the future growth of air cargo as produced by Boeing, Airbus and IATA

5.0 Conclusion

LC has produced a lengthy representation covering some 43 pages, but she has said virtually nothing new. The report contains several errors and/or serious omissions.

- LC has failed to acknowledge the positive implications for the development of the long delay in the Heathrow expansion.
- LC has underplayed the significance of the MBU for the development.
- LC misunderstood or misrepresented the situation in section 3.14.
- The points raised by LC in section 3.14 of her report were irrelevant to the granting of the DCO for Manston.
- The point raised by LC in section 3.15 about reviewing the Policy is pointless. The airport is safeguarded for airport related uses and the applicant owns the airport land.
- The statement by LC "*To the extent that there is ongoing unemployment in Kent, the Airport would, at best, make only a small contribution to overcoming the issue*" is blatantly untrue.
- The statement by LC that the "*Thames Freeport will be of no benefit to Manston Airport"* is not true.
- The comments by LC about The London Resort and Ebbsfleet City are pointless.
- LC refers to the Lower Thames Crossing, but it is hard to see that the opening of the Lower Thames Crossing will make any material difference to the decision of granting the DCO.
- LC used incorrect data in representing the freight situation in May 2021.
- LC tried to imply that predictions for future freighter numbers have remained static whereas they equate to a 60% growth.
- It seems astonishing that LC decided not to include the effect the pandemic has had on e-commerce and internet sales because of the implications it has for air cargo and dedicated freighter use.
- LC's statement that "*Prima facie, there is no change in the need for additional airport capacity going forward for dedicated freighter operations as a consequence of the Covid-19 pandemic"* is not correct.
- New trade deals will increase the need for both bellyhold and dedicated freighters and the latter will increase the quantitative need for Manston. For LC to suggest otherwise goes against all the evidence.
- Contrary to what LC stated, evidence shows 51% of new freighters will be for growth and not replacements.

[45] AA route finder

- LC has failed to mention a recent trend away from wide-body aircraft towards narrow-body planes which, if it continues, strengthens the quantitative need for the development.
- LC has failed to make the case that other airports in the Southeast will have sufficient Cargo ATMs to meet the cargo needs.
- LC has failed to grasp that dedicated freighter aircraft will make up at least 50% of global air cargo traffic.
- LC has failed to grasp that carrying freight as bellyhold has limitations.
- LC continues to make aviation forecasts when it has been established that, although she is qualified to be an expert in socio-economic factors, she is not qualified as an expert witness for aviation forecasts.

For all the reasons outlined above, we urge the Secretary of State to consider the arguments that we have put forward and conclude that the representation by LC for Grant Harrison does not stop the granting of the DCO for Manston.

<u>From the SMAa Committee on behalf of the 3,700 members</u>

Dr Beau Webber (Chairman)

Addendum

TR020002 – SMAa representation to the Secretary of State for Transport

Response to Jennifer Dawes – Annex 1 – Report by Louise Congdon of York Aviation [LC]

Since writing our report in July 2021, important events have occurred, and we felt it important for us to make them available to you.

3.3 Climate Change

LC states "*We do not address this change in detail in this Report*" but does state "*there tends to be a lag in upgrading the freighter fleet to the newest technology. This would suggest that development of an airport specifically aimed at attracting more dedicated freighter operations is more likely to use a higher share of the UK's Carbon Budget*"[8].

This statement is not born out by recent events:

1) British Airways runs first flight with SAF

In September BA operated its first passenger flight using sustainable aviation fuel between Heathrow and Glasgow and the flight resulted in 62% fewer carbon emissions compared to a similar journey in 2010 according to BA.[46]

There is no reason why freighter aircraft cannot also benefit from mixing SAF fuels with conventional fuels in the same way that BA did for its passenger aircraft.

2) ASL Aviation Holdings to fly Hydrogen-powered planes

In October ASL Aviation Holdings announced that it is to use an ATR 72-600F plane converted to operate using Hydrogen fuel and intend to purchase up to 10 conversion kits to make their other ATR 72 freighters run on Hydrogen.[47]

According to the manufacturer ATR 72-600F freighters can carry 9 tonnes and are 9dB quieter than the most stringent ICAO requirements.[48]

Zero carbon emissions quiet freighter aircraft technology already exists and "*industry experts expect the hydrogen aircraft market to reach over $174 billion by 2040*".[49]

3) IATA Annual General Meeting

At the IATA Annual General Meeting held in October 2021, the members representing 290 airlines (82% of global air traffic) approved a resolution for the air transport industry to achieve net-zero carbon emissions by 2050.[50]

In their presentation they outline that there is a big role for Sustainable Aviation Fuels (SAF) and they plan for SAF to bring about a reduction in carbon emissions by 65%. Use of new propulsion systems such as Hydrogen or electric will make up approximately 13% with efficiency improvements accounting for a further 3%. The rest will be achieved through carbon capture and storage (11%) and offsets (2%).

[46] Airport Technology September 2021
[47] Aerotime October 2021
[48] ATR 72-600F specifications
[49] Aerotime October 2021
[50] IATA press release October 2021

IATA also reaffirmed their support for CORSIA in their resolution.

Manston will play its part with its development being as carbon neutral as possible and having the infrastructure to supply SAF and Hydrogen fuels, but it is airlines not airports, with government and industry support, that will deliver net-zero carbon emissions from aircraft.

4) What makes a sustainable airport?

"*The development of sustainable aviation fuels, including biofuels, hydrogen, and electric-powered aircraft is well underway, but will take time. The sustainable airport is something we can achieve right now. Airports have a fantastic opportunity to lead the sustainability agenda, pioneer progressive economic measures and practices, and ensure that the industry is seen as an active participant in the shift to a net zero economy*".[51]

In our representation Matter 3 section 1.0 Background we outlined in detail the Carbon Minimisation Action Plan and the updated Register of Environmental Actions and Commitments produced by RSP to make Manston a sustainable airport. It matches the criteria set by Arup and by granting the DCO it will take up the challenge set to "*lead the sustainability agenda, pioneer progressive economic measures and practices, and ensure that the industry is seen as an active participant in the shift to a net zero economy".*

The focus globally is on incorporating green technologies into all methods of transport and this reaffirms our belief that the proposed development at Manston will not have a significant negative effect on the global climate.

5) Net Zero Strategy: Build Back Greener

The government has now published its "Net Zero Strategy" which indicates how the UK will achieve Net Zero by 2050. In reference to the aviation sector, it states:

"*We will address aviation emissions through new technology such as electric and hydrogen aircraft, the commercialisation of sustainable aviation fuels, increasing operational efficiencies, developing and implementing market-based measures and GHG removal methods, while influencing consumers to make more sustainable choices when flying".*[52]

Both IATA and government have identified the same key areas in aviation that will enable the UK to reach Net Zero. Whether freighters land at Manston or elsewhere in the UK will have no bearing whatsoever on the ability of the UK to reach Net Zero so the point raised by LC is irrelevant.

4.2 The effects of Covid

Since writing there have been a further 3 IATA Air Cargo Market Analysis statements and the latest released on 29th September for August 2021 states:

"*Growth in air cargo remained robust in August - Air cargo demand has stabilized over the past four months at levels well above the pre-pandemic period. Industry-wide cargo tonne-kilometres (CTKs) rose by 7.7% in August 2021 vs. August 2019, which is only modestly slower than in July (8.8%) and well above the long-term monthly average of 4.7%.*"[53]

[51] Arup – What makes a sustainable airport
[52] Net Zero Strategy: Build Back Greener – page 156
[53] IATA air freight monthly analysis August 2021

As stated before one of the biggest drivers of this increase has been the huge growth in e-commerce. All the indications are that the need for dedicated freighters to deliver these goods is going to continue to grow as indicated by Boeing who are predicting a 60% increase in dedicated freighters in the next two decades.[54]

For all the reasons outlined above, we urge the Secretary of State to consider the arguments that we have put forward and conclude that the representation by LC for Grant Harrison does not stop the granting of the DCO for Manston.

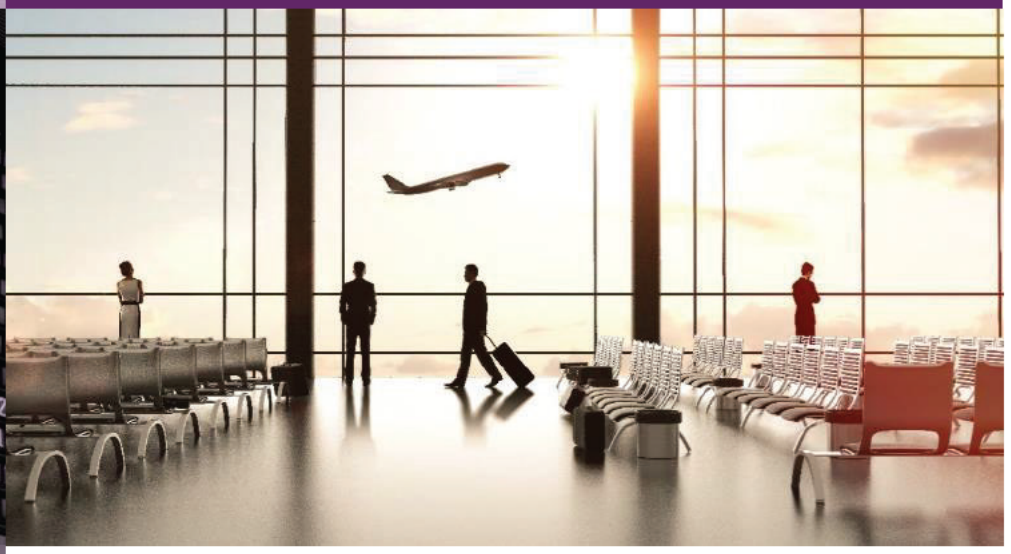
From the SMAa Committee on behalf of the 3,700 members

Dr Beau Webber (Chairman)

[54] Boeing WACF – page 10

References for SMAa representation to the Secretary of State for Transport
Response to Jennifer Dawes – Annex 1 – Report by Louise Condon [LC]

Passenger Traffic Forecasts for Bristol Airport to Inform the Proposed Development to 12 mppa



Bristol Airport Limited

Final Report

November 2020

York Aviation

back' as the air transport market catches up with economic recovery. This means that the medium to long term forecasts are not expected to be significantly affected by ongoing restrictions into 2021.

'Top Down' Allocation Model Forecasting

2.26. In the longer term, the traffic forecasts use an econometric passenger allocation model to determine how the underlying passenger demand base in the broad catchment area around Bristol Airport will split between it and a number of competing airports. The airports within the model are Bristol, Birmingham, Bournemouth, Cardiff, Exeter, Gatwick, Heathrow, Luton, Newquay and Stansted.

2.27. The allocation model is similar in concept to that used by the Department for Transport within its aviation forecasting suite. The approach uses a multinomial logit form, a type of discrete choice regression analysis. This essentially examines how passengers make choices between the different airports available based on factors including surface access time, flight time, the availability of the relevant destination, the 'quality' of service as represented by the level of service frequency offered, the availability of indirect options, airline type and fares on offer.

2.28. In this case, the model has been calibrated using data from CAA Passenger Survey, schedules data from the Official Airline Guide (OAG) and travel times data from Google Maps. For the majority of the airports in the model, the core passenger choice data has been drawn from the CAA Passenger Survey 2019[12]. Where airports were not surveyed in 2019, the last available CAA Passenger Survey data for that airport has been used as a basis with route networks and passenger volumes updated to 2019 levels using data from CAA Statistics.

2.29. Different models of passenger behaviour have been estimated to reflect different segments of the air transport market, notably different behaviours in relation to domestic, short haul and long haul travel.

2.30. The model operates at a CAA district level[13]. It derives market shares for each airport in the model within each district based on the passenger choice parameters described above. As markets grow, it examines how the market share balance will change based on how frequencies are expected to grow at each airport and based on any capacity constraints that are relevant at each airport. The way that frequency at each airport is expected to grow is based on airports' previous frequency growth in response to underlying demand growth in the UK market.

2.31. In relation to airport capacity constraints, only Heathrow and Gatwick are assumed to be currently constrained. Their growth within the model is limited to incremental growth up to assumed capacities of 90 million passengers per annum and 50 million passengers per annum respectively, consistent with Department for Transport assumed capacities. Capacity expansion plans at both airports are currently uncertain and are certainly highly unlikely to be delivered within the timescales originally envisaged within the plans of both airports. In the majority of scenarios tested, the model assumes that a third runway is delivered at Heathrow in 2033 and no additional capacity is added at Gatwick. A sensitivity test has, however, been undertaken, with Gatwick adding a second runway in 2028. In order to produce a 'Without Development' scenario to inform the supplementary environmental assessments in the ES Addendum, Bristol Airport is artificially constrained at 10 mppa, reflecting the extant planning permission.

2.32. The mechanism for applying this constraint within the model is by adding a time penalty for passengers using constrained airports. This makes the airports in question less attractive within the model and makes the initial choice to fly less attractive. This results in two effects: passengers choosing to use an alternative airport for their travel needs based on the relative attractiveness of the options available; or some passengers choosing not to travel. In the latter case, this effect uses elasticities once again taken from the Department for Transport's UK Aviation Forecasts to assess the number of passengers lost due to the increase in the effective 'cost' of flying.

[12] The CAA surveys a number of airports each year, the main London airports, Manchester, Birmingham and East Midlands. Others are surveyed on a rotational basis approximately every four years. Bristol and Cardiff were surveyed in 2019.
[13] In the main these reflect local authority districts but there are some minor differences.

The Planning Inspectorate

Appeal Decision

Inquiry held over 30 days between 12 January 2021 and 12 March 2021
Site visits made on 17 December 2020 and 10 March 2021

by Michael Boniface MSc MRTPI, G D Jones BSc(Hons) DipTP MRTPI and Nick Palmer BA (Hons) BPl MRTPI

Panel of Inspectors appointed by the Secretary of State

Decision date: 26 May 2021

Appeal Ref: APP/C1570/W/20/3256619
London Stansted Airport, Essex

- The appeal is made under section 78 of the Town and Country Planning Act 1990 against a refusal to grant planning permission.
- The appeal is made by Stansted Airport Limited against the decision of Uttlesford District Council.
- The application Ref UTT/18/0460/FUL, dated 22 February 2018, was refused by notice dated 29 January 2020.
- The development proposed is airfield works comprising two new taxiway links to the existing runway (a Rapid Access Taxiway and a Rapid Exit Taxiway), six additional remote aircraft stands (adjacent Yankee taxiway); and three additional aircraft stands (extension of the Echo Apron) to enable combined airfield operations of 274,000 aircraft movements (of which not more than 16,000 movements would be Cargo Air Transport Movements) and a throughput of 43 million terminal passengers, in a 12-month calendar period.

Decision

1. The appeal is allowed and planning permission is granted for airfield works comprising two new taxiway links to the existing runway (a Rapid Access Taxiway and a Rapid Exit Taxiway), six additional remote aircraft stands (adjacent Yankee taxiway); and three additional aircraft stands (extension of the Echo Apron) to enable combined airfield operations of 274,000 aircraft movements (of which not more than 16,000 movements would be Cargo Air Transport Movements) and a throughput of 43 million terminal passengers, in a 12-month calendar period at London Stansted Airport, Essex in accordance with the terms of the application, Ref UTT/18/0460/FUL, dated 22 February 2018, subject to the conditions contained in the attached Schedule.

Application for Costs

2. At the Inquiry an application for costs was made by Stansted Airport Limited against Uttlesford District Council. This application is the subject of a separate Decision.

Preliminary Matters

3. The Inquiry was held as a wholly virtual event (using videoconferencing) in light of the ongoing pandemic. The Panel undertook an accompanied site visit to the airport on 10 March 2021 and an unaccompanied visit around the

surrounding area on the same day. An unaccompanied visit to the publicly accessible parts of the airport and surrounding area also took place on 17 December 2020.

4. On 18 May 2018, during the course of the planning application, the Council agreed to a request from the appellant to change the description of development to include a restriction on cargo air transport movements. This is the basis upon which the Council subsequently determined the application. The appeal has been considered on the same basis.

5. The Council resolved to grant planning permission for the development on 14 November 2018 but subsequently reconsidered its position before formally refusing planning permission. In light of the Council's reasons for refusal, its subsequent statement of case in this appeal and given the length of time that had passed since the application was made, an Environmental Statement Addendum (October 2020) (ESA) was produced to update the original Environmental Statement (February 2018) (ES). The Council consulted on the ESA so that all parties had an opportunity to consider its content. As such, the Panel is satisfied that no party is prejudiced by its submission at the appeal stage.

6. The ES and ESA were prepared in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (EIA Regulations), including technical appendices and a non-technical summary. They cover a range of relevant topics, informed at the ES stage by a Scoping Opinion from the Council. The Panel is satisfied that the totality of the information provided is sufficient to meet the requirements of Schedule 4 of the EIA Regulations and this information has been taken into account in reaching a decision. Accordingly, while some of the evidence is critical of the ES and ESA, including in respect to their conclusions regarding carbon emissions, there is no significant contradictory evidence that causes the ES or the ESA to be called into question.

7. A local campaign group known as Stop Stansted Expansion (SSE) was granted Rule 6 status and participated as a main party to the Inquiry. However, shortly before the Inquiry opened it elected to rely on its written evidence for several topics so that a witness was not made available for cross-examination on those topics[1]. As such, this evidence was untested and has been considered by the Panel on this basis.

8. Rule 6 status was also granted jointly to Highways England and Essex County Council (the Highway Authorities) who initially opposed the proposal on highway grounds. However, these issues were resolved before the exchange of evidence and the Highway Authorities subsequently withdrew from the appeal proceedings, subject to appropriate planning obligations being secured.

9. The Council's fourth reason for refusing planning permission referred to the adequacy of infrastructure and mitigation measures needed to address the impacts of the development. This reason was partly addressed following agreement with the Highway Authorities about the scope of highways mitigation required, including at Junction 8 of the M11. The adequacy and need for other forms of mitigation are addressed in the body of this decision in

[1] Historical Background, Noise, Health and Well-Being, Air Quality, Surface Access (Rail)

relation to relevant topics and/or in relation to the discussion on conditions and planning obligations, such that this is not a main issue in the appeal.

10. Upon exchange of evidence between the parties, it became clear that the Council accepted that planning permission should be granted for the development, subject to conditions and obligations. However, there remained significant divergence between the parties as to the form and extent of any conditions and much time was spent discussing this matter over the course of the Inquiry.

11. On 20 April 2021, the Government announced that it would set a new climate change target to cut emissions by 78% by 2035 compared to 1990 levels and that the sixth Carbon Budget will incorporate the UK's share of international aviation and shipping emissions. The parties were invited to make comment and their responses have been taken into account in reaching a decision[2].

Main Issues

12. The main issues are the effect of the development on aircraft noise, air quality and carbon/climate change.

13. However, it is first necessary to consider national aviation policy and some introductory matters.

Reasons

National Aviation Policy and Introductory Matters

14. The Aviation Policy Framework (March 2013) (APF) sets out the Government's high-level objectives and policy for aviation. It recognises the benefits of aviation, particularly in economic terms, and seeks to ensure that the UK's air links continue to make it one of the best-connected countries in the world. A key priority is to make better use of existing runway capacity at all UK airports. Beyond 2020, it identifies that there will be a capacity challenge at all of the biggest airports in the South East of England.

15. There is also, however, an emphasis on the need to manage the environmental impacts associated with aviation and a recognition that the development of airports can have negative as well as positive local impacts. Climate change is identified as a global issue that requires action at a global level, and this is said to be the Government's focus for tackling international aviation emissions, albeit that national initiatives will also be pursued where necessary.

16. More recently, the Government published the ANPS[3] and MBU[4], on the same day, as early components of the forthcoming Aviation Strategy. The ANPS is primarily concerned with providing a policy basis for a third runway at Heathrow and is relevant in considering other development consent applications in the South East of England. It is of limited relevance to the current appeal as it is not a Nationally Significant Infrastructure Project (NSIP). Although the ANPS does refer to applications for planning permission, it notes the findings of the Airports Commission on the need for more intensive use of

[2] Having heard a significant amount of evidence on carbon and climate change during the Inquiry, the matters raised by the announcement did not necessitate reopening the Inquiry. Nor was it necessary for the ES to be further updated, as the announcement does not have a significant bearing on the likely effects of the development
[3] Airports National Policy Statement: new runway capacity and infrastructure at airports in the South East of England (June 2018)
[4] Beyond the horizon, The future of UK aviation, Making best use of existing runways (June 2018)

existing infrastructure and accepts that it may well be possible for existing airports to demonstrate sufficient need for their proposals, additional to (or different from) the need which is met by the provision of a Northwest Runway at Heathrow.

17. MBU builds upon the APF, again referencing work undertaken by the Airports Commission which recognised the need for an additional runway in the South East by 2030 but also noted that there would be a need for other airports to make more intensive use of their existing infrastructure. On this basis, MBU states that the Government is supportive of airports beyond Heathrow making best use of their existing runways[5]. There is no requirement flowing from national aviation policy for individual planning applications for development at MBU airports, such as Stansted, to demonstrate need[6] for their proposed development or for associated additional flights and passenger movements. This was not disputed by the Council and whilst SSE took a contrary view, even its witness accepted that there was a need for additional capacity within the London airport network, beyond any new runway at Heathrow[7].

18. The in-principle support for making best use of existing runways provided by MBU is a recent expression of policy by the Government. It is given in full knowledge of UK commitments to combat climate change, having been published long after the Climate Change Act 2008 (CCA) and after the international Paris Agreement. It thoroughly tests the potential implications of the policy in climate change terms, specifically carbon emissions. To ensure that Government policy is compatible with the UK's climate change commitments the Department for Transport (DfT) aviation model was used to look at the impact of allowing all MBU airports to make best use of their existing runway capacity[8]. This methodology appears to represent a robust approach to the modelling.

19. International aviation emissions are not currently included within UK carbon budgets and are instead accounted for through 'headroom' in the budgets, with a planning assumption for aviation emissions of 37.5Mt of CO_2. Whilst the Government has recently announced that international aviation will expressly form part of the sixth Carbon Budget, its budget value has not yet been defined.

20. Of course, the headroom approach of taking account of emissions from international aviation which has been used to date means that accounting for such carbon emissions as part of the Carbon Budget process is nothing new. What is set to change, however, is the process by which it is taken into account. As of yet, there has been no change to the headroom planning assumption. Nor has there been any indication from the Government that there will be a need to restrict airport growth to meet the forthcoming budget for international aviation, even if it differs from the current planning assumption. The specific carbon/climate change implications of this appeal are considered in more detail below.

[5] There is nothing in MBU which suggests that making best use proposals cannot involve operational development of the type proposed in this case
[6] Notwithstanding conclusions in relation to Manston Airport, which is not comparable to the current proposal (being a Development Consent Order scheme, involved an unused airfield and was a cargo-led proposal rather than passenger)
[7] Brian Ross in response to questions from the Inspector
[8] Emissions from UK airports not included in the model are unlikely to be significant as they are small and offer only short-range services

21. MBU sets out a range of scenarios for ensuring the existing planning assumption can be met, again primarily through international agreement and cooperation, considering carbon traded or carbon capped scenarios. It concludes that the MBU policy, even in the maximum uptake scenario tested, would not compromise the planning assumption.

22. Notwithstanding that conclusion, no examples of MBU-type airport development having gained approval since the publication of MBU were brought to the attention of the Inquiry[9] and whilst numerous other airports have plans to expand, none of those identified appear to have a prospect of receiving approval before this scheme. As such, it can be readily and reasonably concluded that this development would not put the planning assumption at risk.

23. Consistent with the APF, MBU differentiates between the role of local planning and the role of national policy, making it clear that the majority of environmental concerns, such as noise and air quality, are to be taken into account as part of existing local planning application processes. Nonetheless, it adds that some important environmental elements should be considered at a national level, such as carbon emissions, which is specifically considered by MBU. The Council apparently understood this distinction in resolving to grant planning permission in 2018. However, it subsequently changed its position, deciding that carbon is a concern for it as local planning authority despite MBU, and this led, at least in part, to the refusal of planning permission, as well as to its subsequent case as put at the Inquiry.

24. Since publication of MBU, UK statutory obligations under the CCA have been amended to bring all greenhouse gas emissions to net zero by 2050, compared to the previous target of at least 80% reduction from 1990 levels. In addition, the Government has indicated a new climate change target to cut emissions by 78% by 2035 compared to 1990 levels, effectively an interim target on the journey to net zero. Notwithstanding these changes, MBU has remained Government policy. There are any number of mechanisms that the Government might use to ensure that these new obligations are achieved which may or may not involve the planning system and may potentially extend to altering Government policy on aviation matters.

25. These are clearly issues for the Government to consider and address, having regard to all relevant matters (not restricted to aviation). The latest advice from the Committee on Climate Change (CCC) will be one such consideration for the Government but it cannot currently be fully known to what extent any recommendations will be adopted. The Government is clearly alive to such issues and will be well aware of UK obligations[10].

26. The ES and ESA contain detailed air traffic forecasts which seek to demonstrate the difference between a 'do minimum' scenario, where the airport makes use of its existing planning permission within its relevant restrictions, and the 'development case' scenario where the appeal development were to proceed. The forecasts are prepared in accordance with industry guidance and practise

[9] With the potential exception of the Southampton Airport scheme, which involved a runway extension to accommodate larger aircraft. No detailed evidence in relation to this scheme was provided by the parties, but it would not alter the Panel's conclusions on MBU support even if an increase in capacity resulted from the scheme
[10] Not least from the recent Supreme Court Judgement in respect of the ANPS - R (on the application of Friends of the Earth Ltd and others) v Heathrow Airport Ltd [2020] UKSC 52

by a professional in this field working as a Director in the aviation department for a global consulting service.

27. The Council, whilst highlighting the inherent uncertainty in forecasts and projections into the future, did not dispute the appellant's position on forecasting, concluding that the predictions were reasonable and sensible[11]. SSE made a series of criticisms of the inputs and assumptions used by the appellant, but these were largely based on assertion and often lacked a clear evidential basis. Different opinions about the likely number of passengers per air transport movement, fleet replacement projections, dominance of / reliance on a single airline at Stansted and cargo expectations were all rebutted by the appellant with justification for the inputs and assumptions used. The Panel was not persuaded that the conclusions in the ES and ESA were incorrect or unreliable. Indeed, they are to be preferred over the evidence of SSE on this matter, which was not prepared by a person qualified or experienced in air traffic forecasting. Accordingly, the forecasts contained within the ES and ESA are sufficiently robust and the best available in this case.

28. The appellant's forecasts do not align with those prepared by the Government in 2017 (DfT forecasts) which are used as the basis for conclusions in MBU, as referred to above. However, there is no reason why they should. The DfT makes clear that its forecasts are a long-term strategic look at UK aviation, primarily to inform longer term strategic policy. They do not provide detailed forecasts for each individual airport in the short-term and the DfT acknowledge that they may differ from local airport forecasts, which are prepared for different purposes and may be informed by specific commercial and local information not taken into account by the DfT. As such, the DfT states that its forecasts should not be viewed as a cap on the development of individual airports.

29. On this basis, the Panel does not accept that a divergence between the appellant's and the DfT's forecasts indicate any unreliability in the data contained in the ES and ESA. Nor is there any justification for applying a reduction to the appellant's forecasts[12]. Furthermore, SSE's forecasting witness recently challenged the validity and reliability of the DfT forecasts in the High Court while acting for SSE, thereby further calling into question the credibility of their now contradictory evidence to this Inquiry.

30. It remained unclear throughout the Inquiry, despite extensive evidence, why the speed of growth should matter in considering the appeal. If it ultimately takes the airport longer than expected to reach anticipated levels of growth, then the corresponding environmental effects would also take longer to materialise or may reduce due to advances in technology that might occur in the meantime. The likely worst-case scenario assessed in the ES and ESA, and upon which the appeal is being considered, remains just that. Conversely, securing planning permission now would bring benefits associated with providing airline operators, as well as to other prospective investors, with significantly greater certainty regarding their ability to grow at Stansted, secure long-term growth deals and expand route networks, potentially including long haul routes.

[11] Proof of Hugh Scanlon, UDC/4/1

[12] This is notwithstanding examples of previous air traffic forecasts for Stansted and other airports that have not be borne out for whatever reason. Any reduction to account for perceived optimism bias would be arbitrary and unlikely to assist the accuracy of the forecasts

31. SSE argued that the 'do minimum' case had been artificially inflated to minimise the difference from the 'development case'. However, there is no apparent good reason why the airport would not seek to operate to the maximum extent of its current planning restrictions if the appeal were to fail. Indeed, as a commercial operator, there is good reason to believe that it would. The fact that it does not operate in this way already does not mean it cannot or will not in future. In fact, the airport has seen significant growth in passenger numbers in recent years, since Manchester Airports Group took ownership, albeit that these have latterly been affected by the pandemic.

32. As such, there is no good reason to conclude that the air traffic forecasts contained within the ES and ESA are in any way inaccurate or unreliable. Of course, there is a level of uncertainty in any forecasting exercise but those provided are an entirely reasonable basis on which to assess the impacts of the proposed development. The Panel does not accept that there has been any failure to meet the requirements of the EIA Regulations, as concluded above.

Aircraft Noise

33. The overarching requirements of national policy, as set out in the National Planning Policy Framework (the Framework) and the Noise Policy Statement for England (NPSE), are that adverse impacts from noise from new development should be mitigated and reduced to a minimum and that significant adverse impacts on health and quality of life should be avoided. It is a requirement of the NPSE that, where possible, health and quality of life are improved through effective management and control of noise.

34. The APF states that the overall policy is to limit and, where possible, reduce the number of people significantly affected by aircraft noise. The APF expects the aviation industry to continue to reduce and mitigate noise as airport capacity grows and that as noise levels fall with technology improvements the benefits are shared between the industry and local communities.

35. While the APF states that the 57 dB LAeq 16 hour contour should be treated as the average level of daytime aircraft noise marking the approximate onset of significant community annoyance, the 2014 Survey of Noise Attitudes (SoNA) indicates that significant community annoyance is likely to occur at 54 dB $L_{Aeq\ 16\ hour}$. The latter metric has been used by the Civil Aviation Authority in its *Aviation Strategy: Noise Forecast and Analysis – CAP 1731.* It has also been used in the Government's consultation *Aviation 2050, The future of UK aviation.* The Council and the appellant agree that the 54 dB $L_{Aeq\ 16\ hour}$ contour should be the basis for future daytime noise restrictions in this case.

36. The NPSE describes the concepts of Lowest Observed Adverse Effect Level (LOAEL) and Significant Observed Adverse Effect Level (SOAEL). The LOAEL is set at 51 dB $L_{Aeq\ 16\ hour}$ in the DfT's Air Navigation Guidance and is the level above which adverse effects on health and quality of life can be detected. These levels apply to daytime hours. The corresponding levels at night are a LOAEL of 45 dB $L_{Aeq\ 8\ hour}$ and onset of significant annoyance at 48dB $L_{Aeq\ 8\ hour}$.

37. The World Health Organisation's (WHO) Environmental Noise Guidelines 2018 (ENG) recommend lower noise levels than those used in response to SoNA. The Government has stated in *Aviation 2050* that it agrees with the ambition to reduce noise and to minimise adverse health effects, but it wants

policy to be underpinned by the most robust evidence on these effects, including the total cost of action and recent UK specific evidence which the WHO did not assess. These factors limit the weight that can be given to the lower noise levels recommended in the ENG.

38. Aircraft modernisation is reducing aircraft noise over time. It has been demonstrated that the daytime 57 dB and 54 dB noise contours will decrease in extent over the period to 2032, both with and without the development, albeit that the 54 dB contour would be slightly larger in the development case (DC) compared to the do minimum (DM) scenario. The 51 dB LOAEL contour is however predicted to increase slightly in extent compared to the 2019 baseline.

39. The night-time 48 dB contour is also predicted to decrease in extent and this reduction would be greater in the DC than in the DM scenario. This is based upon there being a greater amount of fleet modernisation, including fewer of the noisier cargo flights.

40. The ESA compares the DC with the DM scenario at 2032, which is when the maximum passenger throughput is predicted to be reached, and at 2027 which is identified as the transition year. In 2032 there would be an increase in air noise levels during the daytime of between 0.4 and 0.6 dB which is assessed as a negligible effect. There would be a beneficial reduction in night-time noise of between 0.3 and 0.8 dB in the DC compared to DM, but this is also assessed as negligible.

41. Saved Policy ENV11 of the Uttlesford Local Plan 2005 (ULP) resists noise generating development if this would be liable to adversely affect the reasonable occupation of existing or proposed noise sensitive development nearby. The ESA demonstrates that this would not be the case.

42. It is necessary to ensure that the benefits in terms of the reduction in noise contours over time arising from fleet modernisation, and the reduction in night noise are secured in order that these are shared with the community in accordance with national policy in the APF. The Council's position is that the development is acceptable in terms of aircraft noise, subject to suitable mitigation measures. Condition 7 defines the maximum areas to be enclosed by 54 dB $L_{Aeq\ 16hour}$, and 48 dB $L_{Aeq\ 8\ hour}$ noise contours and requires that the area enclosed by each of those contours is reduced as passenger throughput is increased, in accordance with the findings of the ESA.

43. There is no control of the night-time noise contour under the existing permission. This is instead subject to control under the Government's night flight restrictions which impose a Quota Count. It is noted that the Secretaries of State in granting the last planning permission considered that there was no need for such a condition because of the existing controls.

44. However, the night flight restrictions do not cover the full 8 hour period used in the L_{Aeq} assessment. Consequently, if only the night flight restrictions were to be relied upon, there would be no control of aircraft noise between 23:00 and 23:30 hours and between 06:00 and 07:00 hours. The ESA has demonstrated that the reductions in night noise would be beneficial to health. For these reasons, inclusion of the $L_{Aeq\ 8hour}$ restriction in condition 7 would be necessary. In coming to this view, the Panel has taken into account the dual restrictions that would apply. However, the night noise contour requirement in condition 7

would be necessary to secure the benefit and it has not been demonstrated that the night noise restrictions would be sufficient in this respect.

45. The Panel has considered SSE's submissions concerning the methodology used in the ES and ESA. The use of L_{Aeq} levels in the assessment is in accordance with Government policy and reflects the conclusions of SoNA, but the ES and ESA also include assessments of the number of flights exceeding 60 and 65 dB(A) and maximum single event noise levels. The assessments of aircraft noise are comprehensive, and the methodology used is justified and widely accepted as best practice, including by the Government and industry. The Council considers that the methodology used is robust. The Panel has also considered the evidence on air traffic forecasts and, for the reasons given elsewhere in this decision, is satisfied that the assumptions regarding fleet replacements are robust.

46. SSE has referred to the number of complaints about noise increasing in recent years. However, it is also relevant to consider the number of complainants which has significantly decreased. These factors have been taken into account in the ES and ESA.

47. The existing sound insulation grant scheme (SIGS) provides for financial assistance to homeowners and other noise-sensitive occupiers, to be used to fund sound insulation measures. This uses a contour which is based on 63 dB $L_{Aeq\ 16\ hour}$ for daytime and the aggregate 90 dBA SEL footprint of the noisiest aircraft operating at night.

48. The submitted Unilateral Undertaking (UU) provides for an enhanced SIGS whereby a 57 dB daytime contour is used, thereby increasing its extent and the number of properties covered. This is consistent with the evolving perceptions of the level of significant adverse effects and exceeds the levels recommended for such measures as stated in the APF. The use of this contour together with the 90 dBA SEL footprint as qualifying criteria would provide mitigation against both daytime and night-time noise. The latter criterion recognises that sleep disturbance is more likely to arise from single events than average noise levels over the night-time period.

49. The UU also applies to specific identified noise-sensitive properties including schools, community and health facilities and places of worship. An assessment of these properties has been undertaken using the daytime 57 dB contour used for residential properties, the number of flights above 65 dB and the maximum sound levels of aircraft flying over properties. Inclusion of properties in the list in Schedule 2 Part 1 of the UU means that bespoke measures may be discussed between the property owner and the airport operator and that further noise surveys may be undertaken. Thaxted Primary School does not qualify for inclusion in the list under the criteria used. However, submissions were made to the Inquiry that the school should be included. It has provisionally been included in the list subject to the Panel's decision.

50. Thaxted Primary School is outside, but adjacent to the boundary identified for the SIGS. This is represented by the 57 dB $L_{Aeq\ 16\ hour}$ and 200 daily flights above 65 dB (N65 200). The school is well outside the 63 and 60 dB contours, the former being the level that Government policy recognises, in the APF, as requiring acoustic insulation to noise-sensitive buildings and the latter the level to which this may potentially be reduced.

51. Departing aircraft predominantly take off towards the south-west, away from the school. Those that do take off towards the north-east turn onto standard routes away from the school before reaching it. The school is, however exposed to noise from arriving aircraft.

52. Standards for internal noise levels in schools are set out in *Building Bulletin 93 – Acoustic design of schools: performance standards* (BB93). These use $L_{Aeq\ 30mins}$ as a metric because school pupils experience noise over limited periods and not over the full daytime period. No assessment has been undertaken using this metric. It is, however, possible to determine the effect of the proposal having regard to the maximum sound levels of aircraft flying over the property in question.

53. It has been demonstrated that the school would not be exposed to L_{Amax} flyover levels of 72 dB or more. The Council agrees that this maximum level would ensure that internal noise levels would not exceed 60 dB, with windows open. This provides a good degree of certainty that noise levels would be in accordance with BB93 which states that indoor ambient noise levels should not exceed 60 dB $L_{A1,\ 30\ mins}$.

54. No representations have been made either by the school or the education authority with regard to inclusion of Thaxted Primary School in the list. It has not been demonstrated that the school should be included in the list in terms of any specific need for mitigation. For these reasons the inclusion of Thaxted Primary School in the list of properties in Schedule 2 Part 1 of the UU would not be necessary and on this basis this provision would not meet the tests in the Community Infrastructure Levy Regulations 2010 (the CIL Regulations).

55. The noise assessments in the ES and ESA take into account ground noise from aircraft. The Council's reason for refusal concerns only aircraft noise and not noise from ground plant and equipment or surface access. The Panel has considered the evidence provided by SSE in respect of the latter, but these do not alter its conclusions on this main issue.

56. It has been demonstrated beyond doubt that the development would not result in unacceptable adverse aircraft noise and that, overall, the effect on noise would be beneficial. Subject to the mitigation provided by the UU and the restrictions imposed by condition 7, the development would accord with Policy ENV11 of the ULP and with the Framework.

Air Quality

57. Although air pollution levels around the airport are for the most part well within adopted air quality standards, an area around the Hockerill junction in Bishop's Stortford has nitrogen dioxide levels that are above those standards. This is designated an Air Quality Management Area (AQMA). The development would increase emissions from aircraft, other airport sources and from road vehicles, but this would be against a trend of reduction in air pollution as a result, amongst other things, of increasing control of vehicle emissions.

58. The pollutants which are assessed are oxides of nitrogen (NOx), particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$). Ultrafine particulates (UFP) are recognised as forming a subset of $PM_{2.5}$ and they are likely to affect health. However, there is no recognised methodology for assessing UFP and the most that can be done is a qualitative, rather than quantitative assessment.

59. Policy ENV13 of the ULP resists development that would involve users being exposed on an extended long-term basis to poor air quality outdoors near ground level. The Policy identifies zones on either side of the M11 and the A120 as particular areas to which the Policy applies.

60. Paragraph 170 of the Framework states that development should, wherever possible, help to improve local environmental conditions such as air quality. Paragraph 181 states that planning decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of AQMAs and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified.

61. Emissions of NOx, PM_{10} and $PM_{2.5}$ would increase slightly in the DC compared to the DM scenario. They would also increase in comparison to the 2019 baseline. However, pollutant levels resulting from other sources, notably road traffic, are forecast to decline. The ES and ESA demonstrate that there would be no exceedance of air quality standards at human receptors and that air quality impacts would be negligible. The overall effect of the development in terms of air quality would be in accordance with the Framework and with the Clean Air Strategy, which refers to the need to achieve relevant air quality limit values. While the Framework seeks to improve air quality where possible, it recognises that it will not be possible for all development to improve air quality.

62. While the proposed development would not improve air quality, the UU secures a number of measures to encourage the use of public transport and to reduce private car use, including single occupancy car trips. The airport has a Sustainable Development Plan which, whilst not binding, commits to reducing air pollution. It has already achieved significant increases in use of public transport, thereby limiting emissions and these initiatives would be continued. The measures would have other objectives such as reducing carbon emissions, which would not necessarily benefit air quality but nonetheless the provisions of the UU would overall be likely to secure improvements in air quality.

63. Although it has raised a number of issues concerning the methodology used and the robustness of the assessments during the appeal process, the Council made no request for further information under the EIA Regulations.

64. SSE has commented on a number of aspects of the air quality assessments, including the transport data used, the receptors assessed and modelling. The appellant has provided clarification of the aspects that have been queried by SSE and has justified the approach taken and the assumptions made. The appellant's responses provide sufficient reassurance that the assessments are soundly based and that they are conservative.

65. The air quality assessment depends on the assessment of road traffic in terms of vehicle emissions. Surface access is dealt with elsewhere in this decision, but the transport modelling forms a robust assessment which has been accepted by the Highway Authorities. Consequently, this forms a sound basis for the air quality assessment.

66. The Clean Air Strategy includes a commitment to significantly tighten the current air quality objective for fine particulates, but no numerical standard has yet been set. The current objective for $PM_{2.5}$ is 25µg/m^3. The 2008 WHO guidelines recommend an ultimate goal for annual mean concentrations of

$PM_{2.5}$ of 10µg/m^3. The Clean Air Strategy commits to examine the action that would be necessary to meet this limit but no timescale for this has been set.

67. The ESA assesses the largest concentration of $PM_{2.5}$ in 2032 to be 11.6µg/m^3 in the DC. This is well below the current objective but slightly above the more ambitious WHO guideline. The great majority of the modelled concentrations would be below that guideline value. The assessment also shows that the effect of the development by comparison to the DM scenario would be negligible. The proposal would not unacceptably compromise the Clean Air Strategy in reducing concentrations of $PM_{2.5}$ and accords with the current objective.

68. The Bishop's Stortford AQMA is within East Hertfordshire District Council's (EHDC) administrative area. Policy EQ4 of the East Hertfordshire Local Plan 2018 requires minimisation of impacts on local air quality. That Policy also requires, as part of the assessment, a calculation of damage costs to determine mitigation measures. The ES and ESA demonstrate that there would be negligible effects for which the UU secures mitigation measures. EHDC has consequently raised no objection to the proposal.

69. The AQMA is centred around a traffic signal-controlled road junction which is enclosed by buildings on all sides. The A1250 is at a gradient on both sides of the junction. It is likely that the high monitored levels of pollutants here result from emissions from queuing traffic and the enclosing effect of the buildings. Nitrogen dioxide (NO_2) levels have been declining here in recent years, with a reduction in levels between 2012 and 2019. However, NO_2 levels remain above the air quality standard for 3 of the 4 locations monitored and significantly above the standard for 2 of those locations.

70. An adjustment factor has been used to compensate for the difference between modelled and measured concentrations of NO_2 in the AQMA. Uttlesford District Council is concerned that this factor is unusually high, but it has been undertaken in accordance with Defra's Local Air Quality Management Technical Guidance TG16 and on this basis, is not considered unreasonable. This guidance was used together with the Emission Factor Toolkit and Defra's background pollutant concentrations maps in predicting future improvements in air quality. Sensitivity tests using less optimistic assumptions regarding future improvements in air quality were incorporated in the ES and ESA. While there is acknowledged uncertainty in predicting future levels, a rigorous approach has been used in the assessment.

71. It is not disputed that airport activities contribute less than 1% to NOx concentrations in Bishop's Stortford. The appellant's transport modelling demonstrates that any increase in traffic along the A1250 and through the Hockerill junction would, at worst be 1.3% of current traffic flow in the DC compared to DM. This extra traffic would not necessarily be evenly distributed throughout the day. Queuing traffic would tend to increase emissions and the adjacent buildings would have an enclosing effect. Nonetheless, this level of additional traffic would be unlikely to appreciably affect pollution levels in the AQMA.

72. It is common ground that UFPs result from combustion sources including burning of aviation fuel, which contains higher levels of sulphur than fuel used for road vehicles. It is also agreed that there is no reliable methodology for assessing the quantity of UFPs that would result from the development. It is

the quantity of these particulates, rather than their mass, that is particularly relevant in terms of implications for human health.

73. Although the development would result in increases in $PM_{2.5}$, the ES and ESA demonstrate that those increases would be negligible compared to the DM scenario. It is also the case that ambient levels of $PM_{2.5}$ are predicted to reduce over time. The assessment considers the mass of $PM_{2.5}$. While assumptions can be made about the mass of UFPs as a subset of $PM_{2.5}$ reducing over time, it is not possible to conclude on the number of UFPs in the absence of any recognised assessment methodology. That said, the Health Impact Assessment considered epidemiological research, which includes the existing health effects of $PM_{2.5}$ and thus UFPs as a subset. This concluded that there would be no measurable adverse health outcomes per annum.

74. The Aviation 2050 Green Paper proposes improving the monitoring of air pollution, including UFP. While the significance of UFP as a contributor to the toxicity of airborne particulate matter is recognised, footnote 83 of the Green Paper notes that the magnitude of their contribution is currently unclear.

75. The Council, while raising concern over UFPs, is nonetheless content that permission could be granted subject to conditions requiring monitoring of air quality. The UU secures such monitoring, and condition 10 requires implementation of an air quality strategy, which is to be approved by the Council.

76. The nearby sites of Hatfield Forest and Elsenham Woods are Sites of Special Scientific Interest (SSSI). Policy ENV7 of the ULP seeks to protect designated habitats.

77. The ES and ESA assessments were undertaken in accordance with Environment Agency[13] and Institute of Air Quality Management (IAQM)[14] guidance. The ESA demonstrates that the development would result in long-term critical loads for NOx concentrations at the designated sites being increased by less than 1%.

78. Previous monitoring has shown that 24-hour mean NOx concentrations can greatly exceed annual mean concentrations. Condition 10 requires a strategy to minimise emissions from airport operations and surface access. A condition has also been suggested which would require assessment of 24-hour mean NOx concentrations at the designated sites and provision of any necessary mitigation. The IAQM guidance states that the annual mean concentration of NOx is most relevant for its impacts on vegetation as effects are additive. The 24-hour mean concentration is only relevant where there are elevated concentrations of sulphur dioxide and ozone which is not the case in this country. Natural England has accepted the assessment and has not requested use of the 24-hour mean concentration.

79. The UU includes obligations to monitor air quality, and to discuss with the Council the need for any measures to compensate for any adverse effect on vegetation within the designated sites. Because monitoring of air quality and necessary mitigation in respect of the SSSIs would be secured by the UU, the suggested condition to assess 24-hour mean NOx concentrations would not be necessary.

[13] Environment Agency H1 guidance
[14] Institute of Air Quality Management: Land-Use Planning & Development Control: Planning for Air Quality (2017)

80. The ES concluded that there would be no significant effect at ecological receptors. The Council considers that the development would be acceptable in air quality terms subject to imposition of suitable conditions to limit the air quality effects and to secure mitigation measures.

81. For the reasons given, it has been demonstrated that the development would not have an unacceptable effect on air quality and that it accords with Policies ENV7 and ENV13 of the ULP.

Carbon and Climate Change

82. There is broad agreement between the parties regarding the extremely serious risks associated with climate change. These risks are acknowledged and reflected in Government policy. Indeed, in this regard, the Framework states, amongst other things, that the environmental objective of sustainable development embraces *mitigating and adapting to climate change, including moving to a low carbon economy*. It adds that *the planning system should support the transition to a low carbon future in a changing climate* … and … *should help to shape places in ways that contribute to radical reductions in greenhouse gas emissions*.

83. Nonetheless, in spite of that general accord there remains much disagreement between the main parties to the Inquiry over how the effects of the development on climate change should be assessed, quantified, monitored and managed, including into the future.

84. The Government has recently made it clear that it will target a reduction in carbon emissions by 78% by 2035 compared to 1990 levels and that the sixth Carbon Budget, scheduled to be introduced before the end of June 2021, will directly incorporate international aviation emissions rather than by using the headroom / planning assumption approach of the previous budgets. The first of these measures will introduce a target for reducing emissions prior to the net zero target of 2050, acting as an intermediate target, and is set to be enshrined in law.

85. The latter measure will alter the way in which such emissions are accounted for. The Government intends to set the sixth Carbon Budget at the 965 MtCO2e level recommended by the CCC. As outlined above, carbon emissions from international aviation have always been accounted for in past carbon budgeting. There is no good reason to assume that the coming change in how they are accounted for will significantly alter Government policy in this regard or that the Government intends to move away from its MBU policy.

86. Indeed, the Government's press release expressly states, amongst other things, that *following the CCC's recommended budget level does not mean we are following their policy recommendations*. Moreover, it also says that *the Government will 'look to meet' this reduction through investing and capitalising on new green technologies and innovation, whilst maintaining people's freedom of choice, including on their diet. For that reason, the 6CB will be based on its own analysis, and 'does not follow each of the Climate Change Committee's specific policy recommendations.'*

87. As outlined in the *National Aviation Policy and Introductory Matters* subsection, there is in-principle Government policy support for making best use of existing runways at airports such as Stansted, and MBU thoroughly tests the potential

implications of the policy in terms of carbon emissions. International aviation carbon emissions are not currently included within UK carbon budgets, but rather are accounted for via an annual 'planning assumption' of 37.5MtCO_2. MBU policy establishes that, even in the maximum uptake scenario tested, this carbon emissions planning assumption figure would not be compromised.

88. The contents of the ES and ESA, which - unlike MBU - specifically assess the potential impacts of the appeal development, support the conclusions of MBU in this regard. Indeed, they indicate that the proposed development would take up only an extremely small proportion of the current 'planning assumption'. For instance, the ESA shows in 2050 that the additional annual carbon emissions from all flights resulting from the development are likely to be in the region of 0.09MtCO_2, which would equate to only 0.24% of the 37.5MtCO_2 planning assumption[15].

89. This assessment assumes that the airport would not seek to use its permitted total of 274,000 ATMs in the event that the appeal were to be dismissed. Yet, in practice, it seems more likely that it would, as a commercial operator, seek to maximise flights. Consequently, the relative increase in carbon emissions resulting from the development would be likely to be less than as predicted in the ESA compared to what might happen if the proposed development were not to proceed.

90. In light of the CCC's recommendations and the Government's 20 April 2021 announcement, the 37.5MtCO_2 planning assumption, as a component of the planned total 965 MtCO_2e budget, may well change. Even if it were to be reduced as low as 23MtCO_2, as is suggested might happen by the Council's carbon/climate change witness with reference to the advice of the CCC on the sixth Carbon Budget, an increase in emissions of 0.09MtCO_2 resulting from the appeal development in 2050 would be only some 0.39% of this potential, reduced figure.

91. Unsurprisingly, the carbon emission figures in the ESA vary across the years modelled to 2050 and over the three scenarios employed from 2032 ('Pessimistic', 'Central' and 'Best practice'). For instance, the predicted additional annual carbon emissions from flights increases steadily from the base-year of 2019 over the years to 2032 leading to a predicted increase of some 0.14MtCO_2 in 2032[16], which equates to 0.38% of the planning assumption. Notwithstanding these variations, in each case the annual values for all years and scenarios would, nonetheless, remain only a very small proportion of both the Government's established planning assumption and a potentially reduced assumption of 23MtCO_2.

92. Of course, these are annual emissions figures and, as such, they need to be summed in order to give the full, cumulative amount of predicted additional carbon emissions resulting from flights associated with the appeal development for any year on year period, such as the 2019 to 2050 period used in the ESA. Consequently, the cumulative additional emissions predicted in the ESA for the entire 2019-2050 period or for the 2032-2050 period are far greater than the 0.09MtCO_2 forecast for the year 2050. However, the Government's planning

[15] 0.09MtCO_2 is the difference between the 'Annual Development Case Central' and the 'Annual Do Minimal Central' scenarios of the ESA
[16] 0.14MtCO_2 is the difference between the 'Development Case Pessimistic' and the 'Do Minimum Pessimistic' scenarios of the ESA

assumption of 37.5MtCO_2 is also an annual figure, as is the figure of 23MtCO_2, such that the relative cumulative amounts of carbon emissions would remain proportionately small.

93. Notwithstanding reference to a range of planned airport development as part of the appeal process, the fact that no examples of MBU-type development having been approved since the publication of MBU were brought to the attention of the Inquiry lends further support to the conclusion that this development alone would not put the planning assumption at risk[17].

94. Although UK statutory obligations under the CCA have been amended since the publication of MBU to bring all greenhouse gas emissions to net zero by 2050, with an additional target of a 78% reduction in carbon emissions by 2035 set to be introduced, MBU remains Government policy. Given all of the foregoing and bearing in mind that there are a range of wider options that the Government might employ to meet these new obligations and that aviation is just one sector contributing to greenhouse gas emissions to be considered, there is also good reason to conclude that the proposed development would not jeopardise UK obligations to reach net zero by 2050 or to achieve the planned 2035 intermediate target. On this basis, given the very small additional emissions forecast in relative terms, there is also no reason to expect that the Council's climate emergency resolution should be significantly undermined.

95. The aviation emissions assessments of the ES and ESA are reported as CO_2 only rather than in the wider terms of carbon dioxide equivalent emissions (CO_2e), which also includes nitrous oxide (N_2O) and methane (CH_4), and which the Government has adopted for its sixth Carbon Budget. While it may have been beneficial to have used CO_2e in preference to CO_2 in the ES and ESA, this was not a matter raised by the Council during scoping, nor at any other stage prior to the exchange of evidence. The approach of the ES and ESA, in this regard, is also consistent with the DfT's 2017 Forecasts and with the MBU policy. Consequently, the approach adopted in the ES and ESA is not flawed or incorrect as such. In any event, the evidence indicates that were N_2O and CH_4 to have been included in the ES and ESA assessments, the results would not change significantly on the basis that N_2O and CH_4 account for in the region of only 0.8 to 1.0% of total international aviation CO_2e emissions.

96. In addition to carbon and carbon dioxide equivalent emissions, other non-carbon sources have the potential to effect climate change. Nonetheless, they are not yet fully understood, with significant uncertainties remaining over their effects and how they should be accounted for and mitigated. There is currently no specific Government policy regarding how they should be dealt with and uncertainty remains over what any future policy response might be. Moreover, no evidence was put to the Inquiry which clearly and reliably establishes the extent of any such effects.

97. The nature of non-carbon effects resulting from aviation has parallels with carbon effects in that they are complex and challenging, perhaps even more so than carbon effects given the associated greater uncertainties, and that they largely transcend national boundaries. Consequently, in the context of MBU development, it is reasonable to conclude that they are matters for national Government, rather than for individual local planning authorities, to address.

[17] Subject to footnote 9 above

It is also noteworthy that the current advice on this matter from the CCC to the Government appears largely unchanged compared to its previous advice.

98. In this context, therefore, the potential effects on climate change from non-carbon sources are not a reasonable basis to resist the proposed development, particularly bearing in mind the Government's established policy objective of making the best use of MBU airports. Moreover, if a precautionary approach were to be taken on this matter, it would be likely to have the effect of placing an embargo on all airport capacity-changing development, including at MBU airports, which seems far removed from the Government's intention.

99. The reason for refusal relating to carbon emissions and climate change refers only to the proposed development's effects resulting from additional emissions of international flights. Nonetheless, the evidence put forward as part of the appeal process also refers to wider potential effects on climate change, including carbon emissions from sources other than international flights.

100. Discussion and testing of the evidence during the Inquiry process revealed no good reasons to conclude that any such effects would have any significant bearing on climate change. Indeed, the Statement of Common Ground on Carbon between the appellant and Council states that *the emissions from all construction and ground operation effects (i.e. all sources of carbon other than flight emissions) are not significant.* It adds that *Stansted Airport has achieved Level 3+ (carbon neutrality) Airport Carbon Accreditation awarded by the Airport Council International*.

101. Given the conclusions outlined above regarding the potential effects of the appeal development arising from international flights, the evidence does not suggest that the combined climate change effects of the development would be contrary to planning policy on such matters, including the Framework, or that it would significantly affect the Government's statutory responsibilities in this regard. Furthermore, no breach of the development plan associated with carbon/climate change is cited in the relevant reason for refusal and none has been established as part of the appeal process.

102. Accordingly, for all of the foregoing reasons, having due regard to current national aviation policy and wider planning policy, including the development plan and the Framework, the proposed development would not have a significant or unacceptable effect on carbon/climate change.

Other Matters

103. Other topic areas considered during the Inquiry that are not expressly assessed above included Local Context, Health & Well Being, Ecology, Socio-Economic Impacts, and Surface Access (Road & Rail). Before assessing the planning balance, these are considered in turn, followed by any remaining matters raised by interested parties during both the planning application stage and the appeal process.

Local Context

104. The airport is located in a pleasant rural context. Hamlets, villages and small towns, many of which have conservation areas and listed buildings, are dispersed amongst countryside. Nonetheless, the operational development proposed in this case would all be well contained within the airport boundaries.

105. The only material effect apparent in the wider area would be from increased passenger flights over time. Other types of flight are not expected to increase to their current caps as a result, given that the overall limit on annual air transport movements would not change. The main consequences of this for local people are discussed above. Given the Panel's conclusions on these matters, it is not expected that the proposed development would alter the airport's rural context or affect nearby heritage assets in any way bearing in mind the current permitted use of the airport and its likely future use were the appeal to be dismissed.

Health & Well Being

106. The Health Impact Assessment (HIA) considers health impacts arising from noise and air quality both from airport operations and from surface access, and socio-economic factors. The ES and ESA conclude that health effects in terms of air quality would be negligible and that there would be a minor beneficial effect from a reduction in the number of people exposed to night-time air noise. The ES and ESA further conclude that the development would have a major beneficial effect on public health and wellbeing through generation of employment and training opportunities and provision for leisure travel.

107. Research underpinning the WHO ENG guidelines was considered as part of the HIA, and the ES and ESA have taken a more precautionary approach than those guidelines. Whilst criticisms are made by other parties, no alternative detailed assessment has been put forward that would cast doubt on the findings of the ES and ESA or indicate that the likely effects would differ from those assessed. The conclusions of the ES and ESA are considered reliable.

Ecology

108. Given the conclusions of the Air Quality sub-section, in light of the wider evidence, including the findings of the ES and ESA, and subject to the identified suite of mitigation to be secured via the UU and conditions, there is no good reason to believe that the appeal development would have any effects on biodiversity and ecology that would warrant the refusal of planning permission.

Socio-Economic Impacts

109. The ES and ESA demonstrate that the proposal would be of social and economic benefit by enabling increased business and leisure travel. Leisure travellers would benefit from increased accessibility to foreign destinations. Businesses would benefit through increased inward investment. The economy would benefit through increased levels of employment and expenditure. Associated with employment growth, training facilities would be supported. Representatives of business, including local and regional business organisations, transport operators, and the Stansted Airport College expressed their support for the proposal at the Inquiry. The social and economic benefits of the proposal are not disputed by the Council.

110. SSE and interested parties have questioned several of the assumptions made in the ES and ESA, including those regarding the level of job creation, the suitability of those jobs for local people and the effect of the proposal on the trade balance. The appellant has demonstrated, however, that the assumptions made in the ES and ESA are appropriate and robust. The evidence base that has been used and the modelling undertaken are also

questioned but these are sufficient to demonstrate the benefits. Furthermore, even if some of the assumptions made by SSE and interested parties proved to be correct, such as a lower level of job creation than expected, a considerable number of beneficial jobs would still be created.

111. It is likely that increased economic prosperity in the south-east and east of England would not be at the expense of growth elsewhere in the country but would rather assist the growth of the UK economy as a whole. There is no reason to believe that the development would divert investment from other parts of the country that need investment or prejudice the Government's 'levelling-up' agenda, particularly as the development seeks to meet an established need for airport expansion in the south-east of England.

Surface Access

112. As outlined above, both Highways England and Essex County Council withdrew from the appeal proceedings following the identification of a mechanism to secure the delivery of a suite of highways related mitigation. No objections have been made to the appeal scheme by Network Rail or by the rail operators that serve Stansted. Indeed, there is broad support from those quarters. There are, nonetheless, remaining concerns expressed by other parties, including SSE, regarding surface access.

113. Notwithstanding that criticism is made of the methodology, assumptions and evidence that has led the statutory highway authorities and rail operators to their respective current positions, they appear to be well founded, based on a good understanding of the operation of the airport and the surrounding surface access infrastructure, both rail and highway, including capacity and modal share. This includes in respect to dealing with two-way car trips and the likely effects of the development on the highway network through Stansted Mountfitchet and Takeley, which were the subject of considerable discussion at the Inquiry. No alternative traffic counts, surveys, modelling or comprehensive assessment of the potential effects of the development in respect to surface access have been put to the Panel.

114. The Framework states that development should only be prevented or refused on highway grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe. The evidence put to the Inquiry falls far short of demonstrating that this would be the case.

115. Subject to securing and delivering the range of proposed mitigation, which includes improvements to Junction 8 of the M11 and the Prior Wood Junction, as well as to the local road network and to public transport, the development would have no significant effects in terms of surface access. Moreover, Stansted Airport is and would continue to be well served by the strategic highway network and wide ranging public transport services, including its integrated rail, bus and coach stations.

Other Considerations

116. There was much discussion during the Inquiry and in written evidence about previous expansion at the airport and the conclusions of decision makers at that time. The last planning permission to increase the capacity of the airport was granted in 2008. Putting aside that previous applications did not involve

the form of development sought here, planning policy and other considerations have changed significantly since that time and it is not possible to draw any meaningful parallels with the consideration of this appeal.

117. Public engagement occurred in advance of the planning application, as set out in the Statement of Community Involvement (February 2018), the results of which informed the development now under consideration. Further extensive consultation took place at both the planning application and appeal stages and a significant number of responses have been received, both supporting and opposing the scheme, covering a range of topics. The Panel is satisfied that all statutory requirements have been met in these regards and that interested parties have had good opportunity to comment and engage with the planning application and appeal processes.

118. The planning application and appeal have progressed in accordance with normal process and procedure and there is no evidence before the Inquiry that suggests otherwise. It was necessary to hold the Inquiry using a virtual format in accordance with the Planning Inspectorate's Interim Operating Model and in light of restrictions in place as a result of the pandemic. This allowed the appeal to progress in an efficient and expedient way, whilst upholding the opportunity for interested parties to engage with the process. Indeed, many local people and organisations spoke at the Inquiry over several days. It would not have been appropriate to unnecessarily delay the appeal pending potential changes in Government or local policy. Appeals must be determined in accordance with the circumstances at the time of the decision.

119. The respective Secretaries of State were asked several times to recover the appeal for their own determination but declined to do so, determining that the issues involved are of no more than local significance. There is no requirement for appeals to be recovered and the Panel has properly considered the proposals on behalf of the Secretary of State, having had regard to all the evidence, including the case made by the Council and comments from local people. There is a statutory right to appeal planning decisions which is vital to the operation of the planning system and the public costs involved are not a material consideration.

120. In addition to the foregoing matters, concern has been expressed by a range of interested parties, including by Parish Councils. These cover a range of topics, including: local infrastructure, services and facilities, and their potential cost to the public sector; vibration; malodour; rat-running; public safety and risk; water resources, sewerage and flooding; wider pollution issues, including littering and from light; effects on agriculture; parking, including 'fly parking' and the cost of drop-off at the airport; demand for more housing, including affordable housing; the combined effects of planned airport development elsewhere; the 'monopoly' held by the appellant at the airport; the local economy being said to be over-reliant on the airport; current and potential future flight paths; the effects of stacking aircraft; the physical works proposed are said not to be needed to support the proposed changes to flight and passenger numbers; the existing quality of the airport, including security, management and size; a new airport should be developed in the Thames Estuary instead of the appeal scheme; damage to the highway network, including erosion, and to property; stress for residents and businesses associated with uncertainty over development and activity at the airport; and alleged aviation fuel dumping.

121. These matters are largely identified and considered within the Council officer's reports on the appeal development. They were also before the Council when it prepared its evidence and when it submitted its case at the Inquiry and are largely addressed in its evidence and in the various statements of common ground. The Council did not conclude that they would amount to reasons to justify withholding planning permission. The Panel has been provided with no substantiated evidence which would prompt us to disagree with the Council's conclusions in these respects subject to the UU and the imposition of planning conditions.

122. Some of the submissions from interested parties refer to potential interference with human rights. Given the foregoing conclusions, particularly in terms of the appeal process and the main issues, any interference with human rights that might result from the appeal being allowed would not be sufficient to give rise to a violation of rights under Article 1 of the First Protocol to the Convention, as incorporated by the Human Rights Act 1998.

123. Interested parties have also referred to a number of matters which are either not planning matters or not relevant to the appeal. These include property values, compensation claims, and the conduct and motives of the appellant and of Council members and officers. Any potential future development or further increase in capacity at the airport would require a further planning application which would be subject to the Council's consideration. The lawfulness or otherwise of past development at the airport is a matter for the Council, as local planning authority.

Planning Obligations

124. Planning obligations made under S106 of the Town and Country Planning Act 1990 as a Unilateral Undertaking, dated 26 March 2021 (the UU), were completed after the Inquiry closed in line with an agreed timetable. In the event that planning permission were to be granted and implemented it would be subject to the obligations of the UU, which would include the securing of:

- Noise Mitigation - a new enhanced sound insulation grant scheme for a defined area in the vicinity of the airport to replace existing measures. This would include a greater number of properties than the existing scheme through use of a lower noise contour;
- Transport
  - Mechanisms and funding to secure improvements to Junction 8 of the M11 and to the Priory Wood Junction, local road network improvements and monitoring, and local bus service improvements;
  - The airport operator shall join the Smarter Travel for Essex Network;
  - Expanded Sustainable Transport Levy (to replace the existing Public Transport Levy) to be used to promote the use of sustainable transport by passengers and airport staff;
  - Enhanced rail users discount scheme, with higher rate of discount and revised eligibility;
  - Revised targets for mode share (applying 'reasonable endeavours' to achieve those targets) – non-transfer passenger mode share of 50% by public transport, of 20% (by 39mppa) and 12% (by 43mppa) by 'kiss and fly', and 55% (by 39mppa) of staff access by single occupancy private car; updated working arrangements for the airport's Transport Forum,

also considered necessary in the interests of certainty to specify the plans approved and with which the development must accord.

130. A scheme of water resource efficiency measures is secured to minimise water consumption in accordance with Policy GEN2 of the ULP. It is also considered necessary to secure a surface water drainage scheme in order to avoid flooding as a result of the development.

131. A Construction Environmental Management Plan is needed to minimise the impact of the works on neighbouring occupants and to ensure that acceptable living conditions are maintained in accordance with Policy GEN4 of the ULP.

132. A Biodiversity Management Strategy is necessary in light of findings contained within the submitted ecological surveys. There is a need to conserve and enhance protected and priority species in accordance with statutory obligations and Policy GEN7 of the ULP.

133. For the same reason, the mitigation and enhancement measures and/or works identified in the Preliminary Ecological Appraisal (Feb 2018), Preliminary Ecological Appraisal Update (October 2020) and Ecology Mitigation Strategy (February 2018), are necessary. The Preliminary Ecological Appraisal Update is referenced as the most up to date appraisal, which includes measures beyond those contained in the Ecological Mitigation Strategy, in particular, provisions for the protection of ground nesting birds. A licence will also be required from Natural England, who do not object to the appeal proposal, for the translocation of protected species.

134. Condition 7 restricts noise emanating from aircraft in line with that permissible under the extant planning permission up to 35 million passengers per annum. After that, a progressive improvement in noise conditions is secured over time in line with the ES/ESA predictions to protect the living conditions of neighbouring occupants in accordance with Policy ENV11 of the ULP, and consistent with the APF's objective to share the benefit of improvements to technology with local communities.

135. There are currently no noise restrictions imposed by planning condition for night flights and Stansted, as a designated airport, is controlled by separate night flight operating restrictions imposed by the DfT. These operate on a Quota Count system over a 6.5 hour night-time period, meaning that there is a 1.5 hour period that remains uncontrolled, beyond the 16 hour daytime period imposed by condition 7. In order to ensure certainty that the noise impacts of the development will be as anticipated in the ES/ESA, and to avoid harm to the living conditions of local residents, it is considered necessary to impose a night-time restriction by condition in this case, alongside the daytime restrictions and notwithstanding some existing DfT control.

136. In order to clarify the terms of the planning permission and to ensure that the development and associated effects do not exceed those assessed, conditions are attached which restrict the total number of aircraft movements, the number of cargo air transport movements and passenger throughput during any 12 month period.

137. There is dispute between the parties regarding whether and to what extent it is necessary to control the effects of noise, air quality and carbon arising from the development.

138. Condition 7, discussed above, satisfactorily secures a betterment in noise conditions over time so as to make the development acceptable, such that there is no need or justification for imposing further measures in respect to noise.

139. The effect of the development on local air quality is expected to be very small and would not put nationally prescribed air quality standards or limits at risk in the area. Nevertheless, the appellant proposes a condition to secure an Airport Air Quality Strategy that would be updated over time in a continued effort to minimise emissions and contribute to compliance with relevant limit values or national objectives for pollutants. The provision of electric vehicle charging points can also be secured by separate condition as a measure necessary to minimise air pollution associated with the development. This is considered sufficient to make the development acceptable in planning terms, in accordance with Policy ENV13 of the ULP and the objectives of the Framework.

140. International aviation emissions are not currently directly included in UK carbon budgets and Government policy is clear that there is sufficient headroom for MBU development at all airports, including Stansted. Carbon emissions associated with the development from sources other than international aviation are expected to be relatively small and would not themselves materially impact upon carbon budgets, including the planned sixth Carbon Budget which will directly include international aviation emissions, or otherwise conflict with the objectives of the Framework. As such, a condition limiting carbon is not necessary.

141. The appeal proposal accords with current policy and guidance and there is no evidence that it would compromise the ability of future generations to meet their own needs. The conditions discussed above are sufficient to make the development acceptable in planning terms.

142. The Council proposes alternative conditions to deal with noise, air quality and carbon. Its primary case involves a condition, referred to during the Inquiry as 'condition 15', which would impose restrictions based upon the impacts assessed in the ES/ESA, along with future more stringent restrictions (using some interpolated data from the ES/ESA) and a process that would require the Council's reassessment and approval periodically as the airport grows under the planning permission, allowing for a reconsideration against new, as yet unknown, policy and guidance. In light of the Panel's conclusions on these matters, there is no policy basis for seeking to reassess noise, air quality or carbon emissions in light of any potential change of policy that might occur in the future. Furthermore, it would be likely to seriously undermine the certainty that a planning permission should provide that the development could be fully implemented. This appeal must be determined now on the basis of current circumstances and the proposed 'condition 15' is not necessary or reasonable.

143. As an alternative to 'condition 15', two other conditions (dealing with air quality and carbon) are suggested by the Council. These would also impose future restrictions defined by the Council. Again, it follows from our conclusions on the main issues that these are not necessary to make the development acceptable in planning terms, so these have not been imposed.

144. It is also unnecessary to require an assessment of impacts of the full proposed airport expansion on 24-hour mean NOx concentrations at Elsenham

Woods SSSI and Hatfield Forest SSSI given that this has not been requested by Natural England and the ES/ESA indicates that the development would not be significant in ecology terms.

145. SSE suggested a separate set of conditions, though many were broadly in line with those agreed between the Council and the appellant as considered above. No additional trigger for the commencement of development is needed as this permission must necessarily have been implemented for passenger numbers to exceed 35 million in any 12-month period. Noise restrictions beyond that imposed by condition 7 are suggested by SSE but these seek arbitrary limits with no certainty that they would be achievable. They are not necessary or reasonable in light of the Panel's findings as outlined above. Similarly, no evidence was put to the Inquiry which would justify imposing specific restrictions on helicopter movements. Publication of passenger throughput figures on the airport's website is not necessary to make the development acceptable, as conceded by SSE during the Inquiry.

146. SSE also sought a requirement for the provision of a taxi holding area close to the terminal to minimise unnecessary empty running, whereby taxis drop off at the airport but do not pick-up a return fare. A taxi company is already based at the airport and the appellant explained that it has recently provided a holding area within the mid-stay car park that might assist with such concerns. Regardless, extensive sustainable transport measures are secured by planning obligations so that a specific requirement of this type is unnecessary.

147. Additional air quality and carbon requirements to those sought by the Council were suggested by SSE but given the Panel's conclusions on these matters, these are not reasonable or necessary. Finally, SSE sought restrictions on future applications for development at the airport in terms of passenger numbers or a second runway, though recognised the difficulties of complying with the tests for conditions. Such restrictions are not relevant to the development being sought and would not be necessary or reasonable.

148. The wording of conditions has been amended as necessary to improve their precision and otherwise ensure compliance with the tests for conditions contained in the Framework. So far as the conditions require the submission of information prior to the commencement of development, the appellant has provided written confirmation that they are content with the wording and reasons for being pre-commencement requirements.

Planning Balance

149. The development plan, so far as it is relevant to this appeal, is the ULP. Although dated, it contains a number of policies[18] relevant to this proposal which are not materially inconsistent with the objectives of the Framework and continue to provide a reasonable basis upon which to determine the appeal, alongside other material considerations.

150. Policy S4 of the ULP provides for development directly related to or associated with Stansted Airport to be located within the boundaries of the airport.

151. Policy ENV11 of the ULP seeks to avoid harm to noise sensitive uses. The evidence indicates that the overall effect of the proposal on aircraft noise would

[18] Relevant ULP policies were reviewed by the Council and the appellant for the purposes of the appeal

be beneficial. Even at their peak, noise levels would not exceed that permissible under the existing planning permission. After that, it is expected that noise would reduce as a result of factors such as fleet mix and advances in technology. This improvement in noise conditions over time can be secured by condition in line with Government policy to share the benefits of airport expansion with local communities. As such, there would be no conflict with Policy ENV11 or the similar objectives of the Framework to protect living conditions.

152. Not all development can have the effect of improving air quality and by its very nature, there would inevitably be some additional air pollution from the proposed development which must weigh against the proposal. However, the ES/ESA assesses the impacts as being negligible at all human receptors and no exceedances of the air quality standards are predicted for any of the pollutants at human receptors in the study area. NOx concentrations at all ecological receptors are predicted to be below the critical level/air quality standard of 30µg/m^3 for all scenarios tested. The predicted changes in nitrogen deposition at the Hatfield Forest SSSI and NNR and Elsenham Woods SSSI remain less than 1% of the sites' lower critical loads. Ongoing monitoring of air quality within the SSSIs is provided for within the submitted Unilateral Undertaking. Overall, there would be no material change in air quality as a result of the development. As such, there would be no conflict with Policy ENV13 of the ULP, which seeks to avoid people being exposed on an extended long-term basis to poor air quality; or the similar objectives of the Framework.

153. Carbon emissions are predominantly a matter for national Government and the effects of airport expansion have been considered, tested and found to be acceptable in MBU. It is clear that UK climate change obligations would not be put at risk by the development, including in light of the Government's 20 April 2021 announcement. Carbon emissions from other sources associated with the development, such as the operation of airport infrastructure, on site ground based vehicles and from people travelling to and from the site are relatively small and would be subject to extensive sustainable transport measures secured by conditions and obligations that would minimise impacts as far as possible. Therefore, this matter weighs against the proposal only to a limited extent and could not be said to compromise the ability of future generations to meet their needs, or otherwise conflict with the objectives of the Framework taken as a whole.

154. The Highway Authorities are satisfied that the development would not unacceptably affect highway safety or capacity and the Panel agrees. All infrastructure and mitigation measures required to make the development acceptable in planning terms can be secured by conditions or planning obligations. On this basis, there would be no conflict with ULP Policies GEN1, GEN6, GEN7, ENV7, ENV11 or ENV13 so far as they require infrastructure delivery or mitigation.

155. The Council and the appellant agree that the proposed development accords with the development plan, taken as a whole. It is further agreed that the Framework's presumption in favour of sustainable development should apply as a result of the proposals' accordance with an up-to-date development plan[19].

[19] Framework paragraph 11(c)

In these circumstances the Framework states that development should be approved without delay.

156. In addition, the scheme receives very strong support from national aviation policy. Taken together, these factors weigh very strongly in favour of the grant of planning permission. Furthermore, the development would deliver significant additional employment and economic benefits, as well as some improvement in overall noise and health conditions.

157. The Council has recently withdrawn its emerging Local Plan such that it has no prospect of becoming part of the development plan and attracts no weight in the determination of this appeal. There are a number of made Neighbourhood Plans in the local area, but none contain policies that have a bearing on the outcome of the appeal.

158. Overall, the balance falls overwhelmingly in favour of the grant of planning permission. Whilst there would be a limited degree of harm arising in respect of air quality and carbon emissions, these matters are far outweighed by the benefits of the proposal and do not come close to indicating a decision other than in accordance with the development plan. No other material considerations have been identified that would materially alter this balance.

Conclusion

159. In light of the above, the appeal is allowed.

Michael Boniface	*G D Jones*	*Nick Palmer*
INSPECTOR	INSPECTOR	INSPECTOR

APPEARANCES

FOR THE LOCAL PLANNING AUTHORITY:

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Martin Berkeley	Local Resident
Suzanne Walker David Burch	Director of Policy, Essex Chamber of Commerce
Andy Walker	Director of Policy, Suffolk Chamber of Commerce CBI East
Freddie Hopkinson	Chair, Cambridge Ahead
Harriet Fear MBE	Executive Director, Visit East of England
Pete Waters	UK VP Strategy, AstraZeneca
Dr Andy Williams	UK Director, World Duty Free
Martyn Scarf	Managing Director, National Express
Chris Hardy	Director of Corporate Affairs, Greater Anglia
Jonathan Denby	Principal, Stansted Airport College
Karen Spencer MBE Robert Beer	The Easter and Rodings Action Group

SCHEDULE OF CONDITIONS FOR APPEAL REF APP/C1570/W/20/3256619:

1. The development hereby permitted shall be begun before the expiration of 5 years from the date of this decision.

2. Prior to reaching 35mppa, a scheme for the provision and implementation of water resource efficiency measures during the operational phases of the development shall be submitted to and approved in writing by the local planning authority. The scheme shall include the identification of locations for sufficient additional water meters to inform and identify specific measures in the strategy. The locations shall reflect the passenger, commercial and operational patterns of water use across the airport. The scheme shall also include a clear timetable for the implementation of the measures in relation to the operation of the development. The approved scheme shall be implemented, and the measures provided and made available for use in accordance with the approved timetable.

3. Prior to the commencement of construction works, a Construction Environmental Management Plan (CEMP) shall be submitted to and approved in writing by the local planning authority. The construction works shall subsequently be carried out strictly in accordance with the approved CEMP, unless otherwise approved in writing by the local planning authority.

   The CEMP shall incorporate the findings and recommendations of the Environmental Statement and shall incorporate the following plans and programmes:

   (a) External Communications Plan
      (i) External communications programme
      (ii) External complaints procedure

   (b) Pollution Incident Prevention and Control Plan
      (i) Identification of potential pollution source, pathway and receptors
      (ii) Control measures to prevent pollution release to water, ground and air (including details of the surface/ground water management plan)
      (iii) Control measures for encountering contaminated land
      (iv) Monitoring regime
      (v) Emergency environmental incident response plan
      (vi) Incident investigation and reporting
      (vii) Review/change management and stakeholder consultation

   (c) Site Waste Management Plan
      (i) Management of excavated materials and other waste arising
      (ii) Waste minimisation
      (iii) Material re-use

   (d) Nuisance Management Plan (Noise, Dust, Air Pollution, Lighting)
      (i) Roles and responsibilities
      (ii) Specific risk assessment – identification of sensitive receptors and predicted impacts
      (iii) Standards and codes of practice
      (iv) Specific control and mitigation measures
      (v) Monitoring regime for noise

(e) Management of Construction Vehicles
  (i) Parking of vehicles of site operatives
  (ii) Routes for construction traffic

The CEMP shall include as a minimum all measures identified as "Highly Recommended" or "Desirable" in IAQM "Guidance on the assessment of dust from demolition and construction," Version 1.1 2014 commensurate with the level of risk evaluated in accordance with the IAQM guidance, for construction activities which are within the relevant distance criteria from sensitive locations set out in Box 1 and Tables 2, 3 and 4 of the IAQM guidance.

The CEMP shall provide for all heavy goods vehicles used in the construction programme to be compliant with EURO VI emissions standards, and for all Non Road Mobile Machinery to be compliant with Stage V emissions controls as specified in EU Regulation 2016/1628, where such heavy goods vehicles and Non Road Mobile Machinery are reasonably available. Where such vehicles or machinery are not available, the highest available standard of alternative vehicles and machinery shall be used.

4. Prior to commencement of the development, a detailed surface water drainage scheme for the airfield works hereby approved based on the calculated required attenuation volume of 256m^3, shall be submitted to and approved in writing by the local planning authority. The approved scheme shall be fully implemented before any of the aircraft stands and taxiway links hereby approved are brought into use. The scheme shall be implemented in accordance with the approved details as part of the development, and shall include but not be limited to:
   - Detailed engineering drawings of the new or altered components of the drainage scheme;
   - A final drainage plan, which details exceedance and conveyance routes, and the location and sizing of any drainage features; and
   - A written report summarising the scheme as built and highlighting any minor changes to the approved strategy.

5. A Biodiversity Management Strategy (BMS) in respect of the translocation site at Monks Farm shall be submitted to, and approved in writing by, the local planning authority prior to the commencement of construction works. The BMS shall include:

   - Description and evaluation of features to be managed;
   - Ecological trends and constraints on site that might influence management;
   - Aims and objectives of management;
   - Appropriate management options for achieving aims and objectives;
   - Prescriptions for management actions;
   - Preparation of a work schedule (including an annual work plan capable of being rolled forward over a five year period);
   - Details of the body or organisation responsible for implementation of the Strategy; and
   - Ongoing monitoring and remedial measures.

   The Strategy shall also set out (where the results from monitoring show that conservation aims and objectives of the BMS are not being met) how

contingencies and/or remedial action shall be identified, approved by the local planning authority and implemented so that the development still delivers the fully functioning biodiversity objectives of the originally approved scheme. The BMS shall be implemented in accordance with the approved details.

6. All ecological mitigation and enhancement measures and/or works shall be carried out in accordance with the details contained in the Stansted – Ecology Mitigation Strategy (RPS, February 2018) forming part of Appendix 16.1 and 16.2 of the Environmental Statement and in the Conclusions and Recommendations of the Preliminary Ecological Appraisal Update (RPS, 5 October 2020), Appendix 16.A of the Environmental Statement Addendum.

7. The area enclosed by the 57dB(a) Leq, 16h (0700-2300) contour shall not exceed 33.9 sq km for daytime noise.

   By the end of the first calendar year that annual passenger throughput exceeds 35million, the area enclosed by the following contours shall not exceed the limits in Table 1:

Table 1

54 dB $L_{Aeq, 16hr}$	57.4 km^2
48 dB $L_{Aeq, 8hr}$	74.0 km^2

   By the end of 2032 or by the end of the first calendar year that annual passenger throughput reaches 43million (whichever is sooner), Stansted Airport Limited, or any successor or airport operator, shall reduce the areas enclosed by the noise contours as set out in Table 2. Thereafter the areas enclosed by the contours as set out in Table 2, shall not be exceeded.

Table 2

54 dB $L_{Aeq, 16hr}$	51.9 km^2
48 dB $L_{Aeq, 8hr}$	73.6 km^2

   For the purposes of this condition, the noise contour shall be calculated by the Civil Aviation Authority's Environmental Research and Consultancy Department (ERCD) Aircraft Noise Contour model (current version 2.4), (or as may be updated or amended) or, following approval by the local planning authority, any other noise calculation tool such as the Federal Aviation Administration Aviation Environmental Design Tool (current version 3.0c) providing that the calculations comply with European Civil Aviation Conference Doc 29 4th Edition (or as may be updated or amended) and that the modelling is undertaken in line with the requirements of CAA publication CAP2091 (CAA Policy on Minimum Standards for Noise Modelling). All noise contours shall be produced using the standardised average mode.

   To allow for the monitoring of aircraft noise, the airport operator shall make noise contour mapping available to the local planning authority annually as part of demonstrating compliance with this condition. Contours should be provided in 3dB increments from 51 dB $L_{Aeq,16hr}$ and 45 dB $L_{Aeq, 8hr}$.

8. The passenger throughput at Stansted Airport shall not exceed 43 million passengers in any 12 calendar month period. From the date of this permission, the airport operator shall report the monthly and moving annual total numbers of passengers in writing to the local planning authority no later than 28 days after the end of the calendar month to which the data relate.

9. There shall be a limit on the number of occasions on which aircraft may take-off or land at the site of 274,000 Aircraft Movements during any 12 calendar month period, of which no more than 16,000 shall be Cargo Air Transport Movements (CATMs). From the date of the granting of planning permission, the developer shall report the monthly and moving annual total numbers of Aircraft Movements, Passenger Air Transport Movements and CATMs in writing to the local planning authority no later than 28 days after the end of the calendar month to which the data relate.

   The limit shall not apply to aircraft taking off or landing in any of the following circumstances:

   a) The aircraft is required to land at the airport because of an emergency, a divert or any other circumstance beyond the control of the operator and commander of the aircraft; or

   b) The aircraft is engaged on the Head of State's flight, or on a flight operated primarily for the purposes of the transport of Government Ministers or visiting Heads of State or dignitaries from abroad.

10. Prior to the airport first handling 35mppa, an Airport Air Quality Strategy (AAQS) shall be submitted to and approved in writing by the local planning authority. The AAQS shall set out how the airport operator shall take proportionate action to contribute to compliance with relevant limit values or national objectives for pollutants through:

    a) Measures to minimise emissions to air from its own operational sources;

    b) Measures to influence actions to be undertaken to improve air quality from third party operational sources; and

    c) Measures that reduce emissions through the Airport Surface Access Strategy (ASAS), the Sustainable Transport Levy and the Local Bus Network Development Fund.

    Thereafter, the AAQS shall be reviewed at the same time as the ASAS reviews (at least every 5 years or when a new or revised air quality standard is placed into legislation) and submitted to and be approved in writing by the local planning authority. At all times the AAQS shall be implemented as approved, unless otherwise approved in writing by the local planning authority.

11. Within 6 months of the date of this planning permission a scheme for the installation of rapid electric vehicle charging points at the airport shall be submitted to and approved in writing by the local planning authority. The scheme shall indicate the number and locations of the charging points and timetable for their installation. The approved scheme shall be fully implemented in accordance with the approved timetable and retained thereafter.

12. The development hereby permitted shall be carried out in accordance with the following approved plans: Location Plan: NK017817 – SK309; Site Plan: 001-001 Rev 01; Mike Romeo RET: 001-002 Rev 01; Yankee Remote Stands: 001-003 Rev 01; Runway Tango: 001-004 Rev 01 and Echo Stands: 001-005 Rev 01.


BOEING
WORLD AIR CARGO
FORECAST 2020–2039

TABLE OF CONTENTS

The Boeing Company issues the biennial World Air Cargo Forecast (WACF) to provide a comprehensive, up-to-date overview of the air cargo industry. The forecast summarizes the world's major air trade markets, identifies major trends, and presents forecasts for the future performance and development of markets, as well as for the world freighter airplane fleet.

This document would not be possible without the efforts of several contributors. The Boeing World Air Cargo Forecast 2020 production team included the Boeing Content Studio and our colleagues in the Market Analysis Group. We extend special thanks to Divya Gupta, who managed all aspects of the WACF update. We also give special thanks to Adin Herzog, who, along with Wendy Moore, Kitt Forsyth-Burton, Aaron Tayler and Sarah Nizolek, thoroughly updated our Airline Cargo Traffic Database (ACTD), which includes historical traffic data for nearly 850 airlines. Thank you also to Wendy Moore, who researched and modeled the air freight yield curves in the Air Cargo Industry Overview; Kimberly Tornabene, who analyzed and compiled historical airline cargo revenues; Katrina Krebs, who developed the North America chapter; Jacqueline Kaye, who authored the Latin America and Europe chapter; Staci Strickland, who authored the Domestic China and Latin America and North America chapters; Allison Corrigan, who authored the South Asia chapter; Amine Benkirane, who authored the Middle East chapter; Carl Allen, who authored the East Asia and North America chapter; Don Lim, who authored the Europe and East Asia chapter; Jayden Lee, who developed the insights and analysis behind the Intra–East Asia and Oceania chapter; and David Franson, who led our freighter fleet forecast effort. Lastly, we would like to acknowledge the professional work accomplished by our summer interns, Kaitlyn Elgart and Portia Uwase Zuba, who assisted in the research and authoring of the Intra–Europe and Europe and North America chapters, respectively.

The next update to the WACF will appear in fourth quarter 2022. The authors welcome any questions or comments. All queries and suggestions should be directed to the following:

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EXECUTIVE SUMMARY

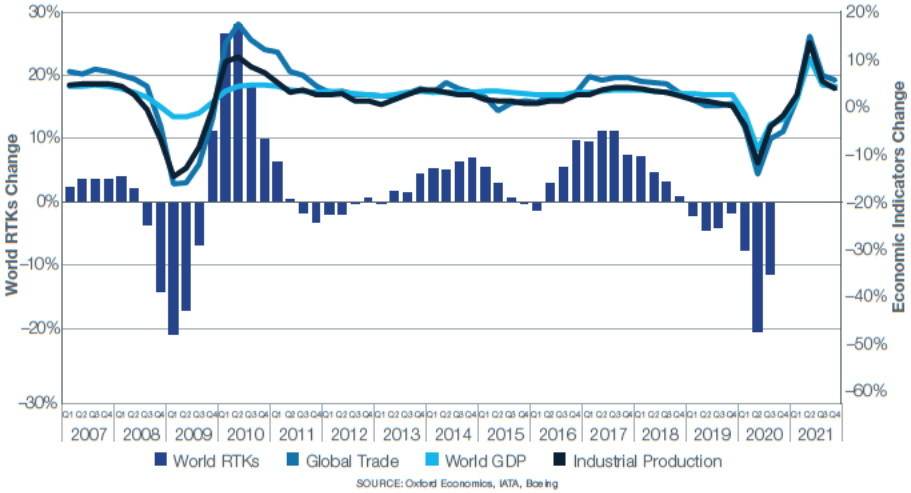
Air cargo markets disrupted in 2020 by COVID-19 pandemic

As the new decade began, the air cargo market was poised to benefit from improvement in the world economy.

This followed a weak 2019, in which the effects of tariffs, tepid world economic growth and weakened industrial production resulted in air cargo traffic decreasing by 3%.

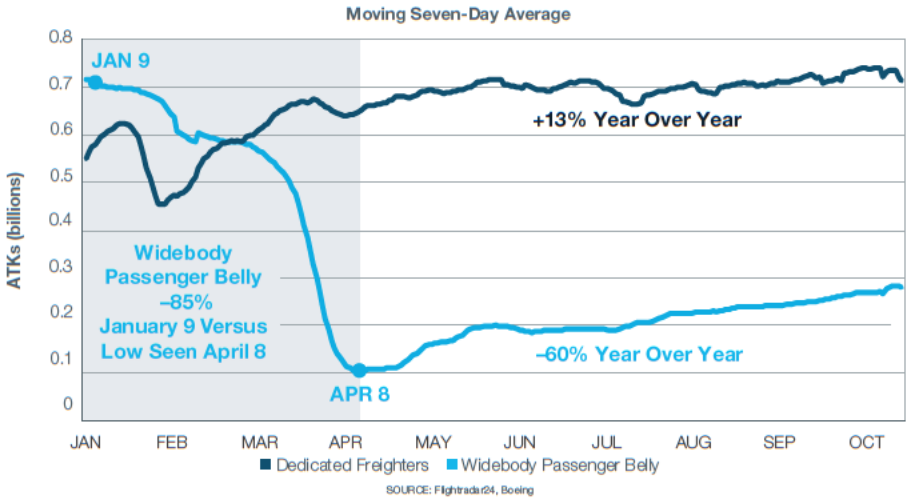
As COVID-19 quickly spread to all corners of the world early this year, the impact from the loss of long-haul passenger belly capacity from widebody fleets created a significant air cargo capacity shortfall. Passenger belly cargo capacity typically accounts for 54% of the world air cargo capacity. Freighter operators have responded by operating above normal utilization levels to fill the lower cargo hold shortfall.

Anticipated Economic Recovery Expected to Bolster Air Cargo Traffic Growth



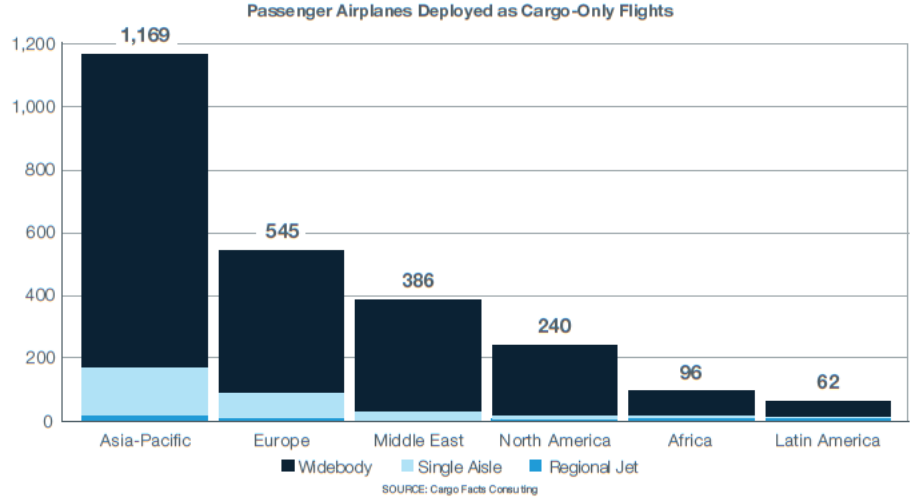
SOURCE: Oxford Economics, IATA, Boeing

Major Reduction of Passenger Service Is Creating High Demand for Freighter Capacity



SOURCE: Flightradar24, Boeing

Widebodies Account for Nearly 90% of Passenger Airplanes Used for Cargo-Only Flights



SOURCE: Cargo Facts Consulting

In addition, the urgent need to meet demands for transporting medical supplies to all regions in response to COVID-19 created a unique and unprecedented environment. The decline in air cargo capacity plus urgent demand for medical supplies led to a spike in yields to high double-digit levels in second quarter 2020. With these market conditions, freighter operators have been in a unique position to meet market demands that require a high level of speed, reliability and security, as only air cargo can do.

With high air cargo yields and greatly reduced long-haul international networks, conditions have been favorable for many airlines to use some of their passenger widebody fleets for cargo-only operations to generate much-needed cash flow. These "preighters" have taken up some of the capacity shortfall and, even in some cases, have generated quarterly profits for carriers despite minimal passenger operations. As of the end of September, nearly 200 airlines have operated 2,500 passenger airplanes exclusively for cargo operations.

Through September, air cargo traffic was down 12%, rivaling declines in past recessions. In a normal year, this would translate to poor financial performance for air cargo operators. However, in 2020 almost a quarter of air cargo capacity has been lost. As a result of the constrained air cargo capacity, yields were up over 40% and overall air cargo industry revenues were up 16%.

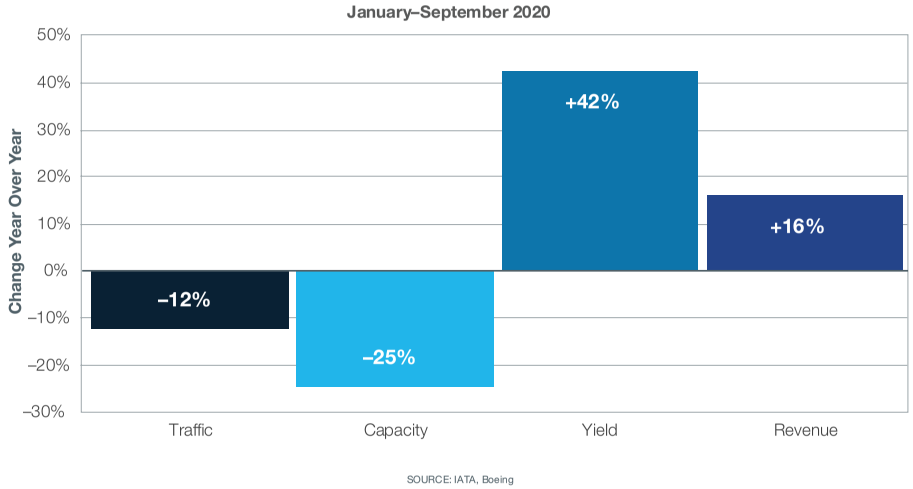
The 2020 World Air Cargo Forecast incorporates the near-term disruption to air cargo markets but does not assume the current dynamics of constrained widebody passenger belly capacity will continue into the long term. Long-haul widebody passenger traffic will return in the coming years, and air cargo will then reflect market dynamics much closer to what we have seen in the years prior to the COVID-19 disruption.

COVID-19 pandemic accelerating express and e-commerce market

In contrast to disrupted passenger markets, the higher-than-market-average growth seen in express markets over the last decade has increased during the COVID-19 pandemic. E-commerce, which was already growing at double-digit rates prior to the pandemic, has accelerated its impact on the air cargo market. Express carriers have fared well as a result of the market turmoil in 2020. Through the end of September, they had increased their traffic by 14%. All-cargo carriers, at 6%, are the only other air cargo business model to show growth. This forecast incorporates this continued structural growth and surge in demand that we have observed because of COVID-19.

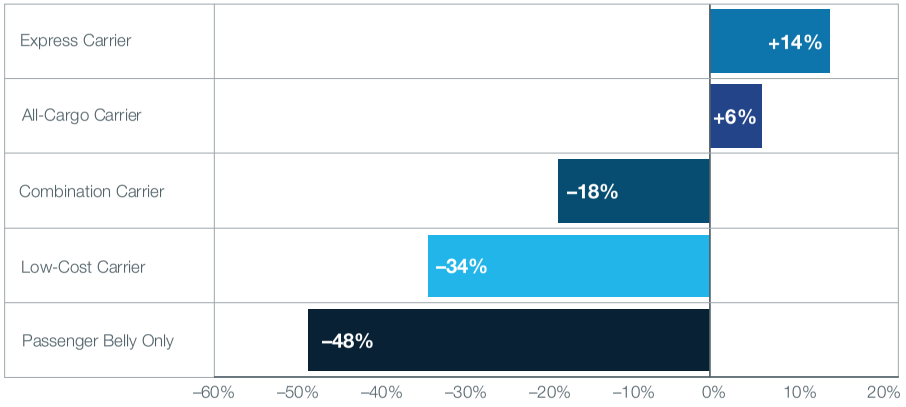
Another consideration of structural shifts affecting air cargo growth, and a topic of intense debate in recent years, is the trajectory

Constrained Cargo Capacity Is Driving Higher Yields and Revenue



SOURCE: IATA, Boeing

Dedicated Cargo Carriers Lead in Challenging Market Conditions



SOURCE: IATA, Boeing

of globalization on global supply chains. Geopolitical tensions and trade disputes have percolated and increased in many major economies around the world. Air cargo is highly sensitive to global industrial production output and worldwide manufacturing supply chains.

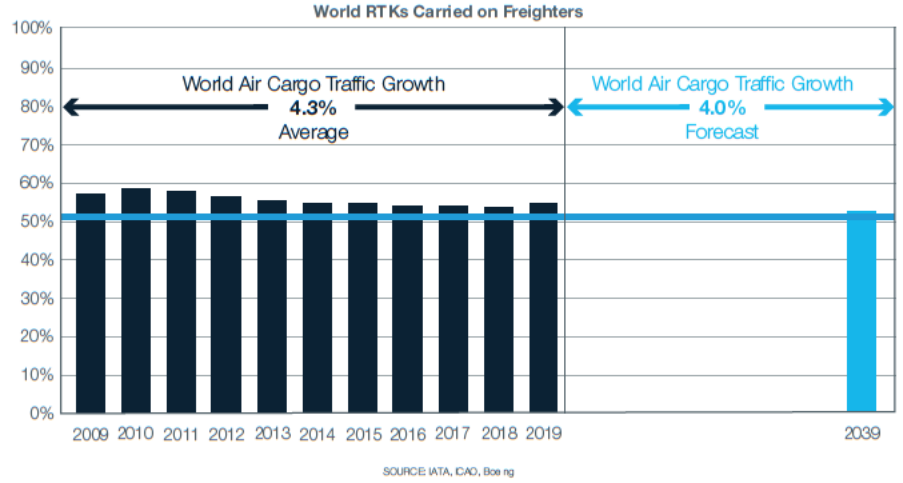
However, even prior to the COVID-19 pandemic, some shifting of supply chains was already occurring. China, the location of choice for many Western manufacturing companies during the past 20 years, had slowly lost its low-labor-cost advantage relative to other developing countries. As a consequence, some manufacturing has moved away from China to other Asia-Pacific countries in the past few years. However, the movement of supply chains, depending on the complexity of the product, can take years to implement. The magnitude of air cargo imports from China to the United States, for example, is nine times that of the next Asia-Pacific country. This further highlights the current dominance of China as a manufacturing source and supplier. Early indications show trends toward diversification of supply chains, rather than onshoring, to lessen risk.

Developments in other modes of freight transport may affect air cargo industry growth. The maritime industry, which transports almost 90% of world merchandise trade, has experienced significant market disruption over the past decade. Several years of overcapacity and weakening trade led to collapsing yields. Ultra-large containerships (those vessels with more than 15,000 20-foot equivalent units of capacity) introduced by the major shipping operators contributed to the overcapacity as trade slowed. In the past five years, the industry has seen consolidation of players, reduced capacity growth and firming yields. While normally the maritime sector is not a competitor to air cargo, the changing nature of container shipping may benefit the air cargo sector. Containership operator capacity discipline, plus manufacturers seeking to de-risk their supply base and disperse manufacturing sites into lower-cost Asia-Pacific regions, may lead to the increased use of air cargo.

Importance of main deck freighters

In addition to the long-term trend of dedicated freighters carrying more than 50% of global air cargo traffic despite growing widebody passenger fleets, the COVID-19 pandemic has highlighted the importance of main-deck freighters in our global air transportation system. While increasingly capable passenger widebody airplanes have helped the air cargo industry grow during the past decade, dedicated freighters are anticipated to continue to comprise at least 50% of the world air cargo traffic carried. There are several key reasons for freighter preference in air cargo flows: 1) Most passenger belly capacity does not serve key cargo trade routes; 2) twin-aisle passenger schedules often do not meet shipper timing needs; 3) freight forwarders prefer palletized capacity, which is not available on single-aisle aircraft; 4) passenger bellies cannot serve hazardous materials and project cargo, a key sector in air cargo flows; and 5) payload-range considerations on passenger airplanes may limit cargo carriage, which decreases the likelihood that cargo will arrive at its destination on time.

Freighters Will Continue to Carry Over 50% of World Air Cargo Traffic



SOURCE: IATA, ICAO, Boeing

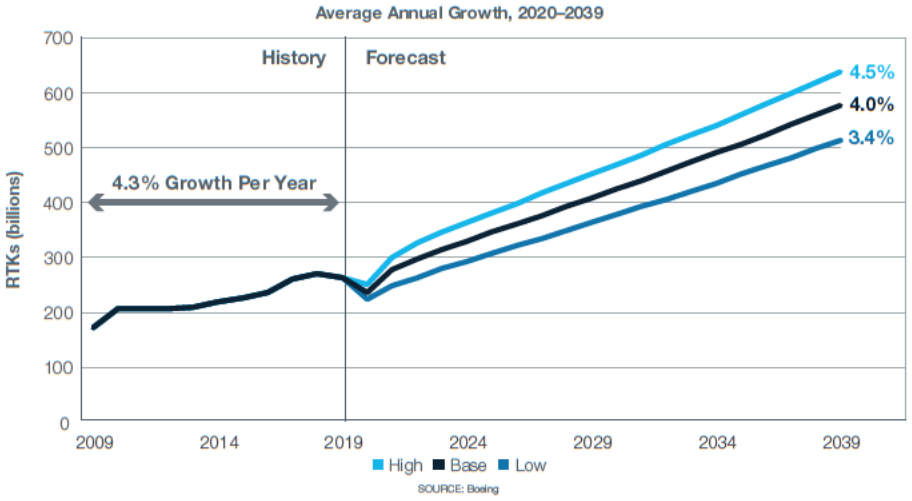
World air cargo traffic growth outlook

World air cargo traffic is forecast to grow at 4.0% per year over the next 20 years.

In terms of revenue tonne-kilometer (RTK) growth, air freight, including express traffic, is projected to grow at 4.1% while airmail will grow at a slower pace, averaging 1.7% annual growth through 2039. Overall, world air cargo traffic will more than double over the next 20 years, expanding from 264 billion RTKs in 2019 to 578 billion RTKs in 2039.

The Asia-Pacific region will continue to lead the world in average annual air cargo growth, with domestic China and intra–East Asia and Oceania markets expanding 5.8% and 4.9% per year, respectively. Supported by faster-growing economies and growing middle classes, the East Asia–North America and Europe–East Asia markets will grow slightly faster than the world average growth rate. In the more established and mature trade flow between North America and Europe, growth will be below the world average growth rate.

World Air Cargo Traffic Will Grow 4.0% Per Year Over the Next 20 Years



Air Cargo Growth Rates Vary by Region

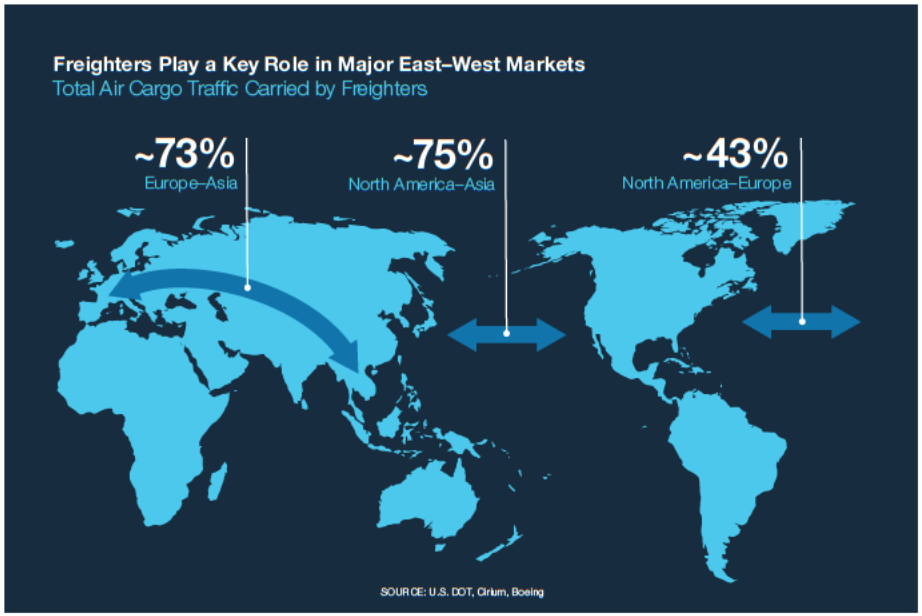
Region	History 2009–2019	2019	Forecast 2020–2039
World	4.3%	–3.0%	4.0%
East Asia–North America	3.1%	–7.5%	4.3%
Europe–East Asia	4.2%	–3.2%	4.4%
Intra–East Asia and Oceania	5.2%	–5.4%	4.9%
Europe–North America	3.4%	–4.7%	2.3%
North America	3.3%	3.2%	2.6%
Domestic China	4.9%	3.5%	5.8%
Latin America–Europe	3.9%	–1.2%	4.1%
Latin America–North America	2.1%	–3.6%	2.6%
Africa–Europe	2.8%	4.0%	3.3%
South Asia–Europe	4.1%	3.7%	4.3%
Middle East–Europe	4.8%	10.6%	2.4%
Intra-Europe	4.8%	6.0%	2.3%

SOURCE: IATA, ICAO, ACI, AAPA, U.S. DOT, U.S. DOC, Eurostat, IHS Markit GTA, CAAC, AAI, DGCA, FAVT, Annual Reports, Airport Statistics, Boeing

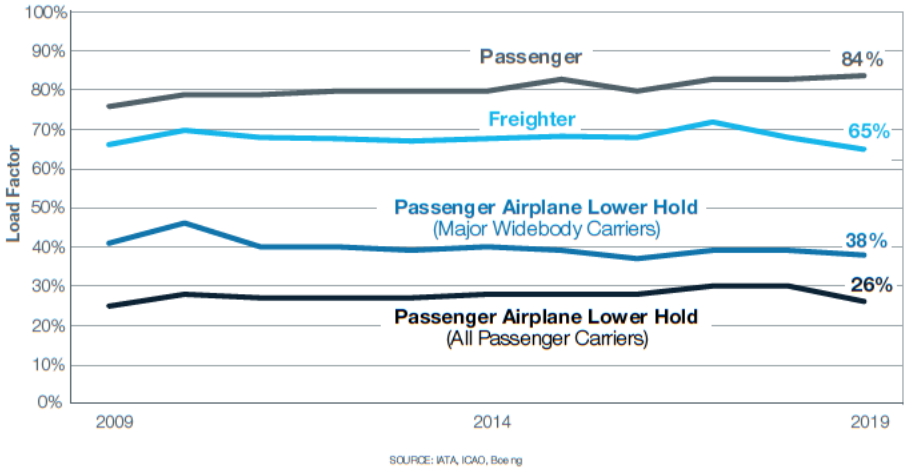
Freighters and passenger lower-hold dynamics

There are two options for air cargo transport — dedicated freighters and passenger aircraft lower holds (also referred to as passenger belly capacity) — and each offers unique advantages. Freighters are particularly well suited for transporting high-value goods because they provide highly controlled transport, direct routing, reliability and unique capacity considerations (volume, weight, hazardous materials and dimensions). These distinct advantages allow freighter operators to offer a higher value of service and generate nearly 90% of the total air cargo industry revenue. With the introduction of a new generation of widebody passenger airplanes with larger lower-hold capacity, more airlines are combining cargo transport with passenger operation to capitalize on additional revenue opportunities. Belly cargo space offers unique value on non-cargo routes by feeding dedicated freighter networks and providing new business opportunities for integrators. However, while lower-hold capacity in widebody airplanes serving long-haul missions has increased in recent years, several parameters can limit the cargo operations in passenger aircraft. The reduced height of the lower deck can limit volumes. Different security standards and regulations may restrict commodities that can be shipped in passenger airplane lower holds. From a network standpoint, freighter routes are highly concentrated on relatively few trade lanes, especially in the world's two largest trade routes, East Asia–North America and Europe–East Asia.

In contrast, passenger networks are much broader and often include destinations where cargo demand is minimal. This difference in passenger and cargo traffic distribution explains the considerable load factor difference in belly space and freighters, which average approximately 30% and 75%, respectively over the last decade. In addition, range restrictions on fully loaded passenger aircraft and limited passenger service to major cargo airports make freighter operations essential. For these structural reasons, freighters are forecast to carry more than half of the world's air cargo for the next 20 years.



Freighter Cargo Load Factors Double That of Passenger Lower Holds



SOURCE: IATA, ICAO, Boeing

	offsetting, are exempted from the offsetting requirements of the CORSIA, while retaining simplified reporting requirements. The requirement to monitor, report and verify CO_2 emissions from international aviation is thus independent from the offsetting requirement. The data reported by States will be used for the calculation of the CORSIA baseline (see question 2.17 for more details on CORSIA's baseline) as well as for the calculation of the aeroplane operators' offsetting requirements, where applicable.
2.11	Can an aeroplane operator have offsetting requirements, even if its State of registration does not participate in CORSIA offsetting?
	Yes. Because of the CORSIA's route-based approach, an operator operating on routes between participating States would be subject to the offsetting requirements under the CORSIA, no matter whether its State of registration participates in CORSIA offsetting or not.
2.12	What would happen to the CORSIA emissions coverage if an operator of a non-participating State flies on the routes between participating States (e.g. fifth-freedom traffic right)?
	Because of the CORSIA's route-based approach, these routes between participating States would be subject to the coverage of emissions offsetting requirements under the CORSIA. Thus, an operator of a non-participating State would be subject to offsetting requirements if it had a flight between two participating States, and emissions from such flights would be added to the coverage of CORSIA's offsetting requirements.
2.13	What would happen to the CORSIA emissions coverage if a State without an operator undertaking international flights decides to participate in the CORSIA offsetting?
	States without an operator flying international flights are encouraged to participate in all phases of the CORSIA. If such a State decides to participate, international flights to and from that State to other participating States are additionally included for the CORSIA's offsetting requirements, due to the route-based approach. The total international emissions covered by CORSIA offsetting would ultimately increase.
	Key design element 3: CORSIA offsetting requirements and eligible emissions units
2.14	What is offsetting and how does it work, in general?
	In general, offsetting is done through the purchase and cancellation of emissions units (see question 4.20), arising from different sources of emissions reductions achieved through mechanisms, programmes or projects. The buying and selling of eligible emissions units happens through the carbon market. The price of the emissions units in the carbon market is influenced by the law of supply (availability of emissions units) and demand (level of offsetting requirements). "Cancelling" means the permanent removal and single use of an emissions unit so that the same emissions unit cannot be used more than once. This is done after an aeroplane operator has purchased emissions units from the carbon market. For CORSIA, an aeroplane operator is required to meet its offsetting requirements by cancelling CORSIA Eligible Emissions Units in a quantity equal to its total final offsetting requirements for a given compliance period. CORSIA Eligible Emissions Units are to be determined by the ICAO Council, and up-to-date information on eligible units is made available on the ICAO CORSIA website (see question 4.21).
2.15	How are an aeroplane operator's offsetting requirements calculated?
	Paragraph 11 of the Assembly Resolution A40-19 addresses the distribution of the total amount of CO_2 emissions to be offset in a given year among individual aeroplane operators. This is accomplished by introducing a dynamic approach for the distribution

Unemployment in Kent

Last updated: 15 June 2021

Related Documents

Welfare Reform Report

Ward unemployment interactive model

Unemployment Measures Bulletin

Universal Credit Claimants

COVID-19 continues to have a significant impact on the number of claimants of unemployment benefits.

The claimant rate in Kent is currently 5.6%, below the national average rate of 6.0%. Unemployment in Kent fell by 5.1% over the previous month, whereas nationally it increased by 3%.

Youth unemployment (18-24) in Kent is slightly higher than the national average: 8.7% in Kent, 8.2% UK, however Kent saw a reduction (-5.8%) while nationally youth unemployment increased (+1.5%).

Unemployment has fallen for both males and females over last month: -4.9% for males in Kent compared to -5.4% for females.

The latest data for May 2021 was released on the 15th June 2021 and is presented below.

Further Information

This workbook looks at the number of people claiming either Jobseekers Allowance or Universal Credit principally for the reason of being unemployed. It also looks at the age and sex of claimants, in particular at youth unemployment which is defined as those aged 18 to 24.

This workbook uses information from a dataset called The Claimant Count by Sex and Age. This experimental series counts the number of people claiming Jobseeker's Allowance plus those who claim Universal Credit who are out of work.

Under Universal Credit a broader span of claimants are required to look for work than under Jobseeker's Allowance. As Universal Credit Full Service is rolled out in particular areas, the number of people recorded as being on the Claimant Count is therefore likely to rise.

Unemployment rates are calculated using the Office for National Statistics Mid-year Population Estimates 2001-2019. The resident working age population is defined as all males and females aged 16-64. These denominators will be updated annually with the ONS mid-year population estimates.

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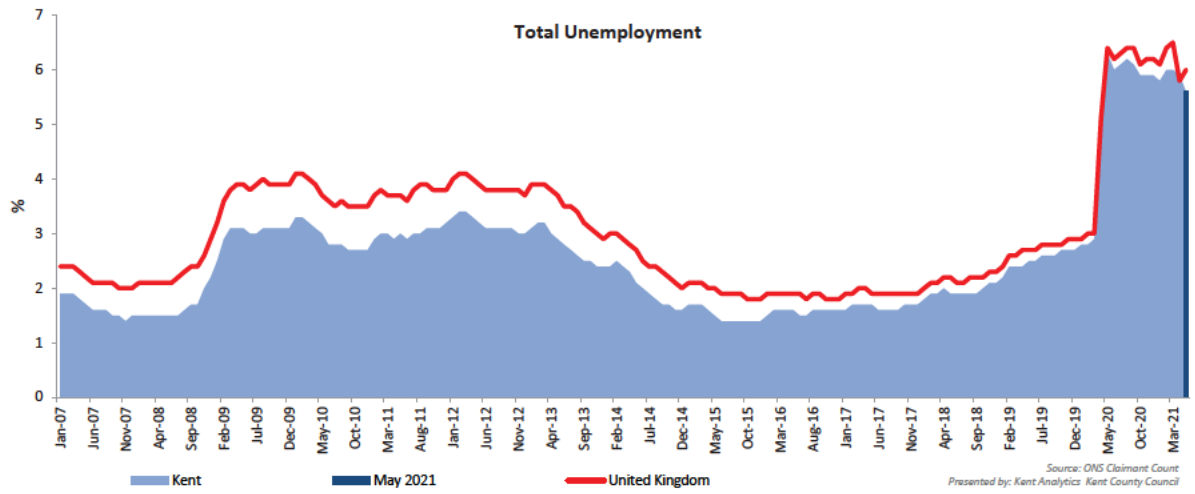


May 2021	Number	% rate	Number change since April 2021	% change since April 2021	Number change since May 2020	% change since May 2020
Kent	52,985	5.6%	-2,860	-5.1%	-7,060	-11.8%
United Kingdom	2,503,160	6.0%	+73,635	+3.0%	-158,180	-5.9%

District unemployment

May 2021	Number	% rate	Number change since April 2021	% change since April 2021	Number change since May 2020	% change since May 2020
Ashford	4,250	5.5%	-200	-4.5%	-695	-14.1%
Canterbury	4,815	4.6%	-220	-4.4%	-660	-12.1%
Dartford	3,725	5.2%	-265	-6.6%	-445	-10.7%
Dover	4,150	6.0%	-250	-5.7%	-695	-14.3%
Folkestone & Hythe	4,440	6.7%	-220	-4.7%	-455	-9.3%
Gravesham	4,635	7.1%	-260	-5.3%	-280	-5.7%
Maidstone	5,100	4.9%	-290	-5.4%	-645	-11.2%
Sevenoaks	2,655	3.8%	-250	-8.6%	-370	-12.2%
Swale	5,625	6.2%	-240	-4.1%	-745	-11.7%
Thanet	7,615	9.4%	-220	-2.8%	-1,180	-13.4%
Tonbridge and Malling	3,090	3.9%	-195	-5.9%	-470	-13.2%
Tunbridge Wells	2,875	4.0%	-250	-8.0%	-440	-13.3%
Kent	52,985	5.6%	-2,860	-5.1%	-7,060	-11.8%
Medway	11,590	6.6%	-440	-3.7%	-735	-6.0%

Kent unemployment headlines May 2021

The unemployment rate in Kent is 5.6%. This is below the rate for United Kingdom (6%).

52,985 people were claiming unemployment benefits in Kent.This has fallen since last month

Thanet has the highest unemployment rate at 9.4%. Sevenoaks has the lowest unemployment rate at 3.8%.

The 18-24 year old unemployment rate in Kent is 8.7%. They account for 19.9% of all unemployed people in the area

Thanet has the highest 18-24 year old unemployment rate in the South East at 14.9%.

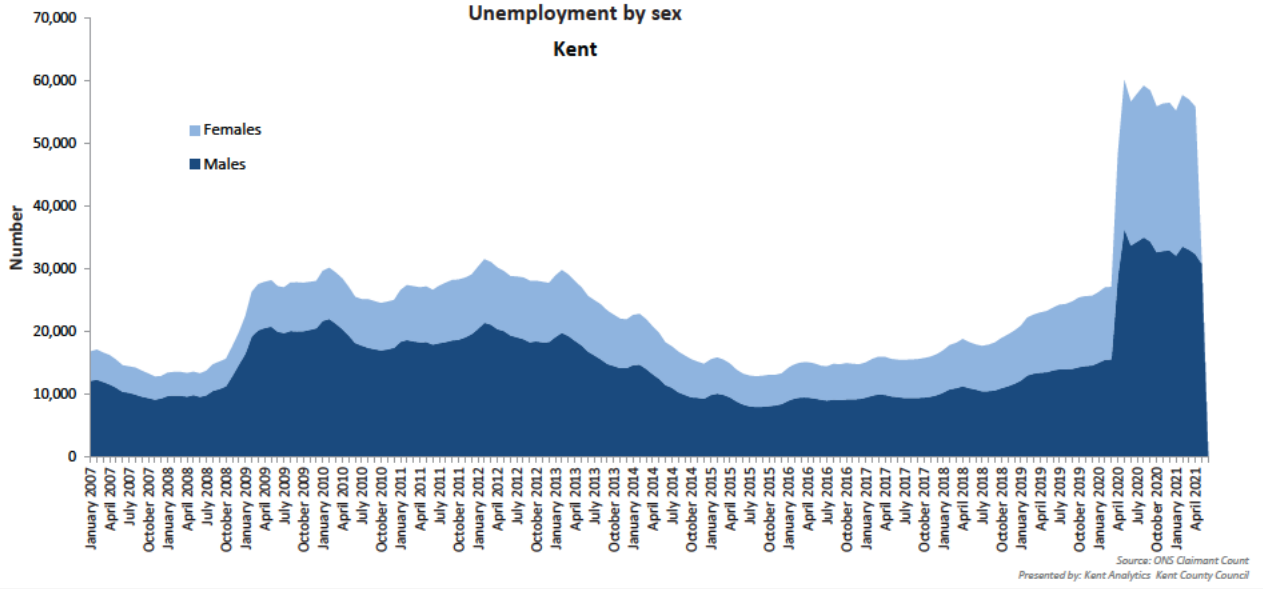
Unemployment by sex

Kent

May 2021	Number	% rate	Number change since April 2021	% change since April 2021	Number change since May 2020	% change since May 2020
Males	30,765	6.5%	-1,585	-4.9%	-5,600	-15.4%
Females	22,220	4.6%	-1,275	-5.4%	-1,460	-6.2%
Total	52,985	5.6%	-2,860	-5.1%	-7,060	-11.8%

District unemployment by sex

May 2021	Male claimants	Males claimant rate	Female claimants	Female claimant rate
Ashford	2,415	6.4%	1,835	4.6%
Canterbury	2,865	5.4%	1,950	3.7%
Dartford	2,065	5.8%	1,665	4.6%
Dover	2,425	7.0%	1,725	4.9%
Folkestone & Hythe	2,680	8.1%	1,760	5.4%
Gravesham	2,640	8.1%	1,995	6.1%
Maidstone	2,930	5.6%	2,170	4.1%
Sevenoaks	1,485	4.3%	1,170	3.3%
Swale	3,260	7.2%	2,365	5.2%
Thanet	4,605	11.6%	3,010	7.2%
Tonbridge & Malling	1,740	4.4%	1,345	3.3%
Tunbridge Wells	1,655	4.6%	1,220	3.4%
Kent	30,765	6.5%	22,220	4.6%
Medway	6,775	7.7%	4,815	5.5%

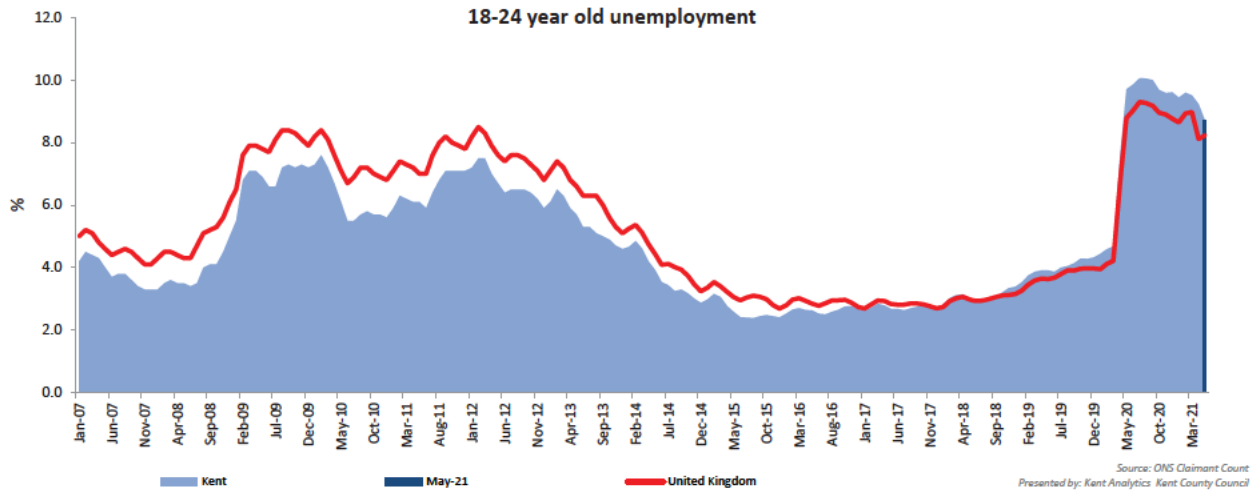


Unemployment by age group in Kent

May 2021	Number	% rate	Number change since April 2021	% change since April 2021	Number change since May 2020	% change since May 2020
18-24	10,560	8.7%	-645	-5.8%	-1,220	-10.4%
25-49	29,260	6.0%	-1,485	-4.8%	-4,310	-12.8%
50-64	13,080	4.2%	-720	-5.2%	-1,460	-10.0%

District unemployment by age group

May 2021	18-24 claimants	25-49 claimants	50-64 claimants	18-24 claimant rate	25-49 claimant rate	50-64 claimant rate
Ashford	890	2,290	1,065	10.1%	5.7%	4.1%
Canterbury	1,055	2,605	1,150	4.1%	5.6%	4.0%
Dartford	660	2,280	775	8.7%	5.5%	3.9%
Dover	830	2,215	1,095	10.3%	6.6%	4.2%
Folkestone & Hythe	835	2,340	1,260	11.4%	7.3%	5.2%
Gravesham	945	2,595	1,090	12.4%	7.4%	5.3%
Maidstone	950	2,970	1,175	8.1%	5.4%	3.5%
Sevenoaks	510	1,450	690	7.1%	4.1%	2.8%
Swale	1,250	2,985	1,375	11.0%	6.5%	4.6%
Thanet	1,485	4,215	1,905	14.9%	10.6%	6.7%
Tonbridge and Malling	635	1,680	770	7.1%	4.1%	2.9%
Tunbridge Wells	510	1,630	730	7.2%	4.3%	3.0%
Kent	10,560	29,260	13,080	8.7%	6.0%	4.2%
Medway	2,480	6,595	2,505	11.0%	7.0%	4.8%

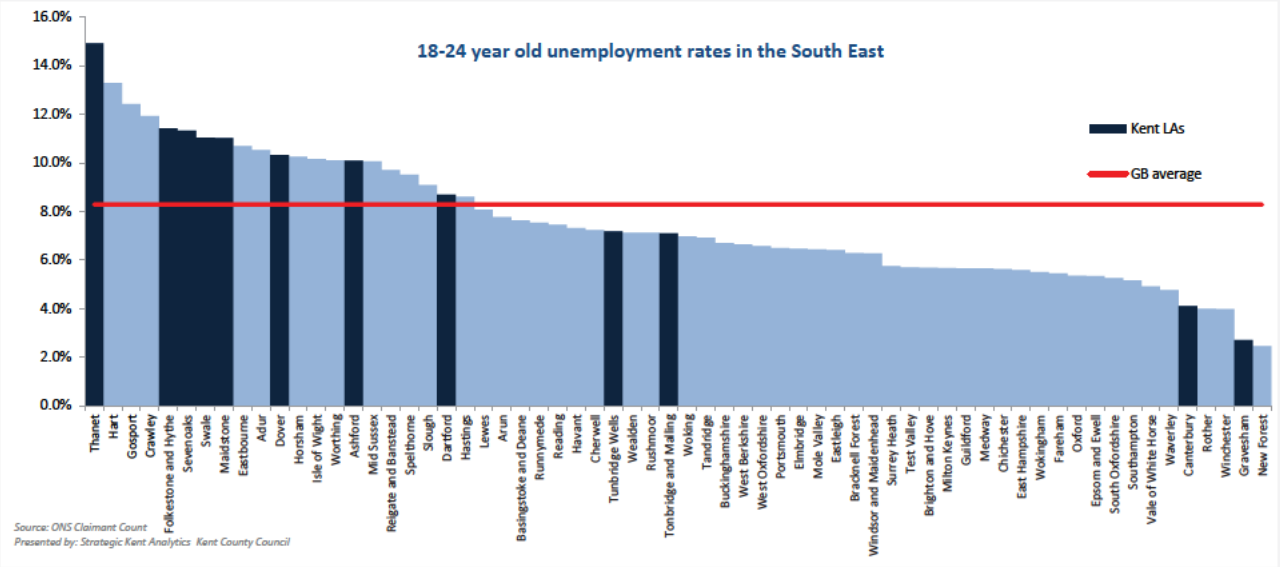


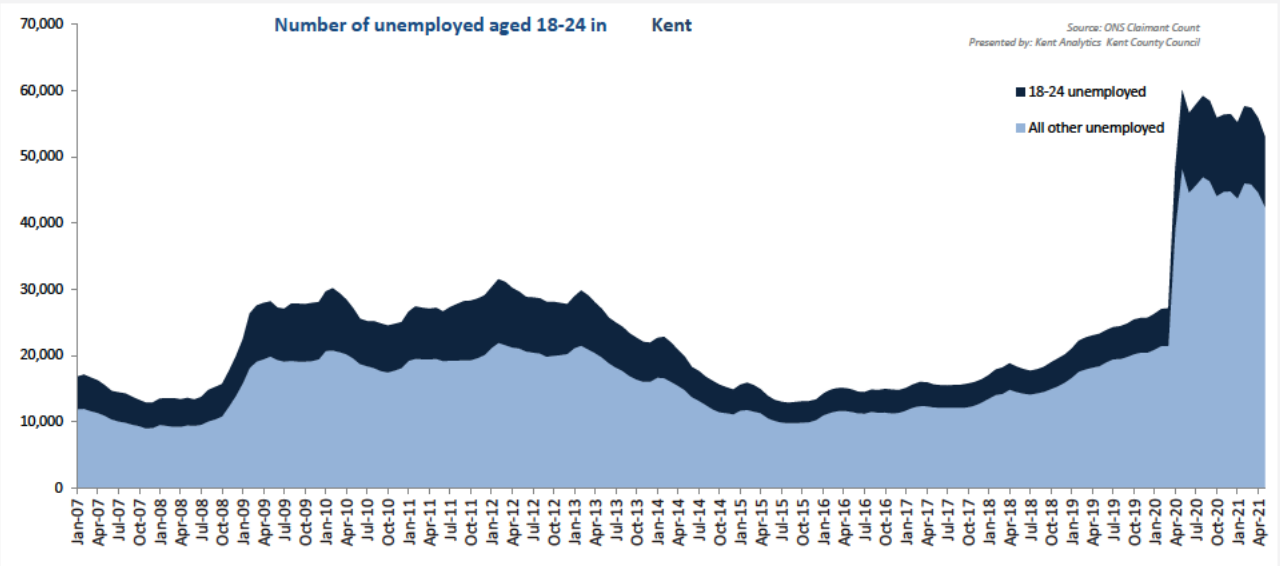
18-24 Unemployment

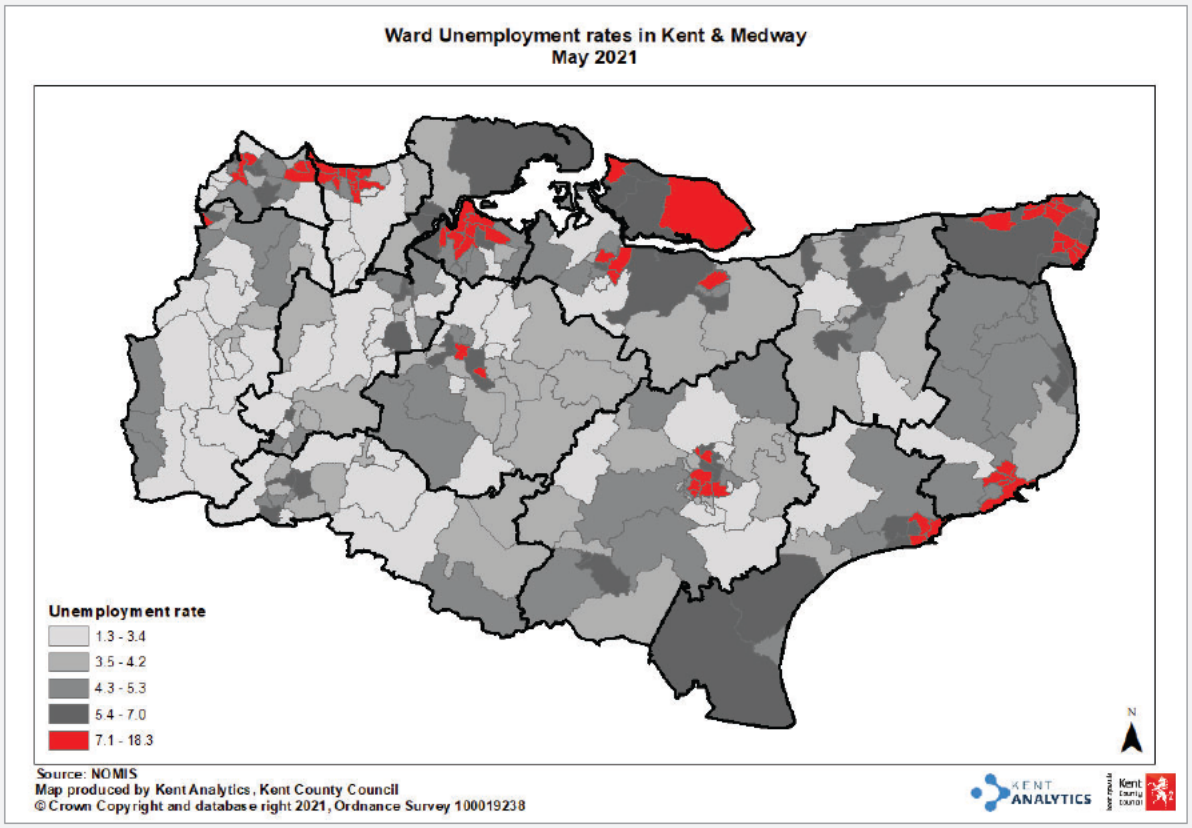
May 2021	Number	% rate	Number change since April 2021	% change since April 2021	Number change since May 2020	% change since May 2020
Kent	10,560	8.7%	-645	-5.8%	-1,220	-10.4%
United Kingdom	465,245	8.2%	+6,660	+1.5%	-30,930	-6.2%

Unemployment by age group - % of all unemployed

May 2021	Number of claimants in Kent	% of all unemployed in Kent	Number of claimants in United Kingdom	% of all unemployed in United Kingdom
18-24	10,560	19.9%	465,245	18.6%
25-49	29,260	55.2%	1,434,100	57.3%
50-64	13,080	24.7%	598,035	23.9%







This workbook looks at the total number of people claiming either Jobseekers Allowance or Universal Credit principally for the reason of being unemployed. It also looks at the age profile of claimants, in particular at youth unemployment which is defined as those aged 18 to 24.

This workbook uses information from a dataset called The Claimant Count by Sex and Age. This experimental series counts the number of people claiming Jobseeker's Allowance plus those who claim Universal Credit who are out of work. The dataset currently includes some out of work claimants of Universal Credit who are not required to look for work; for example, due to illness or disability. Therefore this dataset is considered experimental and the results should be interpreted with caution.

Unemployment rates are calculated using the Office for National Statistics Mid-year Population Estimates 2001-2018. The resident working age population is defined as all males and females aged 16-64. These denominators will be updated annually with the ONS mid-year population estimates.

Introduction of Universal Credit
Since 2013 the roll out of Universal Credit has progressed across the UK. Universal Credit will replace a number of means-tested benefits including the means-tested element of Jobseeker's Allowance (JSA).

The Universal Credit Live Service roll out in Kent & Medway began in April 2015. This was replaced in 2016 with the Universal Credit Full Service using the DWP bespoke digital system. The full service rollout in Kent was completed in autumn 2018. The table below shows how Universal Credit rolled out within Kent districts.

While initially Universal Credit was only available to single claimants without a partner and without child dependents, the roll out of the full service made Universal Credit available to all new claimant types and to those reporting changes to their personal circumstances.

From July 2019 the government intends to begin a pilot scheme transferring claimants of existing benefits (those that Universal Credit was designed to replace) onto Universal Credit. This managed migration will start initially with 10,000 existing claimants. They won't start moving people over to Universal Credit in great numbers until the pilot scheme has been completed and assessed, however they plan to have completed the full migration process by the end of 2023.

For more information on Universal Credit: https://www.gov.uk/universal-credit

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The Index of Multiple Deprivation (IMD2019): Headline findings for Kent

Related Documents

The Deprivation and Poverty web page contains more information which you may find useful.

- *Children in Poverty*
- *Homelessness*
- *Unemployment and benefits claimants*
- *Rough Sleepers*

***NOTE**: within this bulletin "Kent" refers to the Kent County Council (KCC) area which excludes Medway Unitary Authority*

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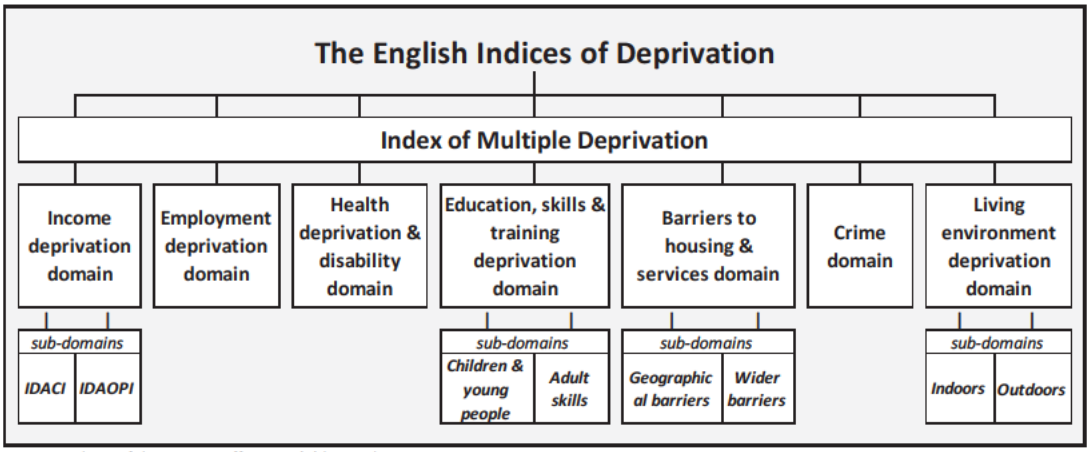
The Index of Multiple Deprivation (IMD2019) is the official measure of relative deprivation in England and is part of a suite of outputs that form the English Indices of Deprivation 2019 (IoD2019). This bulletin presents the findings for Kent.

- There are 901 Lower Super Output Areas (LSOAs) in Kent. A total of 555 remained within the same decile for IMD2019 as they were in IMD2015. This accounts for 62% of all Kent LSOAs.
- The number of Kent LSOAs that are within the 10% most deprived LSOAs in England between the IMD2019 and the previous IMD2015 remains at 51.
- The level of deprivation in nine out of 12 Kent local authority districts has increased since IMD2015 relative to other areas in England.
- Thanet continues to rank as the most deprived local authority in Kent.
- Tunbridge Wells continues to rank as the least deprived local authority in Kent.
- Tonbridge & Malling has experienced the largest increase in deprivation relative to other areas.
- Gravesham has experienced the largest decrease in deprivation relative to other areas.

Overview of the Indices of Deprivation 2019

The Indices of Deprivation 2019 (IoD2019) Is produced by the Ministry of Housing, Communities and Local Government (MHCLG) and provides a set of relative measures of deprivation for neighbourhoods or small areas called Lower-layer Super Output Areas (LSOAs) across England.

The IoD2019 is based on 39 separate indicators, organised across seven distinct domains and 4 sub-domains of deprivation. These are combined and weighted to calculate the overall Index of Multiple Deprivation 2019 (IMD2019). The IMD2019 is the most widely used of these indices.



IDACI - Indices of deprivation affecting children index
IDAOPI - Indices of deprivation affecting older people index

The IMD2019, domain indices and the supplementary indices, together with the higher area summaries, are collectively referred to as the IoD2019.

Geography and spatial scale

The IoD2019 provides a measure of deprivation experienced by people living in each neighbourhood or LSOA. LSOAs were developed by the Office for National Statistics (ONS) before the 2011 Census. There are 32,844 LSOAs in England with an average of 1,500 residents each and are a standard way of dividing up the country. They do not have descriptive place names like local electoral wards or parishes do but are named in a format beginning with the name of the local authority district followed by a 4-character code e.g. Ashford 001A.

All LSOAs in England are ranked according to their level of deprivation relative to that of other areas. A rank of 1 being the most deprived and a rank of 32,844 being the least deprived.

High ranking LSOAs or neighbourhoods can be referred to as the 'most deprived' or as being 'highly deprived' to aid interpretation. However, there is no definitive threshold above which an area is described as 'deprived'. The

IoD2019 measure deprivation on a *relative* rather than an *absolute* scale, so an LSOA ranked 100th is more deprived then an LSOA ranked 200th, but this does not mean it is twice as deprived.

It is common to describe how relatively deprived a small area is by saying whether it falls among the most deprived 10 per cent, 20 per cent or 30 per cent of small areas in England (although there is no definitive cut-off at which an area is described as 'deprived').

To help with this, deprivation 'deciles' are published alongside ranks. Deciles are calculated by ranking the 32,844 small areas in England from most deprived to least deprived and dividing them into 10 equal groups. These range from the most deprived 10 per cent of small areas nationally to the least deprived 10 per cent of small areas nationally.

Summary measures have been produced for the following higher-level geographies:

- lower tier local authority districts – Local Authority
- upper-tier local authorities – Counties, Metropolitan counties, & Unitary Authorities
- local enterprise partnerships
- clinical commissioning groups.

The Data

As far as is possible, each indicator is based on data from the most recent time point available. Using the latest available data in this way means that there is not a single consistent time point for all indicators. However, in practice most indicators in the IoD2019 relate to a 2015/16 timepoint.
As a result, the indicators do not take into consideration any changes to policy since the time point of the data used. For example, the 2015/16 benefits data used do not include the impact of the roll out of Universal Credit, which only began to replace certain income and health related benefits from April 2016.

Uses of the IMD and IoD

Since their original publication in 2000 the Indices have been used widely for a variety of purposes, including the following:

- Targeting resources, services and interventions
- Policy and strategy
- As an analytical resource to support commissioning by local authorities and health services, and in exploring inequalities.
- Funding bids

This bulletin presents the IMD2019 in comparison with IMD2015 at LSOA level in Kent and Medway. Summary measures for IMD2015 and IMD2019 at local authority and county level are also presented.

Due to the large number of LSOAs in Kent (902) the tables in this bulletin show only the most deprived 10% LSOAs in Kent. Full lists of all LSOAs in Kent & Medway with scores and ranks for all the domains are available in Excel format on request from Strategic Commissioning – Analytics.

e:-mail research@kent.gov.uk or telephone 03000 417444

The 2019IMD has not been made available at ward level. However following guidance from MHCLG we have produced a separate ward level IMD2019 summary that is available in a separate document.

Further information

Further information about the Indices of Deprivation 2019 is available from The Ministry of Housing, Communities and Local Government via their website.

www.gov.uk/government/statistics/english-indices-of-deprivation-2019

Deprivation at small area level in Kent's Lower Super Output Areas

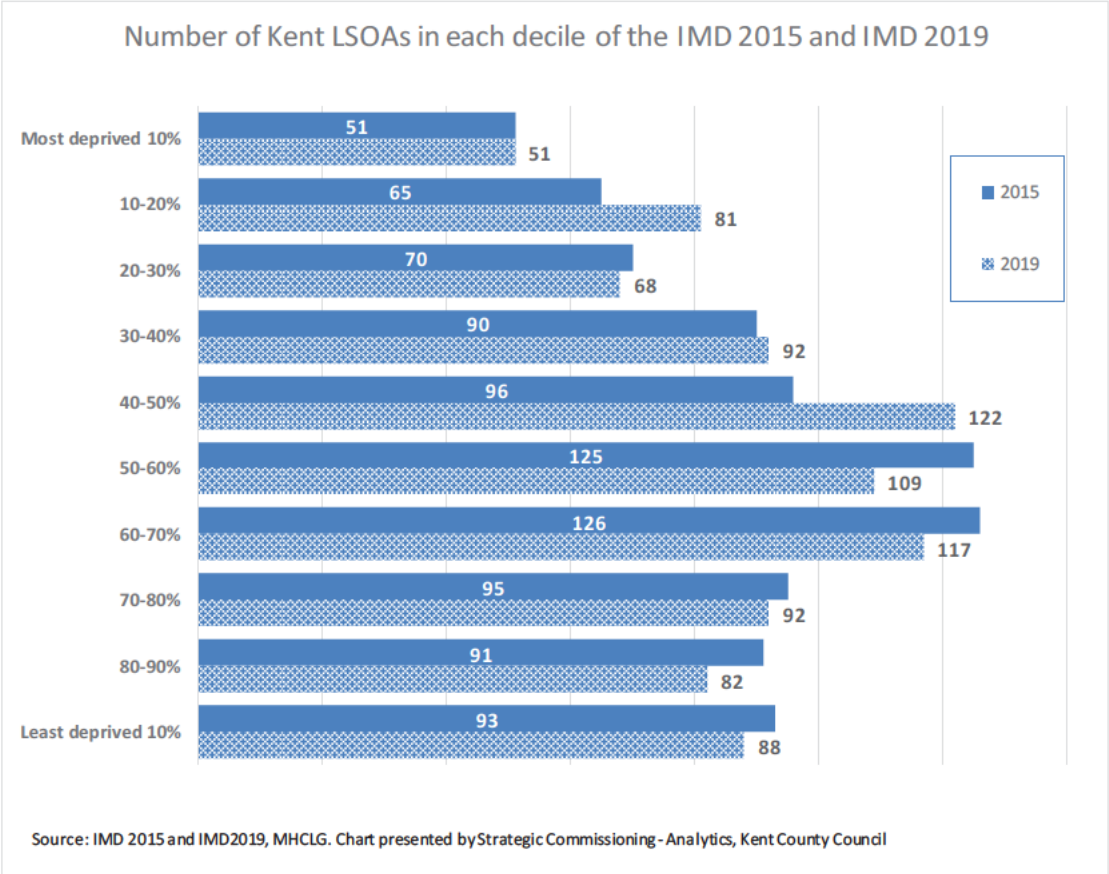
The number of Kent LSOAs that are within the 10% most deprived LSOAs in England between the IMD2015 and the IMD2019 remains at 51. Although there has been no direct increase in the number of the most deprived areas within Kent there have been changes within the lesser deprived areas

The number of Kent LSOAs within the 10 to 20% most deprived LSOAs in England has increased from 65 in 2015 to 81 in 2019. The number within the 40-50% most deprived have also increased from 96 to 122.

At the other end of the spectrum, the numbers of LSOAs within the 10% least deprived LSOAs in England has decreased from 93 in 2015 to 88 in 2019.

Chart 1 shows the changes in of Kent LSOAs within all of the deciles of the IMD2015 and IMD2019.

Chart 1: Number of Kent LSOAs in each decile of the IMD2015 and IMD2019



Source: IMD 2015 and IMD2019, MHCLG. Chart presented by Strategic Commissioning - Analytics, Kent County Council

Thanet has the most LSOAs within the most deprived decile with 18. This figure has also remained the same since the IMD2015.

The number of Folkestone & Hythe LSOAs within the 10% most deprived has also remained the same between the IMD2015 and IMD2019.

Four local authorities have experienced an increase in the number of LSOAs within the most deprived decile. These are Swale (+2), Ashford and Dover (both with +1) and Canterbury which now has 2 LSOAs within the 10% most deprived LSOAs for IMD2019 when there were none in the IMD2015.

There has been a reduction in the number of LSOAs within the 10% most deprived within Dartford (-2) and Gravesham (-4). Sevenoaks, Tonbridge & Malling and Tunbridge Wells do not have any LSOAs within the 10% most deprived

Medway Unitary authority has also seen an increase in the number of LSOAs in the 10% most deprived LSOAs between IMD2015 and IMD2019.

Table 1: IMD2019 and IMD2015: Kent & Medway LSOAs within the top 10% most deprived in England

Authority	Total LSOAs in each Local Authority	Within the top 10% most deprived: IMD 2015		Within the top 10% most deprived: IMD 2019		2015 - 2019 Change
		Number	%	Number	%	Number of LSOAs
Kent	902	51	*6%*	51	*6%*	0
Thanet	84	18	*35%*	18	*35%*	0
Swale	85	14	*27%*	16	*31%*	2
Dover	67	4	*8%*	5	*10%*	1
Folkestone & Hythe	67	4	*8%*	4	*8%*	0
Canterbury	90	0	*0%*	2	*4%*	2
Gravesham	64	6	*12%*	2	*4%*	-4
Maidstone	95	2	*4%*	2	*4%*	0
Ashford	78	0	*0%*	1	*2%*	1
Dartford	58	3	*6%*	1	*2%*	-2
Sevenoaks	74	0	*0%*	0	*0%*	0
Tonbridge & Malling	72	0	*0%*	0	*0%*	0
Tunbridge Wells	68	0	*0%*	0	*0%*	0
Medway U.A.	163	12	*24%*	14	*27%*	2

Table ranked by highest number of LSOAs in top 10% most deprived by IMD2019 Score

* A minus change illustrates a reduction in the number of LSOAs within the 10% most deprived areas in England.

* A positive change illustrates an increase in the number of LSOAs within the 10% most deprived areas in England.

Source: The English Indices of Deprivation 2015 and 2019, Ministry of Housing, Communities and Local Government
Table presented by Strategic Commissioning - Analytics, Kent county Council

The change in numbers of LSOAs within each of the deciles does not identify which areas have improved or declined. Chart 2 presents the proportion of LSOAs that have remained within the same decile in IMD2019 as IMD2015.

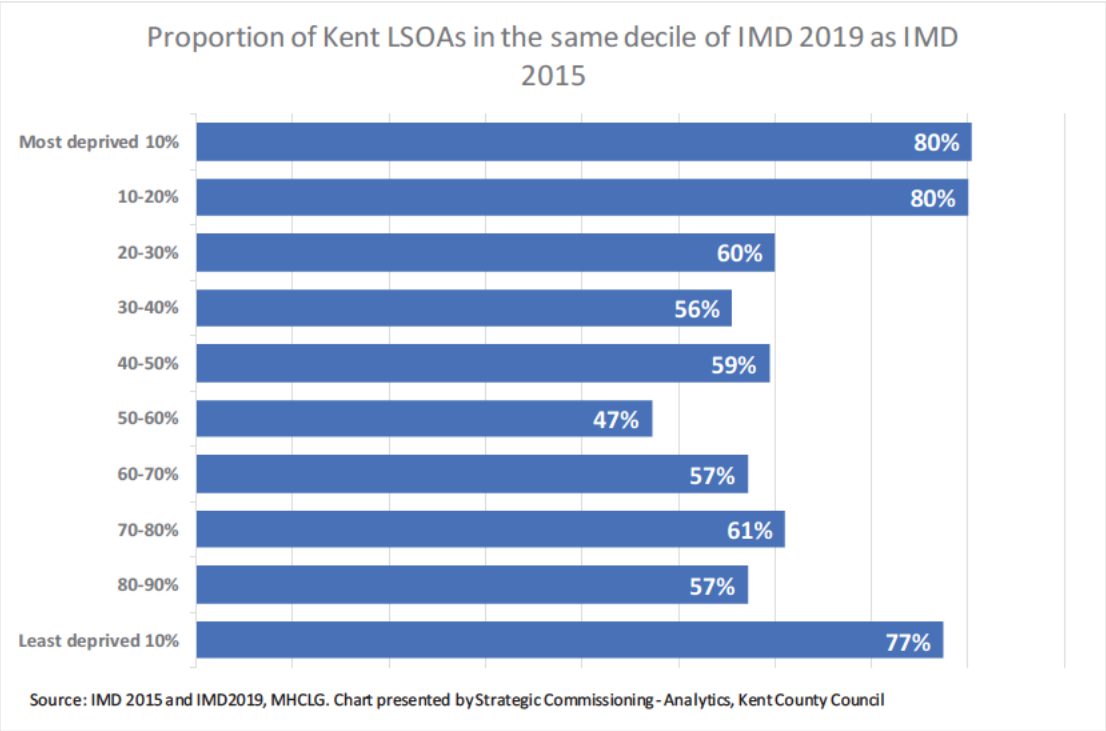
There are 901 LSOAs in Kent. A total of 555 LSOAs remained within the same decile for IMD2019 as they were in IMD2015. This accounts for 62% of all Kent LSOAs.

Of the 51 Kent LSOAs that were within the 10% most deprived LSOAs in England in 2019, 80% or 41 LSOAs remained in the 10% most deprived LSOAs for 2015. The same proportion of LSOAs were in the 10-20% most deprived in IMD2019 and IMD2015.

In contrast, only 77% of LSOAs within the least deprived 10% of LSOAs in 2019 were in the least deprived decile in 2015. This accounts for 72 LSOAs.

Only 57% of LSOAs within the 80-80% least deprived were in this decile for IMD2019 and IMD2015.

Chart 2: Proportion of Kent LSOAs in the same decile of the IMD 2019 and IMD2015



Maidstone has the highest number of LSOAs to remain in the same decile in IMD2019 as in IMD2015 with 62. This accounts for 65% of all LSOAs in Maidstone and is a higher percentage than for Kent as a whole.

Dartford has the lowest number and percentage of LSOAs to remain in the same decile in IMD2019 as in IMD2015 with 29. This accounts for 50% of all LSOAs in Dartford. Gravesham has the highest percentage of LSOAs to remain in the same decile in IMD2019 as in IMD2015 at 75%. This accounts for 48 LSOAs in Gravesham.

Table 2: LSOAs within the same deciles for IMD2015 as IMD2019

Authority	Total LSOAs in each Local Authority	LSOAs within the same decile in 2015 and 2019	
		Number	%
Kent	902	555	*62%*
Ashford	78	51	*65%*
Canterbury	90	51	*57%*
Dartford	58	29	*50%*
Dover	67	42	*63%*
Folkestone & Hythe	67	37	*55%*
Gravesham	64	48	*75%*
Maidstone	95	62	*65%*
Sevenoaks	74	48	*65%*
Swale	85	50	*59%*
Thanet	84	53	*63%*
Tonbridge & Malling	72	39	*54%*
Tunbridge Wells	68	45	*66%*
Medway U.A.	163	108	*66%*

Source: IMD2015 and IMD2019, MHCLG
Table presented by Strategic Commissioning - Analytics, Kent county Council

Of the 41 Kent LSOAs that remained in the 10% most deprived LSOAs for the IMD2015 and the IMD2019 the majority are in Thanet and Swale.

Thanet has the highest number of LSOAs to remain within the 10% most deprived decile in the IMD2015 and the IMD2015 with 16. This accounts for 19% of all LSOAs in Thanet.

Swale has the second highest number of LSOAs to remain within the 10% most deprived LSOAs for the IMD2015 and the IMD2019 with 14. This accounts for 16% of all LSOAs in Swale.

Ashford and Canterbury are the only local authorities to have LSOAs within the 10% most deprived decile of the IMD2019 when they had none in the IMD2015.

Sevenoaks, Tonbridge & Malling and Tunbridge Wells have no LSOAs within the 10% most deprived deciles of either the IMD2015 or the IMD2019.

Table 3: LSOAs within 10% most deprived deciles for IMD2015 and IMD2019

Authority	Total LSOAs in each Local Authority	LSOAs within 10% most deprived decile: IMD2015		LSOAs within 10% most deprived decile: IMD2019		LSOAs within 10% most deprived decile for both 2015 and 2019	
		Number	%	Number	%	Number	%
Kent	902	51	*6%*	51	*6%*	41	*5%*
Thanet	84	18	*21%*	18	*21%*	16	*19%*
Swale	85	14	*16%*	16	*19%*	14	*16%*
Dover	67	4	*6%*	5	*7%*	4	*6%*
Folkestone & Hythe	67	4	*6%*	4	*6%*	3	*4%*
Canterbury	90	0	*0%*	2	*2%*	0	*0%*
Gravesham	64	6	*9%*	2	*3%*	2	*3%*
Maidstone	95	2	*2%*	2	*2%*	1	*1%*
Ashford	78	0	*0%*	1	*1%*	0	*0%*
Dartford	58	3	*5%*	1	*2%*	1	*2%*
Sevenoaks	74	0	*0%*	0	*0%*	0	*0%*
Tonbridge & Malling	72	0	*0%*	0	*0%*	0	*0%*
Tunbridge Wells	68	0	*0%*	0	*0%*	0	*0%*
Medway U.A.	163	12	*7%*	14	*9%*	12	*7%*

Source: IMD2015 and IMD2019, MHCLG

Table presented by Strategic Commissioning - Analytics, Kent county Council

The 2019IMD has not been made available at ward level. However following guidance from MHCLG we have produced a separate ward level IMD2019 summary that is available in a separate document.

Table 4 and 4a indicates the wards in which the top 10% most deprived LSOAs in Kent are situated. This table also shows the national rank and Kent rank.

Table 4: The 10% most deprived LSOAs by IMD2019 in Kent: (Rank 1 to 45 out of 90)

2011 LSOA Name	2019 Ward Name	National rank			Kent Rank	
		position out of 32,844 LSOAs	Within top 10% most deprived 2019	Within top 10% most deprived 2015	Position out of 902 LSOAs	Within top 10% most deprived
Swale 001A	Sheerness	48	Yes	Yes	1	Yes
Thanet 003A	Margate Central	67	Yes	Yes	2	Yes
Thanet 001A	Cliftonville West	117	Yes	Yes	3	Yes
Thanet 001E	Margate Central	139	Yes	Yes	4	Yes
Thanet 013B	Newington	284	Yes	Yes	5	Yes
Swale 006A	Sheppey East	322	Yes	Yes	6	Yes
Swale 010C	Murston	337	Yes	Yes	7	Yes
Thanet 006D	Dane Valley	423	Yes	Yes	8	Yes
Swale 002C	Sheerness	457	Yes	Yes	9	Yes
Swale 006D	Sheppey East	591	Yes	Yes	10	Yes
Shepway 014A	Folkestone Harbour	614	Yes	Yes	11	Yes
Swale 002A	Sheerness	708	Yes	Yes	12	Yes
Swale 002B	Sheerness	771	Yes	Yes	13	Yes
Thanet 006E	Dane Valley	932	Yes	Yes	14	Yes
Thanet 013E	Northwood	933	Yes	Yes	15	Yes
Dover 011F	St Radigunds	994	Yes	Yes	16	Yes
Thanet 001B	Cliftonville West	1,033	Yes	Yes	17	Yes
Thanet 016D	Eastcliff	1,038	Yes	Yes	18	Yes
Swale 005C	Queenborough & Halfway	1,159	Yes	Yes	19	Yes
Swale 001B	Sheerness	1,205	Yes	Yes	20	Yes
Swale 004E	Sheppey Central	1,309	Yes	Yes	21	Yes
Thanet 001D	Cliftonville West	1,326	Yes	Yes	22	Yes
Shepway 003C	East Folkestone	1,356	Yes	Yes	23	Yes
Thanet 003E	Westbrook	1,563	Yes	Yes	24	Yes
Thanet 016E	Eastcliff	1,597	Yes	Yes	25	Yes
Swale 015D	Priory	1,639	Yes	Yes	26	Yes
Shepway 014B	Folkestone Central	1,761	Yes	Yes	27	Yes
Swale 001C	Sheerness	1,878	Yes	Yes	28	Yes
Dover 013B	Town & Castle	2,105	Yes	Yes	29	Yes
Dartford 001A	Temple Hill	2,133	Yes	Yes	30	Yes
Thanet 013A	Newington	2,242	Yes	Yes	31	Yes
Gravesham 001C	Northfleet North	2,278	Yes	Yes	32	Yes
Thanet 003D	Salmestone	2,342	Yes	Yes	33	Yes
Swale 002D	Sheerness	2,383	Yes	No	34	Yes
Swale 001D	Sheerness	2,411	Yes	Yes	35	Yes
Dover 011A	Buckland	2,450	Yes	No	36	Yes
Dover 012F	Town & Castle	2,473	Yes	Yes	37	Yes
Ashford 008C	Stanhope	2,474	Yes	No	38	Yes
Dover 011D	Whitfield	2,545	Yes	Yes	39	Yes
Thanet 005A	Garlinge	2,616	Yes	No	40	Yes
Thanet 004A	Cliftonville West	2,620	Yes	Yes	41	Yes
Gravesham 007A	Westcourt	2,760	Yes	Yes	42	Yes
Canterbury 001C	Heron	2,768	Yes	No	43	Yes
Maidstone 013A	Park Wood	2,915	Yes	Yes	44	Yes
Thanet 016C	Central Harbour	2,976	Yes	Yes	45	Yes

LSOAs were created in 2011 so LSOAs in Folkestone & Hythe Local Authority are still named Shepway

Source: English Indices of Deprivation 2019, Ministry of Housing, Communities and Local Government

A rank of 1 is the most deprived

Table presented by Strategic Commissioning - Analytics, Kent county Council

Table 4a: The 10% most deprived LSOAs by IMD2019 in Kent: (Rank 46 to 90 out of 90)

2011 LSOA Name	2019 Ward Name	National rank			Kent Rank	
		position out of 32,844 LSOAs	Within top 10% most deprived 2019	Within top 10% most deprived 2015	Position out of 902 LSOAs	Within top 10% most deprived
Shepway 003A	East Folkestone	3,047	Yes	No	46	Yes
Swale 010B	Milton Regis	3,069	Yes	No	47	Yes
Maidstone 013D	Shepway South	3,092	Yes	No	48	Yes
Canterbury 014B	Barton	3,152	Yes	No	49	Yes
Swale 006B	Sheppey East	3,175	Yes	Yes	50	Yes
Thanet 006C	Dane Valley	3,259	Yes	No	51	Yes
Thanet 015D	Eastcliff	3,342	No	Yes	52	Yes
Gravesham 002E	Riverside	3,550	No	Yes	53	Yes
Gravesham 011C	Singlewell	3,588	No	Yes	54	Yes
Maidstone 013E	Shepway South	3,643	No	No	55	Yes
Dover 013A	Town & Castle	3,655	No	No	56	Yes
Dartford 009A	Princes	3,657	No	No	57	Yes
Ashford 008B	Stanhope	3,686	No	No	58	Yes
Thanet 012C	Sir Moses Montefiore	3,690	No	No	59	Yes
Ashford 007F	Victoria	3,697	No	No	60	Yes
Thanet 003B	Margate Central	3,729	No	No	61	Yes
Canterbury 007B	Gorrell	3,794	No	No	62	Yes
Thanet 001C	Cliftonville West	3,804	No	Yes	63	Yes
Gravesham 002A	Central	3,918	No	Yes	64	Yes
Canterbury 009D	Seasalter	3,935	No	No	65	Yes
Canterbury 001B	Heron	3,976	No	No	66	Yes
Dartford 004C	Swanscombe	3,996	No	Yes	67	Yes
Canterbury 019A	Wincheap	4,014	No	No	68	Yes
Thanet 004B	Dane Valley	4,057	No	No	69	Yes
Maidstone 009C	High Street	4,066	No	No	70	Yes
Swale 014C	St Ann's	4,072	No	No	71	Yes
Shepway 014D	Folkestone Central	4,097	No	Yes	72	Yes
Shepway 004E	Folkestone Harbour	4,100	No	No	73	Yes
Gravesham 011D	Singlewell	4,102	No	Yes	74	Yes
Thanet 016B	Central Harbour	4,134	No	No	75	Yes
Dartford 001D	Temple Hill	4,208	No	Yes	76	Yes
Tonbridge & Malling 003A	East Malling	4,333	No	No	77	Yes
Maidstone 013B	Park Wood	4,406	No	Yes	78	Yes
Ashford 008A	Beaver	4,412	No	No	79	Yes
Sevenoaks 002A	Swanley St Mary's	4,465	No	No	80	Yes
Gravesham 003D	Riverside	4,535	No	No	81	Yes
Shepway 004B	East Folkestone	4,540	No	No	82	Yes
Swale 011D	Roman	4,579	No	No	83	Yes
Dover 006C	Aylesham, Eythorne & Shepherdswell	4,622	No	No	84	Yes
Shepway 014C	Folkestone Central	4,635	No	No	85	Yes
Swale 005B	Queenborough & Halfway	4,662	No	No	86	Yes
Dover 013E	Town & Castle	4,692	No	No	87	Yes
Thanet 013D	Northwood	4,709	No	No	88	Yes
Swale 003A	Minster Cliffs	4,759	No	No	89	Yes
Ashford 007B	Beaver	4,761	No	No	90	Yes

LSOAs were created in 2011 so LSOAs in Folkestone & Hythe Local Authority are still named Shepway

Source: English Indices of Deprivation 2019, Ministry of Housing, Communities and Local Government

A rank of 1 is the most deprived

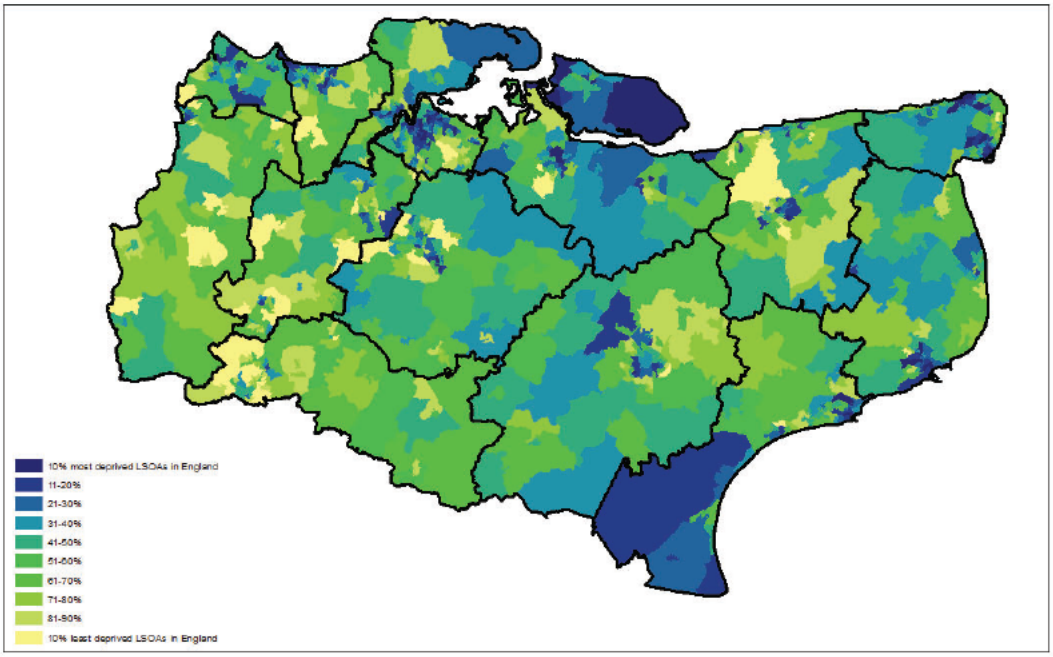
Table presented by Strategic Commissioning - Analytics, Kent county Council

Map 1 illustrates the pattern of deprivation across Kent and Medway at LSOA level. the darker areas are the most deprived areas and lighter ones are the least deprived areas.

The map shows there is an east west divide with the east of the county having higher levels of deprivation than the west.

The highest levels of deprivation can be seen in both coastal regions and urban areas.

Indices of Deprivation 2019 (IoD2019): Overall IMD2019
National rank of Lower Super Output Areas in Kent & Medway



Source: The English Indices of Deprivation 2019 (IoD2019): The Ministry of Housing, Communities & Local Government (MHCLG)
Map produced by Strategic Commissioning - Analytics, Kent County Council © Crown Copyright and database right 2019, Ordnance Survey 100019238

IMD2019 Summary measures for areas larger than LSOAs

The pattern of deprivation across large areas can be complex. In some areas, deprivation is concentrated in pockets of LSOAs, rather than evenly spread throughout. In some other areas the opposite picture is seen, with deprivation spread relatively evenly throughout the area, and with no highly deprived areas.

The set of summary measures have been published to help understand deprivation patterns for local authorities. No single summary measure is the 'best' measure. Each one highlights different aspects of deprivation, and each lead to a different ranking of areas. Comparison of the different measures is needed to give a fuller description of deprivation in a large area. In addition, it is important to remember that the higher-area measures are summaries; the Lower-layer Super Output Area level data provides more detail than is available through the summaries.

- **Average rank:** Population weighted average of the combined ranks for the LSOAs in a local authority. The nature of this measure means that a highly polarised larger area would not tend to score highly, because extremely deprived and less deprived LSOAs will 'average out'. Conversely, a larger area that is more uniformly deprived will tend to score highly on the measure.

- **Average score:** Population weighted average of the combined scores for the LSOAs in a local authority. The main difference from the average rank measure described above is that more deprived LSOAs tend to have more 'extreme' scores than ranks. So highly deprived areas will not tend to average out to the same extent as when using ranks; highly polarised areas will therefore tend to score higher on the average score measure than on the average rank.

- **Proportion of Lower-layer Super Output Areas (LSOAs) in most deprived 10% nationally**. By contrast to the average rank and average score measures, this measure focuses only on the most deprived LSOAs.

- **Extent:** Proportion of a local authority's population living in the most deprived LSOAs in the country. The extent measure is a more sophisticated version of the proportion of LSOAs in the most deprived 10 per cent nationally measure, and is designed to avoid the sharp cut-off seen in that measure, whereby areas ranked only a single place outside the most deprived 10 per cent are not counted at all.

- **Local concentration:** Population weighted average of the ranks of local authority's most deprived LSOAs that contain exactly 10% of the larger area's population. Similar to the proportion of LSOAs in the most deprived 10 per cent nationally and extent measures, the local concentration measure is based on only the most deprived LSOAs in the larger area, rather than on all areas. By contrast to these measures however, the local concentration measure gives additional weight to very highly deprived areas.

IMD2019 Summary measures for Kent Local Authorities

Recent boundary changes in England mean that the number of lower-tier (district, borough and unitary) authorities reduced from 326 in 2015 to 317 in 2019. The MHCLG have released the IMD2015 summary measures for local authorities cast to 2019 boundaries which enables us to provide a comparison with IMD2019 summary measures at local authority level.

Six out of twelve local authorities in Kent saw an improvement in at least one of the summary measures for local authorities in the IMD2019.

There were no improvements in any of the summary measures in Ashford, Dover, Folkestone & Hythe, Maidstone, Swale and Tonbridge & Malling for IMD2019.

Even though Thanet has seen improvements in the national rankings in three of the five summary measures, Thanet remains ranked as the most deprived local authority in Kent in all of the summary measures for local authorities in the IMD2019.

Swale is ranked as the second most deprived local authority in Kent across all summary measures. Sevenoaks and Tunbridge Wells rank as the two least deprived local authorities.

It is important to remember that any change in ranking is relative to changes in all local authorities in England between IMD2015 and IMD 2019.

Table 5: Kent local authorities by national rank of IMD2019 and IMD2015 summary measures for local authorities

Local Authorities	IMD - Rank of average rank (National)			IMD - Rank of average score (National)			IMD - Rank of proportion of LSOAs in most deprived 10% nationally			IMD - Rank of extent (National)			IMD - Rank of Local concentration (National)		
	2019	2015	change	2019	2015	change	2019	2015	change	2019	2015	change	2019	2015	change
Thanet	34	35	-1	30	28	2	37	35	2	42	44	-2	15	6	9
Swale	69	87	-18	56	77	-21	45	52	-7	81	91	-10	29	31	-2
Folkestone and Hythe	84	101	-17	90	110	-20	113	125	-12	99	123	-24	99	101	-2
Dover	107	113	-6	113	122	-9	102	125	-23	116	124	-8	109	124	-15
Gravesham	119	120	-1	123	120	3	146	89	57	112	116	-4	121	107	14
Dartford	145	167	-22	154	168	-14	170	131	39	163	168	-5	146	157	-11
Ashford	152	171	-19	158	174	-16	177	200	-23	155	167	-12	149	167	-18
Canterbury	185	182	3	179	181	-2	159	200	-41	158	165	-7	157	165	-8
Maidstone	188	203	-15	185	196	-11	161	168	-7	170	179	-9	166	171	-5
Tonbridge and Malling	236	269	-33	234	266	-32	195	200	-5	212	244	-32	210	244	-34
Sevenoaks	253	264	-11	251	260	-9	195	200	-5	228	222	6	244	234	10
Tunbridge Wells	273	271	2	274	274	0	195	200	-5	257	251	6	263	265	-2
Medway	98	117	-19	93	115	-22	93	109	-16	86	108	-22	86	104	-18

A negative change between 2015 and 2019 shows a rise in the rank therefore an increase in level of deprivation in relation to all other LAs

Kent Local Authorities ranked on 2019 rank of average rank

Source: English Indices of Deprivation 2019, MHCLG, Table presented by Strategic Commissioning - Analytics, Kent County Council

A rank of 1 is the most deprived

National rank is out of 317 local authorities

IMD2019 Summary measures for upper tier local authorities

Recent boundary changes in England mean that the number of upper-tier local authorities (counties and unitary authorities) reduced from 152 in 2015 to 151 in 2019. The MHCLG have not released the IMD2015 summary measures for upper-tier local authorities cast to 2019 boundaries. As a result, we cannot provide a direct comparison of Kent by national rank between IMD2015 and 2019IMD.

However, as with the LSOAs, we can compare the deprivation 'deciles' for upper-tier local authorities. Deciles have been calculated by ranking the summary measure scores of the 152 upper tier local authorities in IMD2015 and the 151 upper tier local authorities in IMD2019 areas in England from most deprived to least deprived and dividing them into 10 equal groups. These range from the most deprived 10 per cent of small areas nationally (decile 1) to the least deprived 10 per cent of small areas nationally (decile 10).

Table 6: Ranks and deciles of summary measures for Kent: IMD2019 and IMD2015

	IMD2019		IMD2015	
IMD2019 Summary measure for upper-tier lcoal authority	National Rank (out of 151 areas)	National Decile	National Rank (out of 152 areas)	National Decile
Rank of Average rank	95	7	104	7
Rank of Average score	93	7	100	7
Rank of proportion of LSOAs in most deprived 10% nationally	79	6	89	6
Extent	93	5	98	6
Local concentration	74	6	83	6

Source: English Indices of Deprivation 2019 MHCLG

Table presented by Strategic Commissioning - Analytics, Kent county Council

Kent has remained within the same national decile for IMD2019 as for IMD2015 for 4 of the 5 summary measures. Kent has moved up one decile on the extent measure which indicates that Kent is more deprived in this measure in 2019 than it was in 2015.

The number of local authorities within the South East region was not affected by the recent boundary changes therefore we are able to provide a comparison between the IMD2015 and IMD2019 based on the rankings of the 19 upper-tier local authorities within the South East region.

Kent is ranked within the least deprived 50% of upper-tier local authorities in England for 4 out of 5 summary measures of the IMD2019. A rank of 74 for the local concentration measure which puts Kent within the most deprived

50% of local authorities in England for this measure. Kent is ranked within the 50% most deprived areas within the South East on all summary measures.

Table 7: Kent local authorities by South East rank of IMD2019 and IMD2015 summary measures for upper-tier localauthorities

County / Unitary Authority	IMD - Rank of average rank (South East)			IMD - Rank of average score (South East)			IMD - Rank of proportion of LSOAs in most deprived 10% (South East)			IMD - Rank of extent (South East)			IMD - Rank of Local concentration (South East)		
	2019	2015	change	2019	2015	change	2019	2015	change	2019	2015	change	2019	2015	change
Southampton	1	1	0	27	27	-0	1	1	0	1	1	0	2	2	0
Portsmouth	2	2	0	27	27	-0	2	2	0	2	2	0	1	1	0
Slough	3	3	0	23	23	0	13	13	0	10	10	0	10	5	5
Isle of Wight	4	4	0	23	23	0	9	8	1	5	5	0	8	4	4
Medway	**5**	**6**	**-1**	**24**	**22**	**2**	**4**	**4**	**0**	**3**	**4**	**-1**	**4**	**6**	**-2**
Brighton & Hove	6	5	1	21	23	-3	3	3	0	4	3	1	3	3	0
Reading	7	7	0	20	19	0	8	9	-1	8	9	-1	9	7	2
East Sussex	8	8	0	20	19	1	5	6	-1	6	8	-2	5	8	-3
Kent	**9**	**9**	**0**	**20**	**19**	**1**	**6**	**7**	**-1**	**7**	**7**	**0**	**6**	**9**	**-3**
Milton Keynes	10	10	0	18	18	-0	7	5	2	9	6	3	7	10	-3
West Sussex	11	11	0	14	14	0	10	11	-1	12	11	1	12	11	1
Hampshire	12	12	0	13	12	1	11	10	1	11	12	-1	11	12	-1
Oxfordshire	13	13	0	12	12	0	12	12	0	13	13	0	13	13	0
Bracknell Forest	14	14	0	10	10	-0	14	14	0	17	17	0	16	14	2
Buckinghamshire	15	16	-1	10	10	0	15	16	-1	16	14	2	15	16	-1
West Berkshire	16	15	1	10	10	-0	16	15	1	15	15	0	18	15	3
Surrey	17	17	0	10	9	1	17	17	0	14	16	-2	14	17	-3
Windsor & Maidenhead	18	18	0	8	9	-0	18	18	0	18	18	0	17	18	-1
Wokingham	19	19	0	6	6	0	19	19	0	19	19	0	19	19	0

A negative change between 2015 and 2019 shows a rise in the rank therefore an increase in level of deprivation in relation to all other LAs

Table sorted by rank of average rank

Source: English Indices of Deprivation 2019 MHCLG

Table presented by Strategic Commissioning - Analytics, Kent county Council

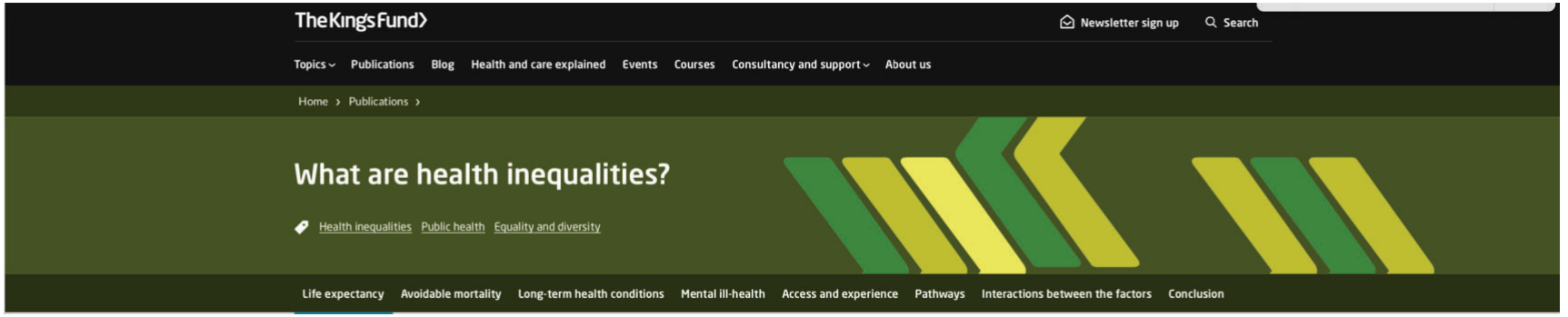
A rank of 1 is the most deprived (out of 19 counties and unitary authorities in the South East)

Conclusion

The IoD2019 have been produced using the same approach, structure and methodology used to create the previous IoD2015 (and the 2010, 2007 and 2004 versions). This allows some comparisons to be made over time between the IoD2019 and previous versions, but only in terms of comparing the **rankings** and **deciles** as determined at the relevant time point by each of the versions.

Just because the overall rank may or may not have changed between the Indices, it does not mean that there have been no changes to the level of deprivation in the area. For example, if the absolute levels of deprivation in all areas were increasing or decreasing at the same rate, the ranks would show no change.

Equally, when comparing the overall IMD, if improvements in one domain are offset by a decline in another domain, the overall IMD position may be about the same even if significant changes have occurred in these two underlying domains.



Inequalities in life expectancy

Life expectancy is a key measure of a population's health status. Inequality in life expectancy is therefore one of the foremost measures of health inequality.

Life expectancy is closely related to people's socio-economic circumstances. The most common summary measure of these circumstances across a population is deprivation. The index of multiple deprivation is a way of summarising how deprived people are within an area, based on a set of factors that includes their levels of income, employment, education and local levels of crime.

In England, there is a systematic relationship between deprivation and life expectancy, known as the social gradient in health. Males living in the least deprived areas can, at birth, expect to live 9.4 years longer than males in the most deprived areas. For females, this gap is 7.4 years.

Importantly, this social gradient relationship holds true across the whole population – health inequalities are experienced by everyone, not just those at the very bottom and top. Figures 1 and 2 show how life expectancy and disability-free life expectancy, which is discussed in the next section, increase as neighbourhood deprivation falls.

This relationship has become known as 'the Marmot curve' because of its prominence in Sir Michael Marmot's report Fair society, healthy lives. Curves showing the same relationship can also be drawn for other measures of deprivation, such as income or education.

Inequalities in healthy life expectancy

Another key measure of health inequality is how much time people spend in good health over the course of their lives, given how crucial good health is to wider quality of life and people's ability to do the things that they value.

Two important measures of the amount of time that people spend in good health are 'healthy life expectancy' and 'disability-free life expectancy'. The former estimates time spent in 'good' or 'very good' health, based on how people perceive their general health. The latter estimates, again based on self-reported assessment, time spent without conditions or illnesses that limit people's ability to carry out day-to-day activities.

Inequalities in both healthy life expectancy and disability-free life expectancy are even wider than inequalities in life expectancy (illustrated by the steeper curves for disability-free life expectancy in Figures 1 and 2). People in more deprived areas spend, on average, a far greater part of their already far shorter lives in poor health.

The gap in healthy life expectancy at birth is stark. In 2015–17, people in the least deprived areas could expect to live roughly 19 more years in good health than those in the most deprived areas. People in the most deprived areas spend around a third of their lives in poor health, twice the proportion spent by those in the least deprived areas.

Again, geographical inequalities exist in this measure. Healthy life expectancy at birth for males in North-East England is 59.5 years, compared to 66.1 years for males in the South East, a gap of 6.6 years. For females, the gap is 5.8 years.

Figures 5 and 6 show healthy life expectancy at birth for males and females in 2015–17 by local authority area. For females, the area with the lowest healthy life expectancy was Nottingham, at 53.5 years, and the area with the highest was Wokingham, at 71.6 years. For males, the area with the lowest healthy life expectancy was Blackpool, at 54.7 years, and the area with the highest was Rutland, at 69.8 years.

UK Business Counts 2020

Information on businesses in Kent

Related documents

Business Demography – Looking at the counts business activity during the course of the whole of the financial year

Construction Industries in Kent – the number of construction businesses in Kent and the people employed in the sector

Creative Industries in Kent - the number of creative businesses in Kent and the people employed in the sector

Further Information

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The UK Business data is published annually by the Office for National Statistics (ONS) and is based on output from the VAT and PAYE administrative systems.

The information provided by the UK Business dataset gives a snap shot of businesses and is broken down by size band, industry, turnover and age of business.

An additional dataset from ONS is the Business Demography dataset. This is also based on VAT and PAYE data but this information measures any activity during the course of the year, so leads to slightly higher counts of businesses. It provides information on business births, deaths and survival rates.

Information on this dataset can be found in the bulletin "Business Demography".

Kent Summary

- As at March 2020 there were 64,005 enterprises in Kent
- Kent has a significantly higher proportion of enterprises (17.1%) in the construction industry than is seen nationally (12.8%)
- The highest proportion of enterprises in Kent (17.2%) are within the Professional, scientific and technical sector
- The majority of enterprises in Kent (90.2%) are micro enterprises (with 0-9 employees)
- The majority of enterprises in Kent (99.4%) are classed as companies which operate within the private sector.

Introduction

The UK Business data is produced from a snapshot of the Inter Departmental Business Register (IDBR) - usually taken during March - and provides the basis for the Office for National Statistics (ONS) to conduct surveys of businesses.

The main administrative sources for the IDBR are VAT trader and PAYE employer information passed to the ONS by HM Revenue & Customs under the Value Added Tax Act 1994 for VAT traders and the Finance Act 1969 for PAYE employers; details of incorporated businesses are also passed to ONS by Companies House. ONS Survey data and survey information from the Department of Enterprise, Trade and Investment – Northern Ireland (DETINI) and the Department for Environment, Food and Rural Affairs (DEFRA) farms register provide auxiliary information. Construction statistics formerly produced by the Department for Business Innovation & Skills are now produced by ONS.

The IDBR combines the information from the three administrative sources with this survey data in a statistical register comprising over two million enterprises. These comprehensive administrative sources combined with the survey data contribute to the coverage on the IDBR, which is one of its main strengths, representing nearly 99 per cent of UK economic activity.

The latest data is published for 2020 and is based upon the 2007 revision to the Standard Industrial Classification UKSIC (2007). Detailed information about the types of industry which make up each of the industrial sectors is available from the UK Standard Industrial Classification of Economic Activities published by the Office for National Statistics.

This bulletin looks at the main tables available from the UK Business data, which relate to VAT/PAYE enterprises.

This bulletin will be updated in Autumn 2021.

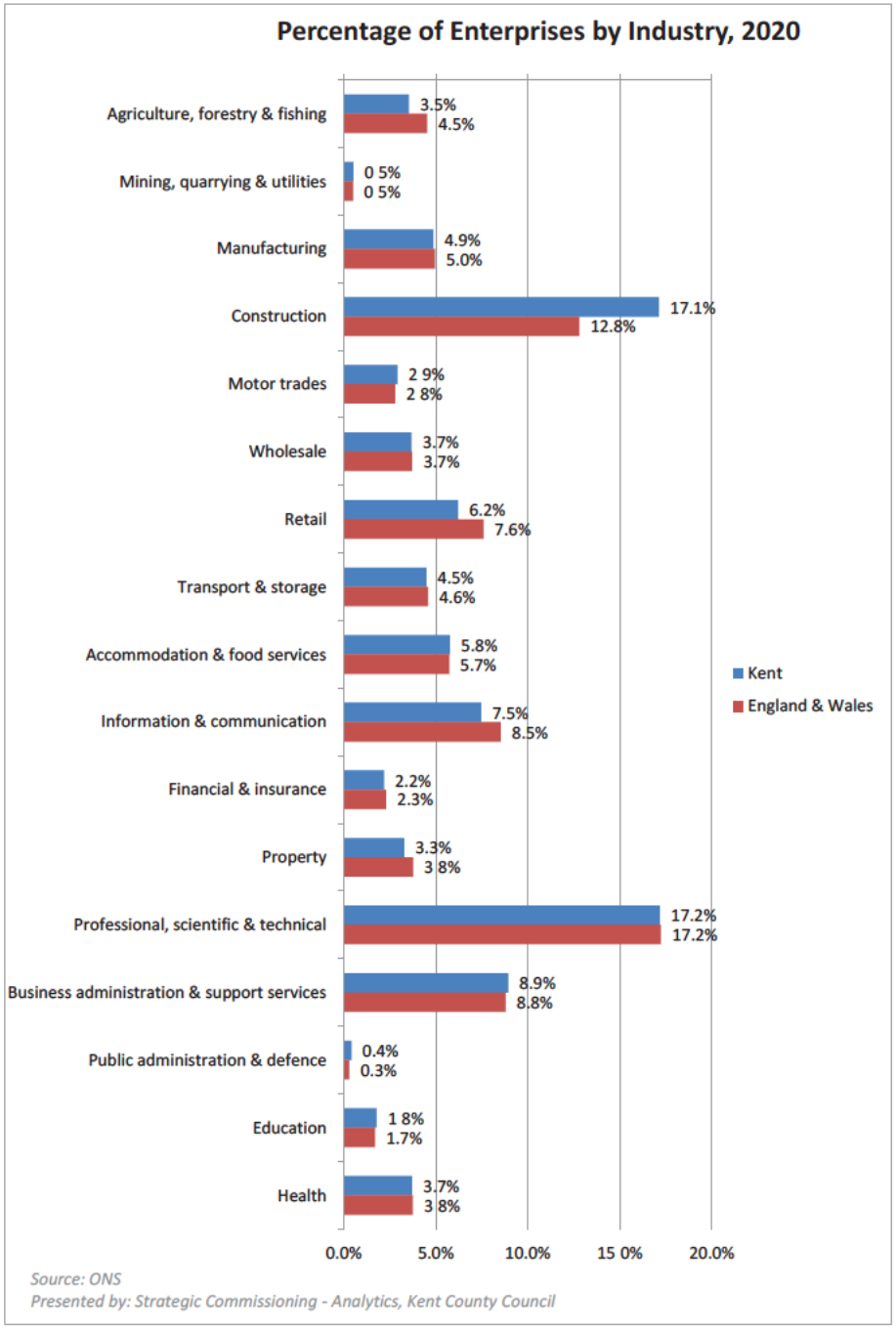
Analysis

Enterprises by Industry

The UK Business data shows us the number of enterprises by broad industrial group.

Overall Kent has a similar profile to England and Wales although does show a noticeably higher proportion of enterprises in the Construction Industry and lower proportions in Agriculture and Fishing, Retail and Information & Communications industries. This is shown in Chart 1.

Chart 1: Enterprises by Industry



Tables 1 and 2 on the following two pages show the number and percentage of businesses by industry in Kent local authority districts and Kent as a whole. Regional and national figures are also presented for comparison.

Table 1: Number of VAT and/or PAYE based enterprises in 2020 by broad industrial group

UK SIC 2007

	Agriculture, forestry & fishing	Mining, quarrying & utilities	Manufacturing	Construction	Motor trades	Wholesale	Retail	Transport & storage	Accommodation & food services	Information & communication	Financial & insurance	Property	Professional, scientific & technical	Business administration & support services	Public administration & defence	Education	Health	Arts, entertainment, recreation & other services	Total
Ashford	420	40	330	965	160	430	345	190	265	430	385	250	1,070	595	40	95	230	335	6,575
Canterbury	170	25	250	805	150	190	425	150	415	370	85	195	945	450	20	110	250	400	5,400
Dartford	25	20	205	1,005	150	165	235	395	270	545	75	175	755	390	10	80	155	200	4,855
Dover	190	25	190	620	115	95	290	155	295	180	45	80	515	295	35	75	150	225	3,570
Folkestone & Hythe	210	15	175	580	130	100	310	135	355	210	40	125	595	295	20	70	145	240	3,750
Gravesham	45	20	195	890	120	105	265	385	250	260	45	100	545	380	5	70	150	215	4,045
Maidstone	305	45	370	1,455	240	300	410	560	345	480	145	250	1,250	645	35	125	290	395	7,650
Sevenoaks	205	30	305	1,090	195	240	365	135	255	615	155	270	1,380	685	25	115	215	425	6,710
Swale	220	45	350	995	185	160	315	310	320	260	55	150	675	405	25	85	175	285	5,020
Thanet	65	20	235	725	125	110	355	135	410	245	55	120	545	330	10	85	165	315	4,050
Tonbridge and Malling	130	40	285	1,065	165	230	265	205	255	545	155	170	1,235	640	30	115	215	315	6,055
Tunbridge Wells	285	15	230	775	125	235	395	120	270	650	155	220	1,480	615	15	110	240	395	6,330
Kent	2,270	335	3,120	10,970	1,860	2,360	3,975	2,880	3,700	4,785	1,395	2,105	11,000	5,725	265	1,145	2,380	3,735	64,005
Medway	75	35	450	2,075	270	300	620	725	495	550	115	225	1,225	730	15	160	365	450	8,885
Kent + Medway	2,345	370	3,570	13,045	2,125	2,665	4,600	3,605	4,200	5,335	1,510	2,330	12,225	6,455	280	1,310	2,745	4,185	72,890
South East LEP	5,990	890	9,050	32,400	5,480	6,505	11,160	8,605	9,475	12,975	3,505	5,865	28,490	15,560	610	3,115	6,430	10,305	176,410
South East Region	11,785	1,780	18,705	57,980	11,155	14,470	31,050	14,910	19,780	45,685	8,560	14,250	81,095	36,995	1,250	7,685	14,865	26,370	418,370
ENGLAND AND WALES	113,185	12,745	123,855	319,750	69,640	93,060	189,745	114,390	143,050	213,185	57,535	94,080	430,690	219,655	7,570	42,285	93,945	158,460	2,496,825

Source: ONS

Presented by: Strategic Commissioning - Analytics, Kent County Council

Table 2: Percentage of VAT and/or PAYE based enterprises in 2020 by broad industrial group

UK SIC 2007

	Agriculture, forestry & fishing	Mining, quarrying & utilities	Manufacturing	Construction	Motor trades	Wholesale	Retail	Transport & storage	Accommodation & food services	Information & communication	Financial & insurance	Property	Professional, scientific & technical	Business administration & support services	Public administration & defence	Education	Health	Arts, entertainment, recreation & other services
Ashford	6.4	0.6	5.0	14.7	2.4	6.5	5.2	2.9	4.0	6.5	5.9	3.8	16.3	9.0	0.6	1.4	3.5	5.1
Canterbury	3.1	0.5	4.6	14.9	2.8	3.5	7.9	2.8	7.7	6.9	1.6	3.6	17.5	8.3	0.4	2.0	4.6	7.4
Dartford	0.5	0.4	4.2	20.7	3.1	3.4	4.8	8.1	5.6	11.2	1.5	3.6	15.6	8.0	0.2	1.6	3.2	4.1
Dover	5.3	0.7	5.3	17.4	3.2	2.7	8.1	4.3	8.3	5.0	1.3	2.2	14.4	8.3	1.0	2.1	4.2	6.3
Gravesham	5.6	0.4	4.7	15.5	3.5	2.7	8.3	3.6	9.5	5.6	1.1	3.3	15.9	7.9	0.5	1.9	3.9	6.4
Maidstone	1.1	0.5	4.8	22.0	3.0	2.6	6.6	9.5	6.2	6.4	1.1	2.5	13.5	9.4	0.1	1.7	3.7	5.3
Sevenoaks	4.0	0.6	4.8	19.0	3.1	3.9	5.4	7.3	4.5	6.3	1.9	3.3	16.3	8.4	0.5	1.6	3.8	5.2
Shepway	3.1	0.4	4.5	16.2	2.9	3.6	5.4	2.0	3.8	9.2	2.3	4.0	20.6	10.2	0.4	1.7	3.2	6.3
Swale	4.4	0.9	7.0	19.8	3.7	3.2	6.3	6.2	6.4	5.2	1.1	3.0	13.4	8.1	0.5	1.7	3.5	5.7
Thanet	1.6	0.5	5.8	17.9	3.1	2.7	8.8	3.3	10.1	6.0	1.4	3.0	13.5	8.1	0.2	2.1	4.1	7.8
Tonbridge and Malling	2.1	0.7	4.7	17.6	2.7	3.8	4.4	3.4	4.2	9.0	2.6	2.8	20.4	10.6	0.5	1.9	3.6	5.2
Tunbridge Wells	4.5	0.2	3.6	12.2	2.0	3.7	6.2	1.9	4.3	10.3	2.4	3.5	23.4	9.7	0.2	1.7	3.8	6.2
Kent	3.5	0.5	4.9	17.1	2.9	3.7	6.2	4.5	5.8	7.5	2.2	3.3	17.2	8.9	0.4	1.8	3.7	5.8
Medway	0.8	0.4	5.1	23.4	3.0	3.4	7.0	8.2	5.6	6.2	1.3	2.5	13.8	8.2	0.2	1.8	4.1	5.1
Kent + Medway	3.2	0.5	4.9	17.9	2.9	3.7	6.3	4.9	5.8	7.3	2.1	3.2	16.8	8.9	0.4	1.8	3.8	5.7
South East LEP	3.4	0.5	5.1	18.4	3.1	3.7	6.3	4.9	5.4	7.4	2.0	3.3	16.1	8.8	0.3	1.8	3.6	5.8
South East Region	2.8	0.4	4.5	13.9	2.7	3.5	7.4	3.6	4.7	10.9	2.0	3.4	19.4	8.8	0.3	1.8	3.6	6.3
ENGLAND AND WALES	4.5	0.5	5.0	12.8	2.8	3.7	7.6	4.6	5.7	8.5	2.3	3.8	17.2	8.8	0.3	1.7	3.8	6.3

Source: ONS

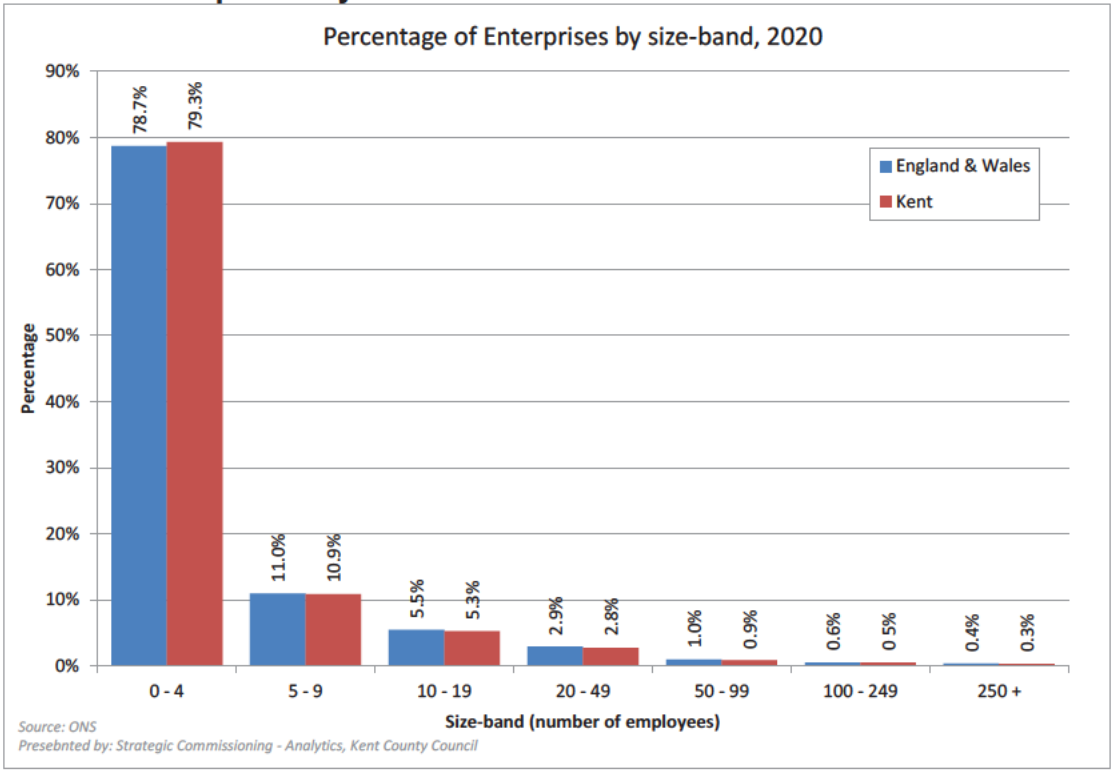
Presented by: Strategic Commissioning - Analytics, Kent County Council

Enterprises by employee size

The majority of enterprises are classed as micro businesses i.e. they have 0 - 9 employees. In Kent 90.2% of enterprises are classed as micro, 89.7% in England and Wales.

Chart 2 shows the proportion of enterprises in Kent and England and Wales by employment size.

Chart 2: Enterprises by sizeband



Tables 3 and 4 show an even greater breakdown of the number and percentage of enterprises by the number of employees.

The data shows that while the majority of enterprises are micro businesses employing up to 9 people, most of these actually have 0 - 4 employees (88.0% of micro businesses in Kent).

Kent has a slightly higher proportion of enterprises with 0 – 4 employees and slightly lower proportion with 5 – 9 employees than is seen nationally.

Table 3: Number of VAT and/or PAYE based enterprises by employment sizeband

	Employment size							
2020	0 - 4	5 - 9	10 - 19	20 - 49	50 - 99	100 - 249	250 +	TOTAL
Ashford	5,355	650	315	165	50	30	20	6,575
Canterbury	4,120	680	330	160	60	25	25	5,400
Dartford	3,995	420	200	135	50	30	20	4,855
Dover	2,740	445	215	95	40	25	5	3,570
Folkestone & Hythe	2,905	460	205	130	30	15	10	3,750
Gravesham	3,300	420	165	100	25	20	10	4,045
Maidstone	6,095	785	430	190	70	55	30	7,650
Sevenoaks	5,380	715	345	165	60	30	20	6,710
Swale	3,875	620	285	140	50	35	15	5,020
Thanet	3,140	490	235	120	30	30	5	4,050
Tonbridge and Malling	4,780	625	325	200	65	35	25	6,055
Tunbridge Wells	5,085	655	330	175	50	30	10	6,330
Kent	50,765	6,955	3,385	1,775	575	350	210	64,005
Medway	7,155	935	445	205	60	50	35	8,885
Kent + Medway	57,920	7,890	3,825	1,980	635	400	240	72,890
South East LEP	140,350	19,125	9,235	4,750	1,535	890	520	176,410
South East Region	334,935	42,650	21,560	11,590	3,735	2,285	1,620	418,370
ENGLAND AND WALES	1,964,640	274,145	136,585	73,320	24,585	13,770	9,785	2,496,825

Source: ONS
Presented by: Strategic Commissioning - Analytics, Kent County Council

Table 4: Percentage of VAT and/or PAYE based enterprises by sizeband

	Employment size							
2020	0 - 4	5 - 9	10 - 19	20 - 49	50 - 99	100 - 249	250 +	TOTAL
Ashford	81.4	9.9	4.8	2.5	0.8	0.5	0.3	100
Canterbury	76.3	12.6	6.1	3.0	1.1	0.5	0.5	100
Dartford	82.3	8.7	4.1	2.8	1.0	0.6	0.4	100
Dover	76.8	12.5	6.0	2.7	1.1	0.7	0.1	100
Gravesham	77.5	12.3	5.5	3.5	0.8	0.4	0.3	100
Maidstone	81.6	10.4	4.1	2.5	0.6	0.5	0.2	100
Sevenoaks	79.7	10.3	5.6	2.5	0.9	0.7	0.4	100
Shepway	80.2	10.7	5.1	2.5	0.9	0.4	0.3	100
Swale	77.2	12.4	5.7	2.8	1.0	0.7	0.3	100
Thanet	77.5	12.1	5.8	3.0	0.7	0.7	0.1	100
Tonbridge and Malling	78.9	10.3	5.4	3.3	1.1	0.6	0.4	100
Tunbridge Wells	80.3	10.3	5.2	2.8	0.8	0.5	0.2	100
Kent	79.3	10.9	5.3	2.8	0.9	0.5	0.3	100
Medway	80.5	10.5	5.0	2.3	0.7	0.6	0.4	100
Kent + Medway	79.5	10.8	5.2	2.7	0.9	0.5	0.3	100
South East LEP	79.6	10.8	5.2	2.7	0.9	0.5	0.3	100
South East Region	80.1	10.2	5.2	2.8	0.9	0.5	0.4	100
ENGLAND AND WALES	78.7	11.0	5.5	2.9	1.0	0.6	0.4	100

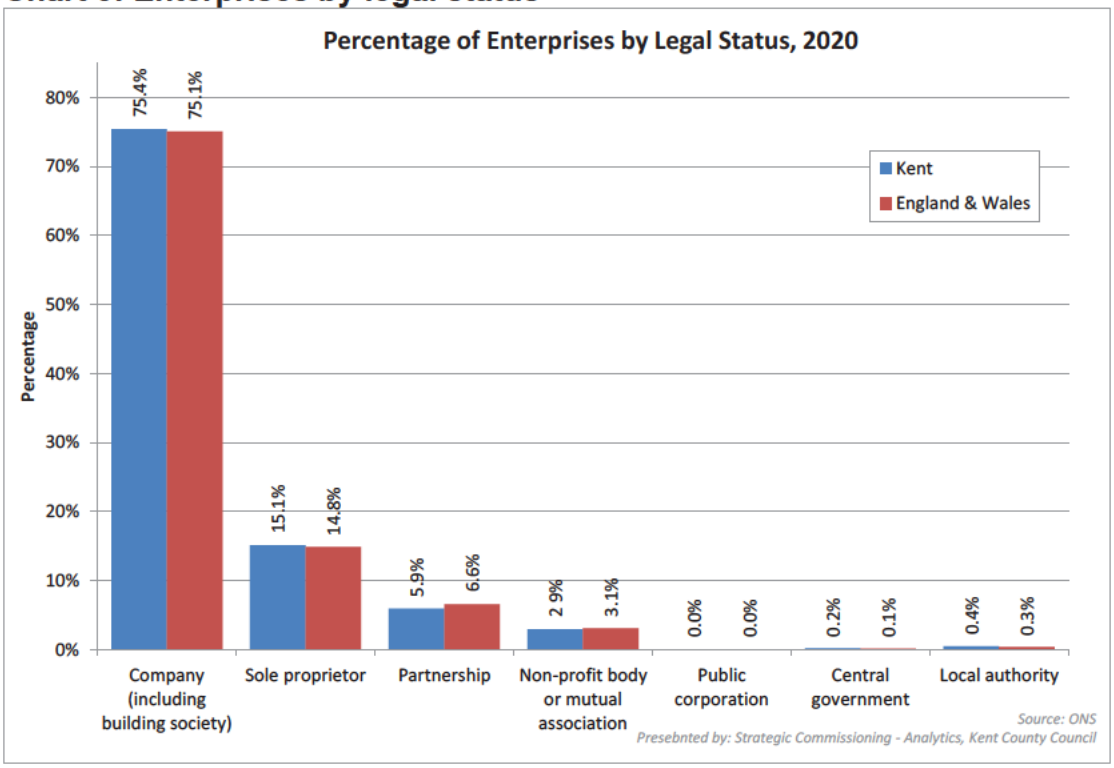
Source: ONS
Presented by: Strategic Commissioning - Analytics, Kent County Council

Enterprise by status

The data also shows the number of enterprises by legal status. The legal status of units is classified by ONS in accordance with National Accounts Sector Classifications. All enterprises engage in financial transactions, paying out and receiving money for reasons such as buying and selling goods and services, paying taxes, or collecting tax revenues. Using information received from Companies House and the administrative sources from HM Revenue & Customs, the National Accounts Sector Classification determines whether a body or enterprise is in the private or public sector, and if public, whether they are government bodies or public corporations, and whether certain transactions count as taxes or service fees.

Chart 3 shows the proportion of enterprises by legal status in Kent compared to England and Wales in 2020.

Chart 3: Enterprises by legal status



The majority of enterprises are private sector companies. In Kent they account for 97.7% of all enterprises, just below England and Wales as a whole (98.3%).

Kent has a slightly higher proportion of sole proprietor enterprises (15.1%) than is seen nationally and a slightly lower proportion of partnerships (5.9%).

Tables 5 and 6 show the legal status of enterprises in Kent local authority districts and Kent as a whole. They also present information at regional and national level for comparison.

Table 5: Number of VAT and/or PAYE based enterprises by legal status

	Private sector				Public sector			
2020	Company (including building society)	Sole proprietor	Partnership	Non-profit body or mutual association	Public corporation	Central government	Local authority	TOTAL
Ashford	4,630	935	505	455	0	10	40	6,575
Canterbury	3,855	935	400	180	0	10	20	5,400
Dartford	4,095	520	120	95	0	15	10	4,855
Dover	2,285	785	345	105	5	10	35	3,570
Folkestone & Hythe	2,605	715	305	95	0	10	20	3,750
Gravesham	3,290	520	145	75	0	5	5	4,045
Maidstone	5,910	1,095	415	180	0	10	35	7,650
Sevenoaks	5,320	875	320	160	0	5	25	6,710
Swale	3,665	875	325	110	0	15	25	5,020
Thanet	2,890	760	285	95	0	10	10	4,050
Tonbridge and Malling	4,835	770	260	150	0	5	30	6,055
Tunbridge Wells	4,890	885	365	170	0	5	15	6,330
Kent	48,270	9,670	3,795	1,875	5	110	280	64,005
Medway	6,975	1,295	360	215	0	20	20	8,885
Kent + Medway	55,245	10,960	4,155	2,095	5	135	300	72,890
South East LEP	135,715	25,230	10,135	4,340	10	340	640	176,410
South East Region	326,790	56,450	21,610	11,635	20	475	1,390	418,370
ENGLAND AND WALES	1,874,040	370,275	163,965	76,240	145	3,560	8,595	2,496,825

Source: ONS

Presented by: Strategic Commissioning - Analytics, Kent County Council

Table 6: Percentage of VAT and/or PAYE based enterprises by legal status

	Employment status							
2020	Company (including building society)	Sole proprietor	Partnership	Non-profit body or mutual association	Public corporation	Central government	Local authority	TOTAL
Ashford	70.4	14.2	7.7	6.9	0.0	0.2	0.6	100
Canterbury	71.4	17.3	7.4	3.3	0.0	0.2	0.4	100
Dartford	84.3	10.7	2.5	2.0	0.0	0.3	0.2	100
Dover	64.0	22.0	9.7	2.9	0.1	0.3	1.0	100
Folkestone & Hythe	69.5	19.1	8.1	2.5	0.0	0.3	0.5	100
Gravesham	81.3	12.9	3.6	1.9	0.0	0.1	0.1	100
Maidstone	77.3	14.3	5.4	2.4	0.0	0.1	0.5	100
Sevenoaks	79.3	13.0	4.8	2.4	0.0	0.1	0.4	100
Swale	73.0	17.4	6.5	2.2	0.0	0.3	0.5	100
Thanet	71.4	18.8	7.0	2.3	0.0	0.2	0.2	100
Tonbridge and Malling	79.9	12.7	4.3	2.5	0.0	0.1	0.5	100
Tunbridge Wells	77.3	14.0	5.8	2.7	0.0	0.1	0.2	100
Kent	75.4	15.1	5.9	2.9	0.0	0.2	0.4	100
Medway	78.5	14.6	4.1	2.4	0.0	0.2	0.2	100
Kent + Medway	75.8	15.0	5.7	2.9	0.0	0.2	0.4	100
South East LEP	76.9	14.3	5.7	2.5	0.0	0.2	0.4	100
South East Region	78.1	13.5	5.2	2.8	0.0	0.1	0.3	100
ENGLAND AND WALES	75.1	14.8	6.6	3.1	0.0	0.1	0.3	100

Source: ONS

Presented by: Strategic Commissioning - Analytics, Kent County Council

Turnover

Turnover figures provided to ONS for the majority of traders is based on VAT returns for a 12 month period. For 2020 this relates to a 12 month period covering the financial year 2019/2020. For other records, in particular members of VAT group registrations, turnover may relate to an earlier period or survey data.

For traders who have registered more recently, turnover represents the estimate made by traders at the time of registration.

The turnover figures on the register generally exclude VAT but include other taxes, such as the revenue duties on alcoholic drinks and tobacco. They represent total UK turnover, including exempt and zero-rated supplies.

Turnover bands shown in the analyses relate to the latest year for which information is available. Traders may be registered below the VAT threshold or may choose not to de-register should their turnover fall below the threshold.

Table 7 shows the VAT registration thresholds since 2004/05.

Table 7 - VAT registration thresholds

Operative dates	VAT Registration Threshold
1 Apr 2004 - 31 Mar 2005	£58,000
1 Apr 2005 - 31 Mar 2006	£60,000
1 Apr 2006 - 31 Mar 2007	£61,000
1 Apr 2007 - 31 Mar 2008	£64,000
1 Apr 2008 - 31 Mar 2009	£67,000
1 Apr 2009 - 31 Mar 2010	£68,000
1 Apr 2010 - 31 Mar 2011	£70,000
1 Apr 2011 - 31 Mar 2012	£73,000
1 Apr 2012 - 31 Mar 2013	£77,000
1 Apr 2013 - 31 Mar 2014	£79,000
1 Apr 2014 - 31 Mar 2015	£81,000
1 Apr 2015 - 31 March 2016	£82,000
1 Apr 2016 - 31 March 2017	£83,000
1 Apr 2017 - 31 March 2018	£85,000
1 Apr 2018 - 31 March 2019	£85,000
1 Apr 2019 onwards	£85,000

Source: HMRC

A higher proportion of enterprises in Kent (64.0%) have a turnover of £100k and above than is seen nationally (62.5%).

Tables 8 and 9 present the turnover data for Kent local authority districts and Kent as a whole. Regional and national figures are also presented for comparison.

Chart 4: Percentage of VAT and/or PAYE enterprises by turnover

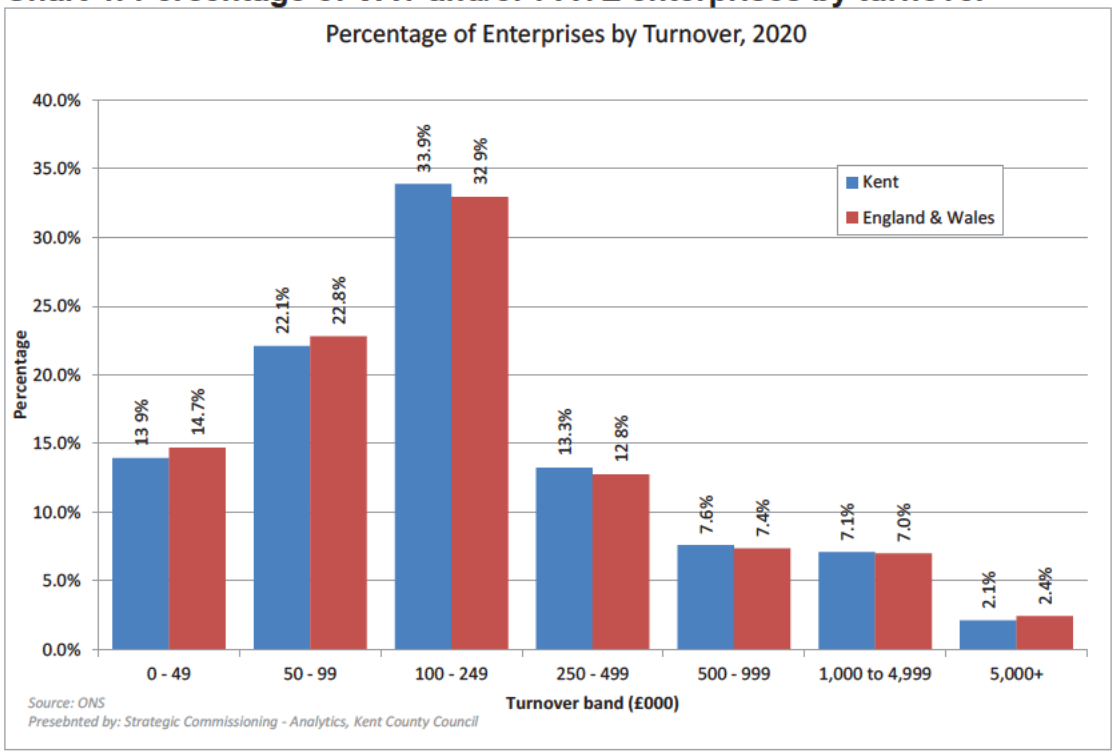


Table 8: Number of VAT and/or PAYE enterprises by turnover

	Turnover size (£ thousand)							
2020	0 to 49	50 to 99	100 to 199	200 to 499	500 to 999	1,000 to 4,999	5,000+	TOTAL
Ashford	1,265	1,310	1,995	790	650	460	100	6,575
Canterbury	700	1,210	1,865	720	430	380	95	5,400
Dartford	580	1,355	1,630	545	265	365	115	4,855
Dover	505	750	1,205	495	290	245	75	3,570
Folkestone & Hythe	550	845	1,285	520	255	250	50	3,750
Gravesham	535	1,055	1,325	550	265	255	60	4,045
Maidstone	1,110	1,695	2,515	1,025	570	550	185	7,650
Sevenoaks	850	1,365	2,360	915	550	480	190	6,710
Swale	685	1,110	1,645	705	390	390	100	5,020
Thanet	465	915	1,475	590	305	240	55	4,050
Tonbridge and Malling	775	1,240	2,090	800	455	485	215	6,055
Tunbridge Wells	905	1,290	2,305	835	440	430	120	6,330
Kent	8,920	14,140	21,695	8,485	4,870	4,535	1,360	64,005
Medway	1,110	2,425	2,820	1,135	665	570	165	8,885
Kent + Medway	10,030	16,565	24,515	9,620	5,530	5,105	1,525	72,890
South East LEP	22,975	40,695	60,340	23,035	13,315	12,385	3,660	176,410
South East Region	60,645	93,400	144,580	51,765	29,655	28,575	9,750	418,370
ENGLAND AND WALES	367,095	569,300	822,570	318,560	183,715	174,965	60,615	2,496,825

Source: ONS

Presented by: Strategic Commissioning - Analytics, Kent County Council

Table 9: Percentage of VAT and/or PAYE enterprises by turnover

	Turnover size (£ thousand)							
2020	0 to 49	50 to 99	100 to 199	200 to 499	500 to 999	1,000 to 4,999	5,000+	TOTAL
Ashford	19.2	19.9	30.3	12.0	9.9	7.0	1.5	100
Canterbury	13.0	22.4	34.5	13.3	8.0	7.0	1.8	100
Dartford	11.9	27.9	33.6	11.2	5.5	7.5	2.4	100
Dover	14.1	21.0	33.8	13.9	8.1	6.9	2.1	100
Gravesham	14.7	22.5	34.3	13.9	6.8	6.7	1.3	100
Maidstone	13.2	26.1	32.8	13.6	6.6	6.3	1.5	100
Sevenoaks	14.5	22.2	32.9	13.4	7.5	7.2	2.4	100
Shepway	12.7	20.3	35.2	13.6	8.2	7.2	2.8	100
Swale	13.6	22.1	32.8	14.0	7.8	7.8	2.0	100
Thanet	11.5	22.6	36.4	14.6	7.5	5.9	1.4	100
Tonbridge and Malling	12.8	20.5	34.5	13.2	7.5	8.0	3.6	100
Tunbridge Wells	14.3	20.4	36.4	13.2	7.0	6.8	1.9	100
Kent	13.9	22.1	33.9	13.3	7.6	7.1	2.1	100
Medway	12.5	27.3	31.7	12.8	7.5	6.4	1.9	100
Kent + Medway	13.8	22.7	33.6	13.2	7.6	7.0	2.1	100
South East LEP	13.0	23.1	34.2	13.1	7.5	7.0	2.1	100
South East Region	14.5	22.3	34.6	12.4	7.1	6.8	2.3	100
ENGLAND AND WALES	14.7	22.8	32.9	12.8	7.4	7.0	2.4	100

Source: ONS
Presented by: Strategic Commissioning - Analytics, Kent County Council

Freight by Aircraft Configuration May 2021 (a)
Comparison with Previous Year
Tonnes

Table 15

	<---------- Passenger Aircraft ---------->			<---------- Cargo Aircraft ---------->			<---------- Total ---------->		
	2021	2020	Percentage Change	2021	2020	Percentage Change	2021	2020	Percentage Change
London Area Airports									
GATWICK	390	3	12900	509	-		899	3	29867
HEATHROW	47 189	16 345	189	70 311	63 751	10	117 500	80 095	47
LUTON	-	-		1 736	2 464	-30	1 736	2 464	-30
STANSTED	16	12	33	22 037	19 829	11	22 053	19 840	11
Total London Area Airports	47 595	16 360	191	94 593	86 043	10	142 188	102 403	39
Other UK Airports									
ABERDEEN	113	121	-7	347	280	24	460	401	15
BARRA	1	-		-	-		1	-	
BELFAST CITY (GEORGE BEST)	3	-		-	-		3	-	
BELFAST INTERNATIONAL	-	-		2 253	1 838	23	2 253	1 838	23
BENBECULA	2	2		-	-		2	2	
BIRMINGHAM	29	15	93	1 200	474	153	1 229	489	151
BOURNEMOUTH	-	-		2 090	-		2 090	-	
CARDIFF WALES	-	-		-	72		-	72	
DONCASTER SHEFFIELD	-	-		1 766	3 069	-42	1 766	3 069	-42
EAST MIDLANDS INTERNATIONAL	-	-		35 214	28 404	24	35 214	28 404	24
EDINBURGH	170	1	16900	1 383	1 202	15	1 553	1 203	29
GLASGOW	8	12	-33	183	54	239	191	66	189
HUMBERSIDE	5	3	67	1	1		6	3	100
ISLAY	7	1	600	-	-		7	1	600
ISLES OF SCILLY (ST.MARYS)	4	1	300	6	4	50	9	5	80
KIRKWALL	2	1	100	-	-		2	1	100
LANDS END (ST JUST)	3	1	200	5	4	25	9	5	80
LIVERPOOL (JOHN LENNON)	1	10	-90	-	-		1	10	-90
MANCHESTER	1 414	749	89	2 557	576	344	3 971	1 325	200
NEWCASTLE	-	-		61	-		61	-	

Freight by Aircraft Configuration May 2021 (a)
Comparison with Previous Year
Tonnes

Table 15

	<---------- Passenger Aircraft ---------->			<---------- Cargo Aircraft ---------->			<---------- Total ---------->		
	2021	2020	Percentage Change	2021	2020	Percentage Change	2021	2020	Percentage Change
NORWICH	8	22	-64	-	-		8	22	-64
PRESTWICK	-	-		1 314	1 069	23	1 314	1 069	23
SCATSTA	-	11		-	-		-	11	
SOUTHAMPTON	2	2		-	-		2	2	
STORNOWAY	12	8	50	-	-		12	9	33
SUMBURGH	14	3	367	-	-		14	3	367
TIREE	1	-		-	-		1	-	
Total Other UK Airports	1 798	963	87	48 382	37 047	31	50 181	38 009	32
Total All Reporting UK Airports	49 394	17 322	185	142 975	123 090	16	192 369	140 412	37
Non UK Reporting Airports									
ALDERNEY	4	4		-	1		4	4	
GUERNSEY	5	3	67	59	40	48	63	44	43
ISLE OF MAN	1	10	-90	-	4		1	14	-93
JERSEY	2	2		82	26	215	85	28	204
Total Non UK Reporting Airports	12	19	-39	141	71	99	153	90	70

(a) Domestic traffic is counted both at the airport of arrival and the airport of departure.
The total domestic plus international traffic is, therefore, only a measure of airport activity.

Air Cargo Market Analysis

May 2021

Air cargo trends higher and outperforms global goods trade

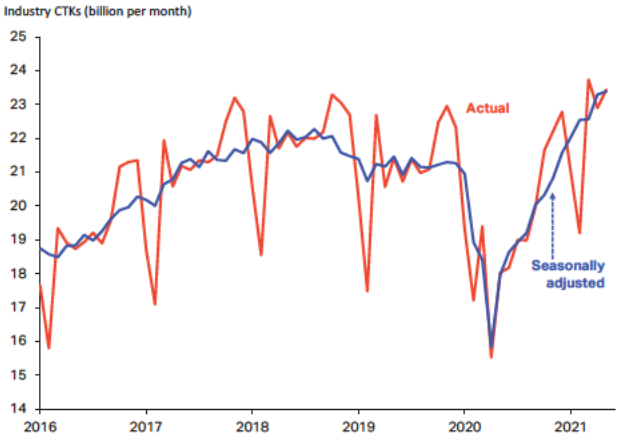
- Air cargo continued to perform well in May 2021, as industry-wide cargo tonne-kilometres (CTKs) rose by 9.4% compared to pre-crisis levels in May 2019. That said, that was a slowdown from the 11.3% growth rate seen in April, with month-on-month growth in seasonally adjusted traffic (0.4%) also decelerating.
- Supply chain conditions and economic activity are supportive of air cargo, helping it post a fifth consecutive month of overperformance versus global goods trade. But there are signs of a stabilization in growth in manufacturing output in some key economies, as consumption shifts from goods to services.
- Air cargo capacity continues to slowly improve despite the lack of international passenger traffic. Having said that, the market remains tight, with no clear decline in cargo load factors.

Global air cargo trended higher in May…

May was another month of strong air cargo performance, but a moderate slowdown was apparent in the pace of growth. Indeed, industry-wide cargo tonne-kilometres (CTKs) increased by 9.4% in May 2021 versus pre-crisis levels in May 2019. This was down from 11.3% in April 2021 versus 2019.

Moreover, seasonally adjusted CTKs – which smooth out seasonal variations in volumes – rose by 0.4% month-on-month in May. This is the 13th consecutive month of rising levels, but it marks a slowdown from the 3.2% gain seen in April **(Chart 1)**.

Chart 1: CTK levels, actual and seasonally adjusted



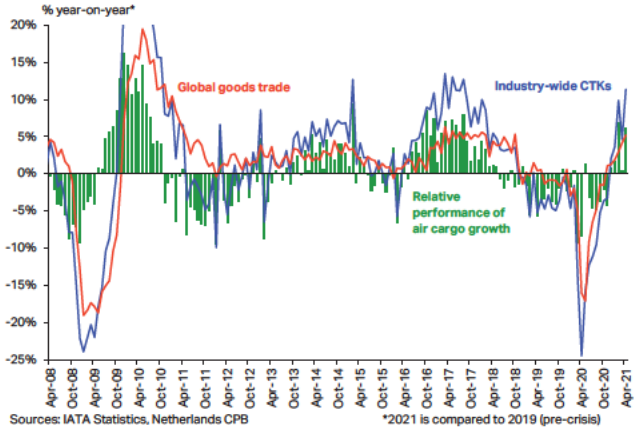
Sources: IATA Economics, IATA Monthly Statistics

Airlines in all regions but Latin America contributed positively to the headline growth rate of 9.4%. Once again, North American airlines supplied the most, at 4.6 percentage points. But it is worth noting that the slowdown in growth was reflected in all the regions except Latin America, where growth performance improved significantly in May.

…and is growing faster than goods trade

The latest data shows global goods trade grew by 5.2% in April 2021 versus April 2019. This is a robust pace, but slower than that of CTKs (11.3%). In fact, this is the fifth consecutive month during which CTKs overperformed overall trade. The last such cycle ended in early 2018, and another period of air cargo overperformance during the post-GFC rebound in 2009-2010 lasted roughly 18 months **(Chart 2)**.

Chart 2: Growth performance of CTKs versus total goods trade



Sources: IATA Statistics, Netherlands CPB *2021 is compared to 2019 (pre-crisis)

Periods during which CTKs grow faster than other modes of transport are typical at the start of economic upturns. They are often explained by inventory restocking cycles, and both cycles usually cover the same periods.

Air cargo market overview - May 2021

To aid understanding, the table includes both % comparisons with pre-crisis 2019 months and 2020 months.

	World share [1]	May 2021 (% ch vs the same month in 2019) CTK	ACTK	CLF (%-pt)[2]	CLF (level)[3]	May 2021 (% year-on-year) CTK	ACTK	CLF (%-pt)[2]	CLF (level)[3]
TOTAL MARKET	***100.0%***	**9.4%**	**-9.7%**	**10.0%**	**57.2%**	**30.0%**	**26.7%**	**1.5%**	**57.2%**
International	*85 5%*	10.4%	-11.1%	12.7%	65.0%	33.3%	18.0%	7.5%	65.0%

[1]% of industry CTKs in 2020 [2]Change in load factor vs same month in 2019 [3]Load factor level

Indeed, air cargo becomes attractive when businesses have low inventories and are faced with rising demand as the economy restarts. In that case, the speed of air cargo provides a strong competitive advantage.

Currently, air cargo also benefits from exceptionally congested container supply chains. Global shipping schedule delays rose significantly, to an extent equivalent to an implied 8.6% loss of capacity on the available fleet in April 2021 (c.2% prior to the pandemic in 2019), according to Sea-Intelligence. Further pressures were added more recently by slowed-down operations in key Chinese ports.

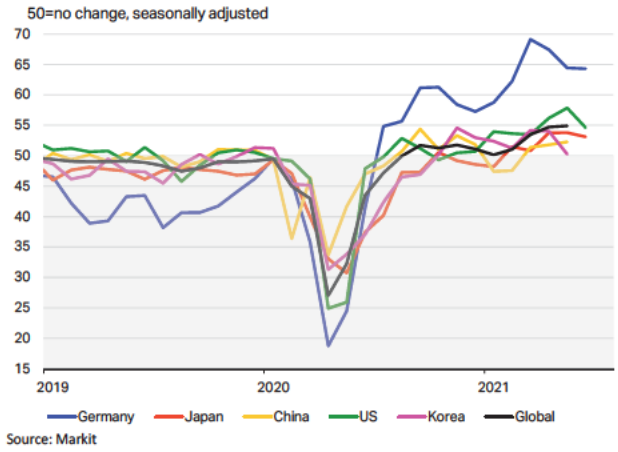
A consequence is that the price of air cargo relative to that of container shipping has fallen significantly, even if air transport has not been exempted from its own disruptions. Per kg of chargeable weight, air cargo was more than 12 times more expensive than ocean shipping prior to the crisis, but this has fallen to a ratio of 6 in May 2021, adding to the competitive advantage of air cargo.

The shift from goods to services may impact air cargo

Most other drivers of air cargo are currently supportive. World trade and industrial production rose by respectively 0.5% and 0.2% month-on-month in April. Purchasing managers indices (PMIs) show that business confidence, manufacturing output and new export orders are growing at a rapid pace in most economies.

Having said that, there are signs of a moderate deterioration in manufacturing PMIs in recent months, notably in emerging markets, while advanced economies in Europe and North America are faring better. In particular, data show activity in key manufacturing economies such as China and South Korea has stabilized somewhat after the initial recovery from the crisis, as illustrated by new export orders **(Chart 3)**.

Chart 3: New export orders component of manufacturing PMI, selected countries



Source: Markit

This is partly explained by the shift in consumption from goods to services, as restaurants, hotels and entertainment reopen, and consumers return outside. Indeed, PMIs for services business activity have improved faster than PMIs for manufacturing output since March-April in both developed and advanced economies as well as at the global level.

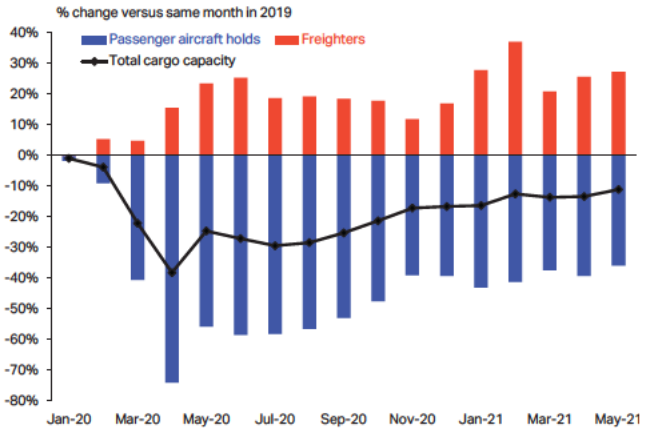
Air cargo capacity continues to improve slowly…

An additional advantage for air cargo is that the capacity crunch – which created significant headwinds for volumes carried – is slowly unwinding. This makes it easier for carriers to meet demand, although the exact magnitude of the impact is unclear.

Indeed, industry-wide available cargo tonne-kilometres (ACTKs) were down 9.7% in May 2021 versus May 2019, after a 10.4% decline in April. SA ACTKs climbed 0.8% month-on-month in May, the fourth consecutive month of improvement.

International ACTKs were down 11.1% compared to pre-crisis values in May 2021, also on a moderate upward trend. Both passenger aircraft and dedicated freighters contributed to improvements in May, although international passenger traffic – and bellyhold capacity – remain limited **(Chart 4)**.

Chart 4: Int'l belly cargo and freighter capacity growth



Source: IATA Economics using data from IATA Monthly Statistics

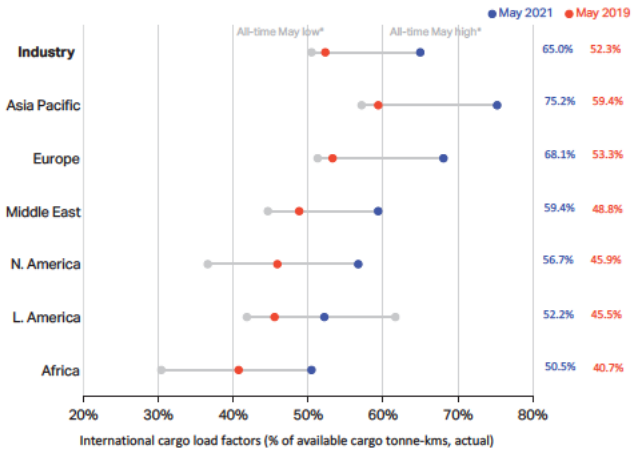
Many airlines continue to operate 'passenger-freighters', which are included in passenger aircraft holds in the above. But those operations are costly and complex to operate, and there is anecdotal evidence some services may be discontinued in the near term, as international long-haul passenger traffic restarts and some exemptions allowing to transport cargo in the main cabin of passenger aircraft are lifted.

… but load factors remain at elevated levels

Cargo load factors continue to trend far above their pre-pandemic levels. In May 2021, the industry-wide cargo load factor was at 57.2%, 10.0 percentage points (ppts) above May 2019. While the SA total load factor is below its peak of more than 60% reached in January, a clear downward trend has yet to emerge.

The international load factor was at 65.0% in May 2021, a new record-high for any month of May. Most regions posted a similar performance **(Chart 5)**. With the SA international load factor only slightly off its all-time high of April 2021 (66.8%), it is too early to say that the market is relaxing.

Chart 5: Cargo load factors by region



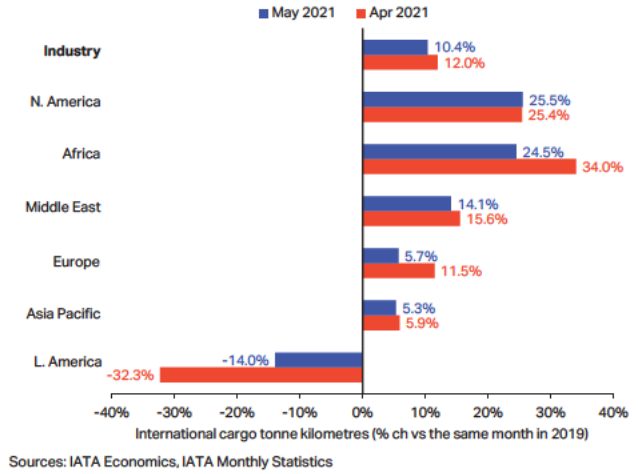
Sources: IATA Economics, IATA Monthly Statistics

CargoIS data show that global air cargo rates including surcharges were up more than 90% in May 2021 versus May 2019, while air cargo revenues rose more than 70% over the same period.

Small slowdown in int'l CTKs growth on many markets

International CTKs grew 10.4% in May 2021 versus the same month in 2019, after a 12.0% growth rate in April. While the contraction eased significantly in Latin America, growth stabilized or moderated in the other regions **(Chart 6)**.

Chart 6: Int'l CTK growth versus the same month in 2019 (airline region of registration basis)

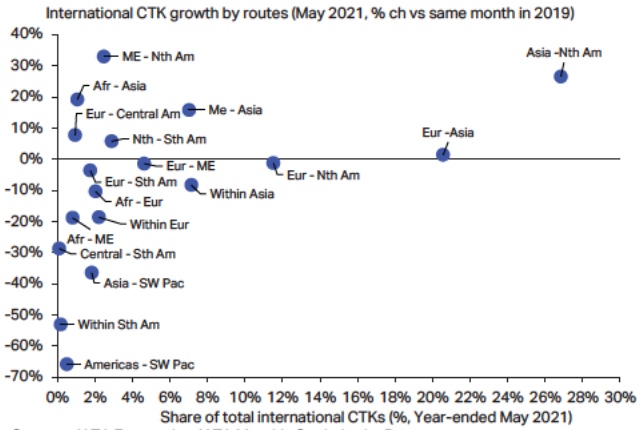


Sources: IATA Economics, IATA Monthly Statistics

Airlines based in North America saw growth in their international CTKs remain stable in May at 25.5%. Drivers such as manufacturing output (PMI of 59.6 in May) are very supportive, despite risks from consumers shifting to the services sector as the pandemic is put under control.

Growth in international CTKs registered by African airlines moderated in May to 24.5%, but that was down from a brisk 34.0%. This was mostly driven by a deceleration in the strong trade flows between Africa and Asia, from 29% vs 2019 in April 2021 to 19% in May 2021 **(Chart 7)**.

Chart 7: International CTKs by route (segment-based)



Sources: IATA Economics, IATA Monthly Statistics by Route

There was a relatively widespread but moderate slowdown in air cargo growth on many important segment-based trade lanes in May. Routes such as Europe-Asia, Middle East-Asia, Within Europe and Within Asia decelerated. This is coherent with PMIs easing off somewhat in certain manufacturing-intensive countries, such as China and Korea, after a V-shaped rebound from the early stages of the crisis.

The consequence is a small slowdown in international CTKs growth for airlines in the Middle East, Europe and Asia Pacific. They grew by respectively 14.1%, 5.7% and 5.3% in May 2021 versus May 2019. Given the strongly supportive supply chain dynamics and still robust manufacturing activity and export orders, a more significant slowdown in the near term appears unlikely.

Finally, the main bright spot for air cargo volumes in May came from Latin America, where international CTKs carried by airlines in the region were down by 14.0% compared to 2019 in May, a marked rebound from the 32.3% fall a month earlier. SA volumes also rose strongly in May.

In recent months, traffic carried by airlines in the region had been low, as those carriers lost market shares to airlines in North America and Europe. With some of the largest carriers in Latin America still restructuring, it is not clear if May's rebound will be sustained.

IATA Economics
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7th July 2021

Air cargo market detail - May 2021

To aid understanding, the table includes both % comparisons with pre-crisis 2019 months and 2020 months.

	World share [1]	May 2021 (% ch vs the same month in 2019) CTK	ACTK	CLF (%-pt)[2]	CLF (level)[3]	May 2021 (% year-on-year) CTK	ACTK	CLF (%-pt)[2]	CLF (level)[3]
TOTAL MARKET	*100.0%*	**9.4%**	**-9.7%**	**10.0%**	**57.2%**	**30.0%**	**26.7%**	**1.5%**	**57.2%**
Africa	*2.0%*	23.1%	-1.8%	10.1%	50.2%	30.2%	4.9%	9.8%	50.2%
Asia Pacific	*32.6%*	2.7%	-15.7%	11.6%	64.6%	28.5%	29.0%	-0.2%	64.6%
Europe	*22.3%*	6.0%	-16.9%	14.1%	65.6%	37.6%	24.6%	6.2%	65.6%
Latin America	*2.4%*	-14.3%	-23.3%	4.4%	42.3%	19.2%	44.1%	-8.8%	42.3%
Middle East	*13.0%*	13.9%	-7.5%	11.1%	58.9%	47.9%	21.3%	10.6%	58.9%
North America	*27.8%*	21.6%	2.0%	7.6%	46.9%	19.9%	28.7%	-3.4%	46.9%
International	*85.5%*	**10.4%**	**-11.1%**	**12.7%**	**65.0%**	**33.3%**	**18.0%**	**7.5%**	**65.0%**
Africa	*2.0%*	24.5%	0.5%	9.7%	50.5%	30.2%	4.3%	10.0%	50.5%
Asia Pacific	*29.1%*	5.3%	-16.9%	15.9%	75.2%	28.3%	14.6%	8.0%	75.2%
Europe	*21.9%*	5.7%	-17.3%	14.8%	68.1%	37.5%	20.1%	8.6%	68.1%
Latin America	*2.0%*	-14.0%	-24.9%	6.6%	52.2%	10.1%	12.4%	-1.1%	52.2%
Middle East	*13.0%*	14.1%	-6.1%	10.5%	59.4%	47.7%	20.4%	11.0%	59.4%
North America	*17.5%*	25.5%	1.6%	10.8%	56.7%	30.6%	21.2%	4.1%	56.7%

[1]% of industry CTKs in 2020 [2]Change in load factor vs same month in 2019 [3]Load factor level

Note the total industry and regional growth rates are based on a constant sample of airlines combining reported data and estimates for missing observations. Airline traffic is allocated according to the region in which the carrier is registered; it should not be considered as regional traffic. Historical statistics are subject to revision.

Air Cargo Market Analysis

June 2021

Air cargo remains dynamic and further growth is likely ahead

- June 2021 was another month of strong air cargo performance, as industry-wide cargo tonne-kilometres (CTKs) grew 9.9% compared to June 2019 and air cargo drivers point to further growth ahead.
- Supply chain conditions remain favourable, with low inventories-to-sales ratio, resilient demand for goods and more affordable air cargo compared to container shipping, all combining to make air cargo a competitive mode of transport. Besides, the shift of consumer spending from goods to services has so far not been as strong as feared.
- Africa and North America remain the strongest regions. Airlines in all regions but Latin America have posted growth in CTKs in recent months.


BOEING
WORLD AIR CARGO
FORECAST 2020–2039

TABLE OF CONTENTS

The Boeing Company issues the biennial World Air Cargo Forecast (WACF) to provide a comprehensive, up-to-date overview of the air cargo industry. The forecast summarizes the world's major air trade markets, identifies major trends, and presents forecasts for the future performance and development of markets, as well as for the world freighter airplane fleet.

This document would not be possible without the efforts of several contributors. The Boeing World Air Cargo Forecast 2020 production team included the Boeing Content Studio and our colleagues in the Market Analysis Group. We extend special thanks to Divya Gupta, who managed all aspects of the WACF update. We also give special thanks to Adin Herzog, who, along with Wendy Moore, Kitt Forsyth-Burton, Aaron Tayler and Sarah Nizolek, thoroughly updated our Airline Cargo Traffic Database (ACTD), which includes historical traffic data for nearly 850 airlines. Thank you also to Wendy Moore, who researched and modeled the air freight yield curves in the Air Cargo Industry Overview; Kimberly Tornabene, who analyzed and compiled historical airline cargo revenues; Katrina Krebs, who developed the North America chapter; Jacqueline Kaye, who authored the Latin America and Europe chapter; Staci Strickland, who authored the Domestic China and Latin America and North America chapters; Allison Corrigan, who authored the South Asia chapter; Amine Benkirane, who authored the Middle East chapter; Carl Allen, who authored the East Asia and North America chapter; Don Lim, who authored the Europe and East Asia chapter; Jayden Lee, who developed the insights and analysis behind the Intra–East Asia and Oceania chapter; and David Franson, who led our freighter fleet forecast effort. Lastly, we would like to acknowledge the professional work accomplished by our summer interns, Kaitlyn Elgart and Portia Uwase Zuba, who assisted in the research and authoring of the Intra–Europe and Europe and North America chapters, respectively.

The next update to the WACF will appear in fourth quarter 2022. The authors welcome any questions or comments. All queries and suggestions should be directed to the following:

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EXECUTIVE SUMMARY

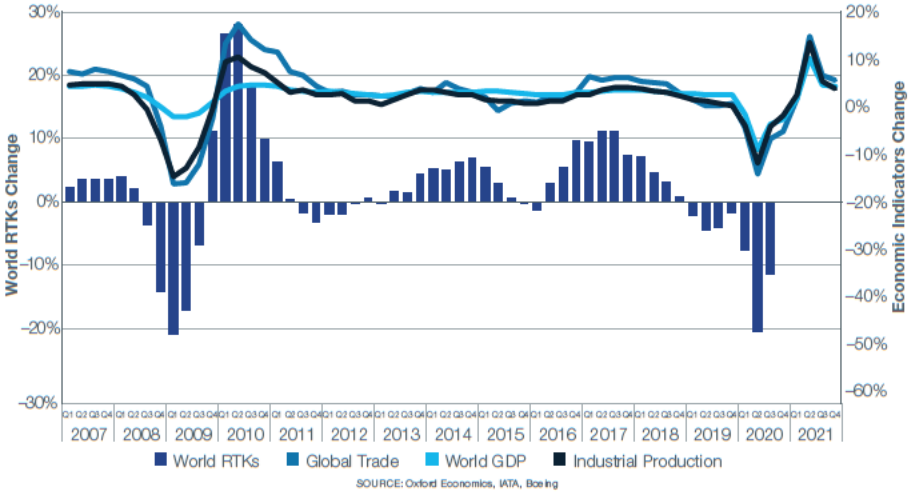
Air cargo markets disrupted in 2020 by COVID-19 pandemic

As the new decade began, the air cargo market was poised to benefit from improvement in the world economy.

This followed a weak 2019, in which the effects of tariffs, tepid world economic growth and weakened industrial production resulted in air cargo traffic decreasing by 3%.

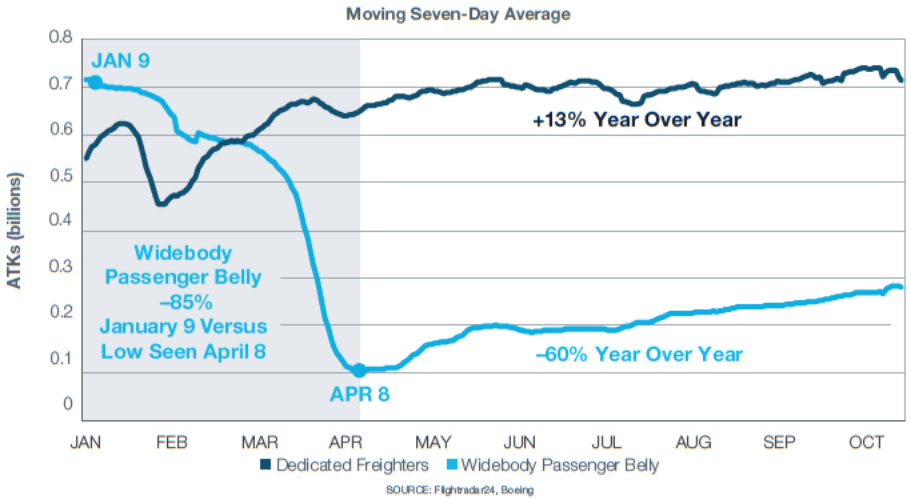
As COVID-19 quickly spread to all corners of the world early this year, the impact from the loss of long-haul passenger belly capacity from widebody fleets created a significant air cargo capacity shortfall. Passenger belly cargo capacity typically accounts for 54% of the world air cargo capacity. Freighter operators have responded by operating above normal utilization levels to fill the lower cargo hold shortfall.

Anticipated Economic Recovery Expected to Bolster Air Cargo Traffic Growth



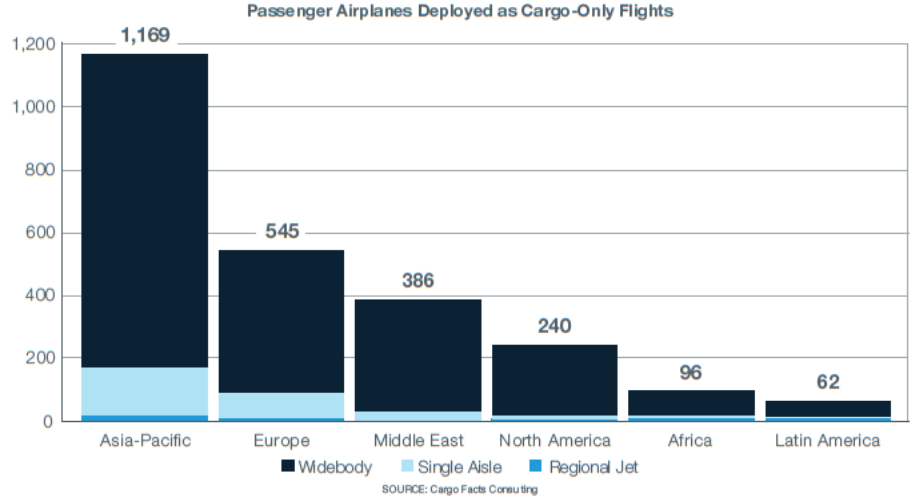
SOURCE: Oxford Economics, IATA, Boeing

Major Reduction of Passenger Service Is Creating High Demand for Freighter Capacity



SOURCE: Flightradar24, Boeing

Widebodies Account for Nearly 90% of Passenger Airplanes Used for Cargo-Only Flights



SOURCE: Cargo Facts Consulting

In addition, the urgent need to meet demands for transporting medical supplies to all regions in response to COVID-19 created a unique and unprecedented environment. The decline in air cargo capacity plus urgent demand for medical supplies led to a spike in yields to high double-digit levels in second quarter 2020. With these market conditions, freighter operators have been in a unique position to meet market demands that require a high level of speed, reliability and security, as only air cargo can do.

With high air cargo yields and greatly reduced long-haul international networks, conditions have been favorable for many airlines to use some of their passenger widebody fleets for cargo-only operations to generate much-needed cash flow. These "preighters" have taken up some of the capacity shortfall and, even in some cases, have generated quarterly profits for carriers despite minimal passenger operations. As of the end of September, nearly 200 airlines have operated 2,500 passenger airplanes exclusively for cargo operations.

Through September, air cargo traffic was down 12%, rivaling declines in past recessions. In a normal year, this would translate to poor financial performance for air cargo operators. However, in 2020 almost a quarter of air cargo capacity has been lost. As a result of the constrained air cargo capacity, yields were up over 40% and overall air cargo industry revenues were up 16%.

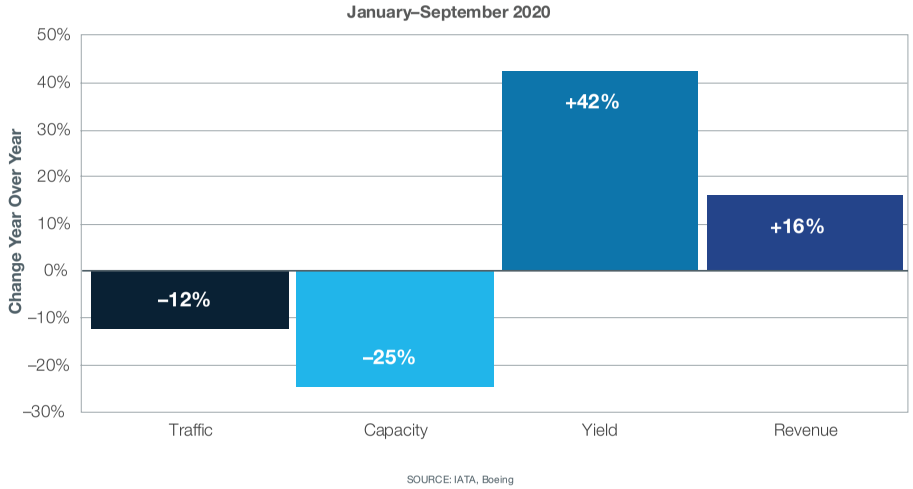
The 2020 World Air Cargo Forecast incorporates the near-term disruption to air cargo markets but does not assume the current dynamics of constrained widebody passenger belly capacity will continue into the long term. Long-haul widebody passenger traffic will return in the coming years, and air cargo will then reflect market dynamics much closer to what we have seen in the years prior to the COVID-19 disruption.

COVID-19 pandemic accelerating express and e-commerce market

In contrast to disrupted passenger markets, the higher-than-market-average growth seen in express markets over the last decade has increased during the COVID-19 pandemic. E-commerce, which was already growing at double-digit rates prior to the pandemic, has accelerated its impact on the air cargo market. Express carriers have fared well as a result of the market turmoil in 2020. Through the end of September, they had increased their traffic by 14%. All-cargo carriers, at 6%, are the only other air cargo business model to show growth. This forecast incorporates this continued structural growth and surge in demand that we have observed because of COVID-19.

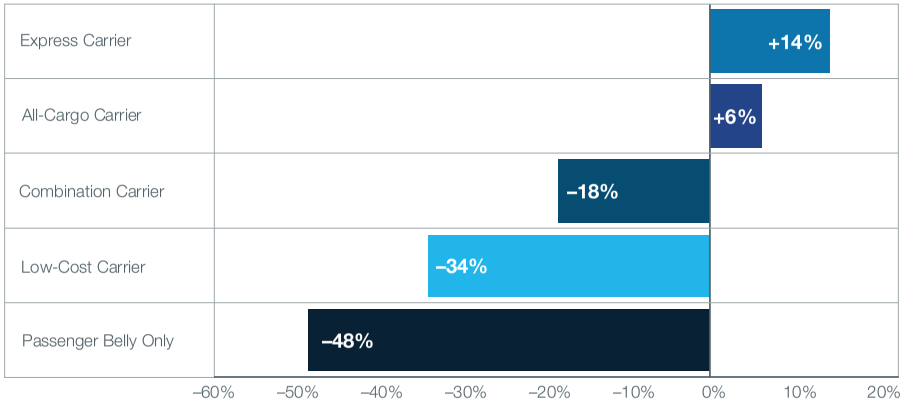
Another consideration of structural shifts affecting air cargo growth, and a topic of intense debate in recent years, is the trajectory

Constrained Cargo Capacity Is Driving Higher Yields and Revenue



SOURCE: IATA, Boeing

Dedicated Cargo Carriers Lead in Challenging Market Conditions



SOURCE: IATA, Boeing

of globalization on global supply chains. Geopolitical tensions and trade disputes have percolated and increased in many major economies around the world. Air cargo is highly sensitive to global industrial production output and worldwide manufacturing supply chains.

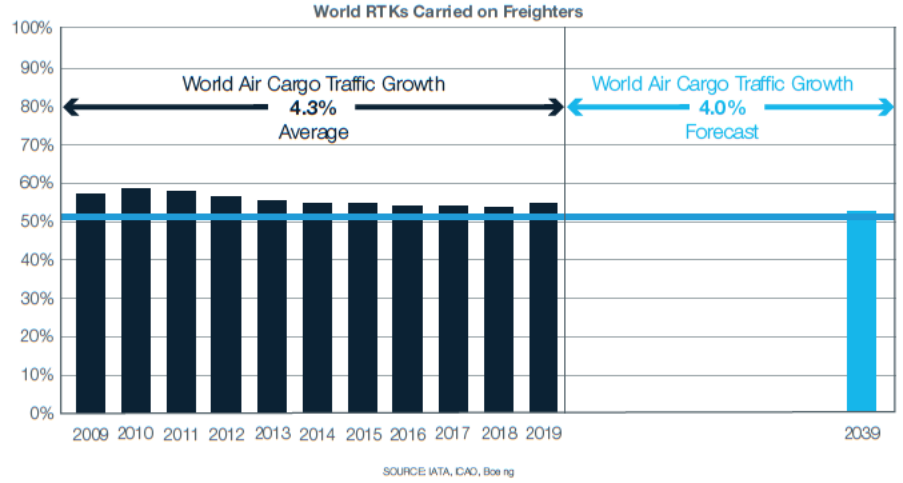
However, even prior to the COVID-19 pandemic, some shifting of supply chains was already occurring. China, the location of choice for many Western manufacturing companies during the past 20 years, had slowly lost its low-labor-cost advantage relative to other developing countries. As a consequence, some manufacturing has moved away from China to other Asia-Pacific countries in the past few years. However, the movement of supply chains, depending on the complexity of the product, can take years to implement. The magnitude of air cargo imports from China to the United States, for example, is nine times that of the next Asia-Pacific country. This further highlights the current dominance of China as a manufacturing source and supplier. Early indications show trends toward diversification of supply chains, rather than onshoring, to lessen risk.

Developments in other modes of freight transport may affect air cargo industry growth. The maritime industry, which transports almost 90% of world merchandise trade, has experienced significant market disruption over the past decade. Several years of overcapacity and weakening trade led to collapsing yields. Ultra-large containerships (those vessels with more than 15,000 20-foot equivalent units of capacity) introduced by the major shipping operators contributed to the overcapacity as trade slowed. In the past five years, the industry has seen consolidation of players, reduced capacity growth and firming yields. While normally the maritime sector is not a competitor to air cargo, the changing nature of container shipping may benefit the air cargo sector. Containership operator capacity discipline, plus manufacturers seeking to de-risk their supply base and disperse manufacturing sites into lower-cost Asia-Pacific regions, may lead to the increased use of air cargo.

Importance of main deck freighters

In addition to the long-term trend of dedicated freighters carrying more than 50% of global air cargo traffic despite growing widebody passenger fleets, the COVID-19 pandemic has highlighted the importance of main-deck freighters in our global air transportation system. While increasingly capable passenger widebody airplanes have helped the air cargo industry grow during the past decade, dedicated freighters are anticipated to continue to comprise at least 50% of the world air cargo traffic carried. There are several key reasons for freighter preference in air cargo flows: 1) Most passenger belly capacity does not serve key cargo trade routes; 2) twin-aisle passenger schedules often do not meet shipper timing needs; 3) freight forwarders prefer palletized capacity, which is not available on single-aisle aircraft; 4) passenger bellies cannot serve hazardous materials and project cargo, a key sector in air cargo flows; and 5) payload-range considerations on passenger airplanes may limit cargo carriage, which decreases the likelihood that cargo will arrive at its destination on time.

Freighters Will Continue to Carry Over 50% of World Air Cargo Traffic



SOURCE: IATA, ICAO, Boeing

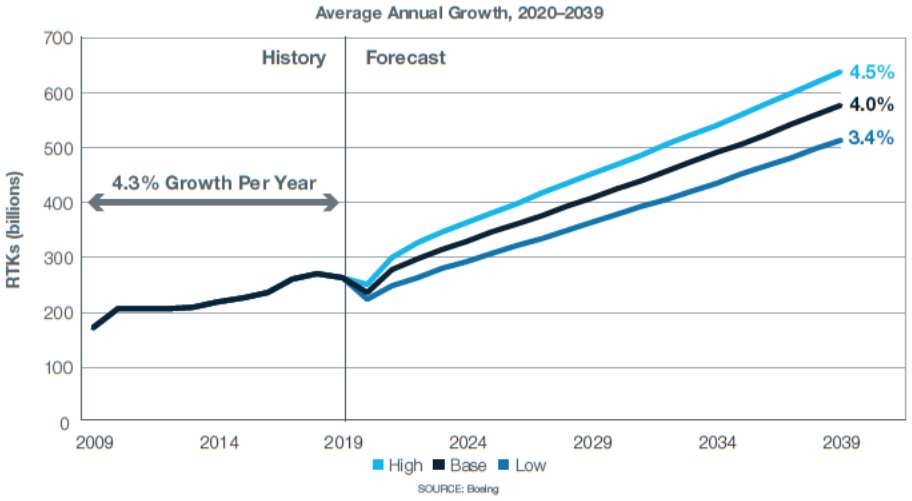
World air cargo traffic growth outlook

World air cargo traffic is forecast to grow at 4.0% per year over the next 20 years.

In terms of revenue tonne-kilometer (RTK) growth, air freight, including express traffic, is projected to grow at 4.1% while airmail will grow at a slower pace, averaging 1.7% annual growth through 2039. Overall, world air cargo traffic will more than double over the next 20 years, expanding from 264 billion RTKs in 2019 to 578 billion RTKs in 2039.

The Asia-Pacific region will continue to lead the world in average annual air cargo growth, with domestic China and intra–East Asia and Oceania markets expanding 5.8% and 4.9% per year, respectively. Supported by faster-growing economies and growing middle classes, the East Asia–North America and Europe–East Asia markets will grow slightly faster than the world average growth rate. In the more established and mature trade flow between North America and Europe, growth will be below the world average growth rate.

World Air Cargo Traffic Will Grow 4.0% Per Year Over the Next 20 Years



Air Cargo Growth Rates Vary by Region

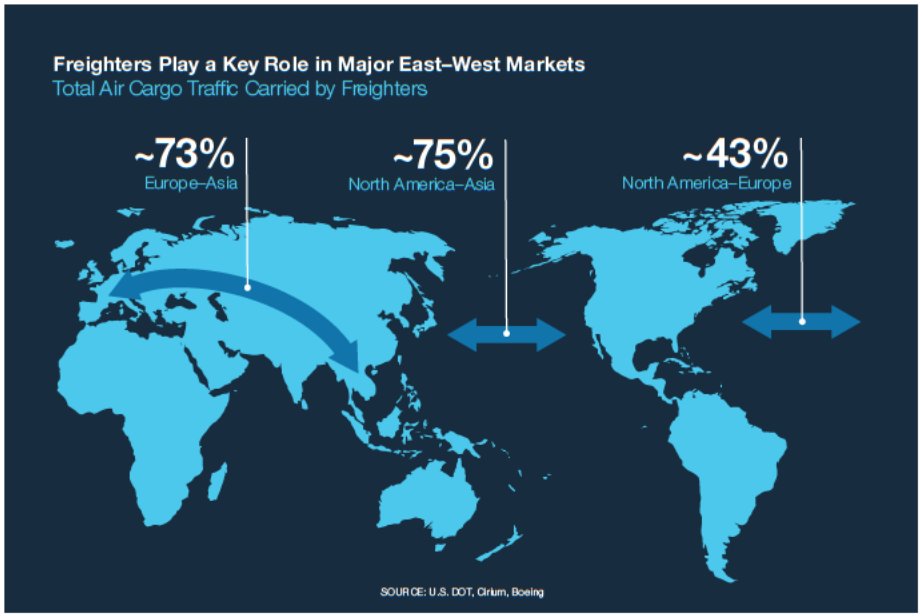
Region	History 2009–2019	2019	Forecast 2020–2039
World	4.3%	–3.0%	4.0%
East Asia–North America	3.1%	–7.5%	4.3%
Europe–East Asia	4.2%	–3.2%	4.4%
Intra–East Asia and Oceania	5.2%	–5.4%	4.9%
Europe–North America	3.4%	–4.7%	2.3%
North America	3.3%	3.2%	2.6%
Domestic China	4.9%	3.5%	5.8%
Latin America–Europe	3.9%	–1.2%	4.1%
Latin America–North America	2.1%	–3.6%	2.6%
Africa–Europe	2.8%	4.0%	3.3%
South Asia–Europe	4.1%	3.7%	4.3%
Middle East–Europe	4.8%	10.6%	2.4%
Intra-Europe	4.8%	6.0%	2.3%

SOURCE: IATA, ICAO, ACI, AAPA, U.S. DOT, U.S. DOC, Eurostat, IHS Markit GTA, CAAC, AAI, DGCA, FAVT, Annual Reports, Airport Statistics, Boeing

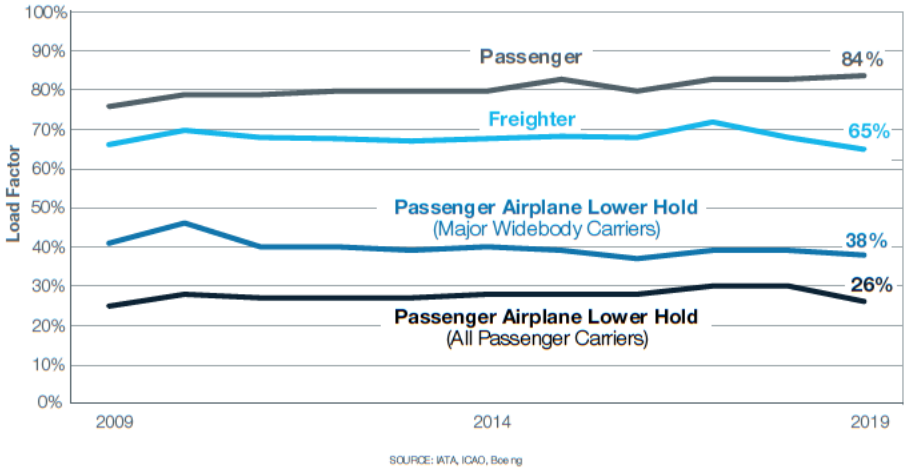
Freighters and passenger lower-hold dynamics

There are two options for air cargo transport — dedicated freighters and passenger aircraft lower holds (also referred to as passenger belly capacity) — and each offers unique advantages. Freighters are particularly well suited for transporting high-value goods because they provide highly controlled transport, direct routing, reliability and unique capacity considerations (volume, weight, hazardous materials and dimensions). These distinct advantages allow freighter operators to offer a higher value of service and generate nearly 90% of the total air cargo industry revenue. With the introduction of a new generation of widebody passenger airplanes with larger lower-hold capacity, more airlines are combining cargo transport with passenger operation to capitalize on additional revenue opportunities. Belly cargo space offers unique value on non-cargo routes by feeding dedicated freighter networks and providing new business opportunities for integrators. However, while lower-hold capacity in widebody airplanes serving long-haul missions has increased in recent years, several parameters can limit the cargo operations in passenger aircraft. The reduced height of the lower deck can limit volumes. Different security standards and regulations may restrict commodities that can be shipped in passenger airplane lower holds. From a network standpoint, freighter routes are highly concentrated on relatively few trade lanes, especially in the world's two largest trade routes, East Asia–North America and Europe–East Asia.

In contrast, passenger networks are much broader and often include destinations where cargo demand is minimal. This difference in passenger and cargo traffic distribution explains the considerable load factor difference in belly space and freighters, which average approximately 30% and 75%, respectively over the last decade. In addition, range restrictions on fully loaded passenger aircraft and limited passenger service to major cargo airports make freighter operations essential. For these structural reasons, freighters are forecast to carry more than half of the world's air cargo for the next 20 years.

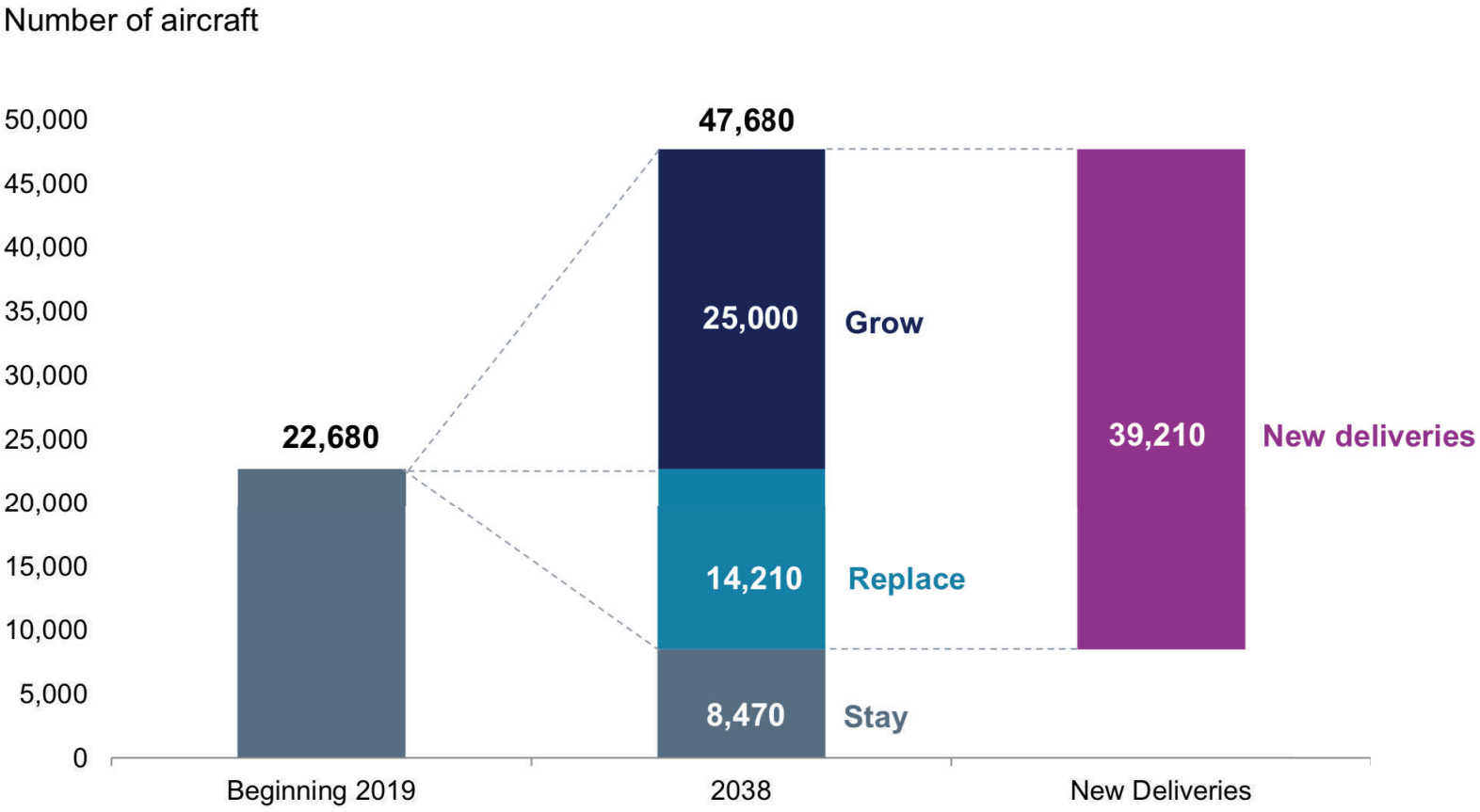


Freighter Cargo Load Factors Double That of Passenger Lower Holds



SOURCE: IATA, ICAO, Boeing

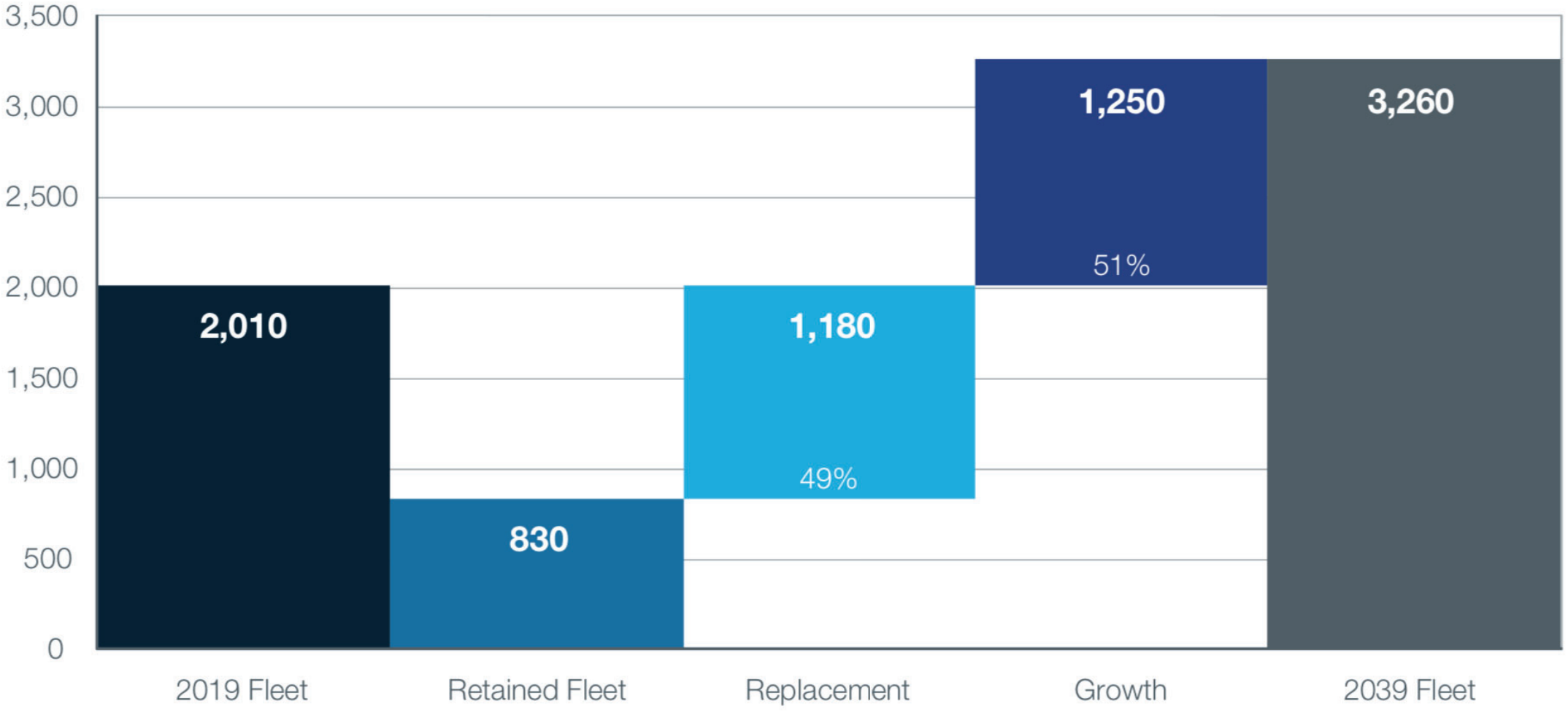
36% of new deliveries for replacement, 64% for growth



Notes: Passenger aircraft (≥100seats), Freighters (>10t) | Rounded figures to nearest 10
Source: Airbus GMF 2019

AIRBUS

2,430 Freighters Required for Growth and Replacement



SOURCE: Boeing

Airlines Will Need Fewer Wide-Body Aircraft Post-Pandemic

When people think of airplanes and airl nes the image that typically comes to mind s a large wide-body aircraft traveling long d stances around the globe. The original Boeing 747 transformed the way the world was able to connect followed by safe and stable two-eng ne wide-bodies. Today the Boe ng 777 and Airbus A350 are common worldwide.

Yet despite their outsized image wide-body aircraft are a cha lenge for airlines because of their size and costs to acquire and operate. Few markets provide year-round demand that can fill their large cabins requiring that connect ng hubs br ng in more traffic from beyond dest nations. In his new demand environment due to the pandemic these aircraft are uniquely cha lenged and likely will become a smaller proportion of a l aircraft lown over the next 10 years.

Very Difficult For Smaller Airlines

Smaller airlines that have tried to use w de-body a rcraft have generally been unsuccessful. Years ago airlines like Amer ca West and People Express started their downfa ls when they brought in a wide body to extend their route networks. More recently WOW A rlines has shuttered largely because of the pressures brought on from the A330 and Norwegian A rlines has finally abandoned their long-haul strategy after rarely breaking even before the pandemic.

Things that sma ler airl nes often greatly under-estimate are the disruption costs caused by th s kind of airplane the over-pr oritization of resources and attention to it and the massive losses possible during weaker travel t mes. They become enamored with the network growth and perceived status th s kind of plane brings and rationalize all kinds of things to keep it flying.

Wide Body Relative Risk

The reason wide body aircra t are so d fficult for small airlines and still challenging for large airlines is their relative risk. A narrow-body airplane can make money in good times and lose money in bad t mes but the swing in e ther direction is not so great. A wide-body can make more money in good times of course because they can carry more people. But they also can lose a lot more in weaker t mes because of their h gh monthly ownersh p costs fuel and labor requirements. This relat ve profitability is outlined in th s graphic

The U S Air Force Just Admitted The F-35 Stealth Fighter Has Failed

United Airlines Won't Negotiate Over Catering Workers' Future, Union Charges

The F-111 Was The 'F-35 Of Its Day,' But Its Failure Was A Boon To U S Air Power

ravel Seasonality

Even without the pandem c the biggest volumes of a r travel are highly seasonal. Airlines often have to adjust capacity by season in order to address this and there are t mes of year in most geograph es where supply far outstrips demand. With a narrow-body aircraft there are often alternative opportunities to move the aircraft during low-season travel times. These may not be as profitable as the high-season opportunities but could cover the a rcraft s lease rent and the fl ght variable costs. Scheduled this way a narrow-body aircraft can be prof table in most months of the year. By comparison a w de-body because of its s ze has more problems in low-season per ods because there are fewer opportunities to redeploy. This combines with h gher f xed costs of ownership to create a financial mismatch. Consider this a new Airbus A321 or Boeing 737 might be leased for $300 000 per month rent. An Airbus A330 or Boeing 777 would have monthly rent two to four times this amount. Thus when the plane can t be filled the airline almost always loses money.

he Need For Hubs

Connecting hubs work by effectively growing a local market by br nging in people from other locations. Delta can launch a long-haul fl ght from Atlanta and fi l the plane not only with people from Atlanta but also with people from dozens of other cities that arrive n time to meet the plane in Atlanta. Without those connect ons the local demand may not be big enough to fi l the large plane n most weeks of the year. This gets even less risky with connections at both ends which is why all arose have been good for larger airlines. Delta can br ng in dozens of cit es to meet ts Atlanta flight and when the plane lands n Amsterdam customers have easy connection options to more cities on KLM.

There are two financial challenges with this hub structure though. First the flights that bring customers to he hub must be profitable on the r own. W thout this the long-haul fl ght may be profitable because it is full but the losses incurred to f l it would be prohibitive. This is often why long-haul fl ghts from smaller or secondary hubs have not generally been successful. Second the nature of the hub requires a big build up of people and a lot of facilit es to accomodate a lot of planes n one place for a short per od of time. These "banks" of fl ghts are rela vely act vity but when all the planes leave there s not much to do until the next bank. This makes for higher costs because of the lower util zation of people and fac lities.

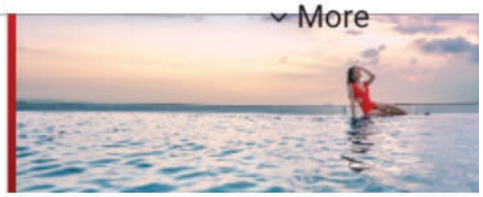
Fewer Wide Body Aircraft Are Needed

Smaller narrow-body aircraft with longer range like the Airbus A321LR (Long Range) have made it possible for some longer fl ghts with fewer connections at either end or even flying point-to-point with no connections. Delta has used older Boeing 757s in this way as well. The efficiency of these a rcraft reduce the need for as many wide-body aircraft.

Addit onally any reasonable scenar o of air demand recovery recognizes that long-haul travel is the least certain to return quickly or completely. This means that most true point-to-point flights wi l not return and a rlines like IAG s Level will likely not succeed. With fl ghts only operating to and from larger connect ng hubs there are fewer needs for wide-body aircraft.

The net result s that narrow-body aircraft which have always far outsold wide-body a rcraft in numbers w ll become even more dominant. Manufacturers suppliers MROs and everyone in the industry should be plann ng for a world with fewer wide-body aircraft.

Follow me on LinkedIn. Check out my website.



AIR FEATURES GLOBAL

Airlines will be forced to aim at long and thin routes

By **Joe Cusmano** — On **Jun 7, 2021**
Guest Writer

A trend among airlines of phasing out four-engine widebody aircraft in favour of smaller, more fuel-efficient two-engine aircraft, including even narrow bodies, has accelerated.

With business travel and long-haul international flying expected to be the slowest to recover from the pandemic, airlines are looking to utilise lower-capacity aircraft to operate long-haul routes, and many are permanently parking

With business travel and long-haul international flying expected to be the slowest to recover from the pandemic, airlines are looking to utilise lower-capacity aircraft to operate long-haul routes, and many are permanently parking their Airbus A380s and Boeing 747s. The new star among next-generation "long-haul" aircraft is the Airbus A321XLR, which will offer a range of 4,700 nm, the longest range ever for a single-aisle aircraft.

Assembly of the first flight-test A321XLR has just started, with the aim of deliveries commencing in the second half of 2023. The order book for the A321XLR is robust, with more than 20 customers—ranging from lessors to mainline airlines to LCCs—ordering 450 of the type in total. The aircraft is expected to open new route possibilities for airlines in much the same way the Boeing 787 widebody made new city pairs possible when it was launched.

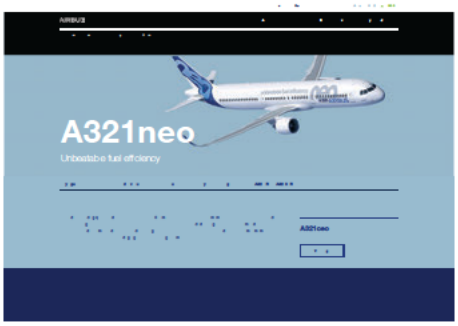
Airbus is not stretching its A321LR or modifying the aircraft's Pratt & Whitney GTF engines—it is adding range but keeping the same ceiling on passenger load (around 220). The XLR's added 700 nautical miles in range over the LR (Long Range) is made possible by an extra fuel tank in the rear centre of the aircraft. It is a telling sign of where the marketplace stands that airline are enamoured with an aircraft that allows for carrying more fuel, but not more passengers.

Airbus has said that airlines operating the A321XLR will be able to fly "long, thin routes" such as India to Europe or China to Australia, or transatlantic routes beyond the traditional hub-to-hub flights. Among the US-based routes, Airbus envisions the A321XLR on routes such as New York JFK-Hamburg, Washington Dulles-Lima, Orlando-Santiago de Chile, Chicago O'Hare-Milan, Houston Intercontinental-Reykjavik, Boston-Casablanca, JFK-Rome, and Miami-London.

New York-based JetBlue Airways, which has just taken delivery of its first A321LR to be used on New York JFK-London flights, has said it will use the XLR to fly nonstop from New York to continental European destinations such as Madrid.

The pandemic has driven both Airbus and Boeing to slash production on their popular twin-engine widebodies. Airlines are still ordering them but in smaller numbers.

Lufthansa, for example, in early May placed an order for five A350-900s and five 787-9s. As a result, Airbus has cut monthly production for the A350 from 10 to under five aircraft per month, while Boeing has lowered 787 productions from 14 aircraft per month to just five per month.



Dimensions

Capacity

Performance

Increased revenue potential

Focus on commonality

New Engine Option

A321LR: Longer range on single-aisle routes

A321XLR: Efficiency and extra-long range

A321XLR: Xtending the A321neo success

A321neo media gallery

Reduction in air cargo ATMs at Stansted

Background

As a result of the granting of Planning Permission following appeal, passenger throughput has risen to 43mppa and the maximum Cargo ATMs has fallen from 20,500 Cargo ATMs per year to 16,000.

1) **Minimum reduction in Cargo ATMs**

Assuming there is no significant growth in passenger ATMs to constrain Cargo ATMs:

20,500 to 16,000 = 22% reduction in Cargo ATMs

2) **Midpoint reduction in Cargo ATMs**

Assuming the Passenger ATMs rise to the level predicted by MAG of 253,000[1] and if MAG can reduce Other ATMs from 15,000 down to 10,000, with a limit of 274,000 total ATMs, that only leaves 11,000 Cargo ATMs:

20,500 to 11,000 = 46% reduction in Cargo ATMs

3) **Maximum reduction in Cargo ATMs**

Assuming the same as scenario 2 but Other ATMs remain at 15,000 then that only leaves 6,000 Cargo ATMs:

20,500 to 6,000 = 71% reduction in Cargo ATMs

[1] MAG Stansted Airport Planning Application – Planning Statement paragraph 2.80 on page 18

03. August 2021

Breaking News – DHL Express orders 12 all-electric freighter aircraft

The integrator will be the first to commercially operate zero-emission cargo aircraft, aiming to set up an all-electric express network to lower Deutsche Post-DHL's CO2 footprint. Newcomer Eviation, a visionary aviation firm founded in Israel and now based in the Seattle area, USA, is the freighter provider. The announcement follows United Airlines' recent decision to buy 100 19-seat electric passenger planes from U.S. producer, Heart Aerospace.

„Alice" can fly 815 kilometers with a single battery charge, carrying 1,2 tons – image courtesy Eviation

Eviation CEO, Omer Bar-Yohay sees his company as a pioneer of a new era in air transport. *"We are in the third age of aviation which began with propeller driven aircraft, followed by the jet epoch that is now being replaced by the electric era."* And that is where he believes his company will be an important player, referring to his product "Alice", which is set to transform the industry. *"(Alice is) the world's leading fully electric aircraft, which enables airlines – both cargo and passenger – to operate a zero-emission fleet,"* reads a joint DHL-Eviation release.

Convincing features, says DHL

Alice's maiden flight is scheduled for takeoff later this year, with the first delivery to DHL taking place in 2024. Here are the main operational and technical parameters as described by producer Eviation: *"Alice can be flown by a single pilot, and will be able to carry 1,200 kilograms (2,600 lbs) per flight. It will require 30 minutes or less to charge per flight hour, and have a maximum range of up to 815 kilometers (440 nautical miles). Alice will operate in all environments currently serviced by piston and turbine aircraft. Alice's advanced electric motors have fewer moving parts to increase reliability and*

NEWS

British Airways runs first flight with sustainable aviation fuel

16 Sep 2021 (Last Updated September 16th, 2021 12:50)

The journey using sustainable aviation fuel resulted in 62% fewer carbon emissions compared with the flight in 2010.

Share Article

BP provided SAF for the aircraft that was blended at 35% with traditional jet fuel. Credit: Heathrow Airports Limited.

UK-based airline carrier British Airways has operated its first passenger flight using sustainable aviation fuel (SAF) between Heathrow (LHR) and Glasgow Airport (GLA).

The journey of flight BA1476 with SAF resulted in 62% fewer carbon emissions compared to a similar journey in 2010, stated the carrier.

For operating this short carbon-neutral flight, British Airways partnered with Glasgow Airport, Heathrow, Airbus, oil giant BP, and air traffic service provider NATS.

BP provided the SAF that was blended at 35% with traditional jet fuel in line with technical aviation specifications.

The flight was operated by an Airbus A320neo, which is said to be the most fuel-efficient short-haul aircraft in British Airways' fleet currently.

NATS air traffic controllers directed the aircraft from the moment it took off from Heathrow airport in London to its descent at Glasgow, avoiding any levelling off, which would have led to a rise in fuel consumption.

In order to ensure an efficient journey, the aircraft's climb speeds were programmed in advance while aircraft computer systems worked out an optimum altitude and used precise weight and wind data.

During flight landing, the second engine of the aircraft was switched off in an effort to halve the power consumed and carbon emitted as it taxied to stand.

The flight's main objective was to show the progression of the aviation industry in decarbonisation over the last decade.

British Airways chairman and CEO Sean Doyle said: "This flight offered a practical demonstration of the progress we're making in our carbon reduction journey. By working together with our industry partners we've delivered a 62% improvement in emissions reductions compared to a decade ago.

"This marks real progress in our efforts to decarbonise and shows our determination to continue innovating, working with governments and industry and accelerating the adoption of new low carbon solutions to get us closer still to the Perfect Flight of the future."

In July, a total of four aviation projects, backed by British Airways and aimed at facilitating decarbonisation, were shortlisted for the UK Government funding.

The projects are set to promote the industry's net-zero carbon emissions targets by 2050.

on 13th October 2021

Image : Universal Hydrogen

AVIATION TECHNOLOGY AND INNOVATION

VALIUS VENCKUNAS

Hydrogen-powered ATR 72 gets a launch customer

Share this news

ASL Aviation Holdings, an Ireland-based firm, intends to purchase up to 10 conversion kits to make their ATR 72 freighters run on hydrogen.

The company has signed a letter of intent with Universal Hydrogen, becoming the launch customer for the new type of vehicle.

According to a press release, the converted ATR 72s are going to be used for cargo transportation. In addition to conversion kits, ASL Aviation Holdings will receive one already converted aircraft for tests.

Universal Hydrogen plans to manufacture conversion kits that would allow existing models of turboprop aircraft to run on hydrogen. The company also advertises its intention to create and maintain infrastructure for distributing the new type of fuel.

According to the firm, converting aircraft to run on hydrogen not only greatly reduces carbon emissions, but also improves their performance and reduces operational costs.

In recent years there have been numerous announcements of investments into research and development of hydrogen-powered aircraft. While the use of such fuel remains challenging, industry experts expect the hydrogen aircraft market to reach over $174 billion by 2040.

ATR 72-600F

Born to be a freighter

Overall length
27.17m

Wingspan
27.05m

Large cargo door
2.94m x 1.8m
(116" x 71")

21,000kg
maximum
zero fuel weight

23,000kg
maximum
take-off weight

22,350kg
maximum
landing weight

Rear upper hinged door
optimised for cargo operations

Reinforced flooring
allowing the transportation of heavier cargo

Luminosity of **86 lux** in the cargo hold more than doubles standard of previous generation

A Quiet neighbor
9 dB quieter than the most stringent ICAO requirements

State-of-the-art
upgradable avionics suite (standard 3)

9 tonnes
of maximum structural payload

75m³
gross volume

900nm
range based on bulk configuration & typical cargo density

9 vertical nets
in bulk configuration

5 pallets
2.23m x 2.74m
(88" x 108")

7 LD-3
containers

Press Release No: 66

Date: 4 October 2021

Net-Zero Carbon Emissions by 2050

Translation:
Cero emisiones netas de CO2 en 2050 (pdf)
国际航协：2050年实现净零碳排放 (pdf)

Boston - The International Air Transport Association (IATA) 77th Annual General Meeting approved a resolution for the global air transport industry to achieve net-zero carbon emissions by 2050. This commitment will align with the Paris Agreement goal for global warming not to exceed 1.5°C.

"The world's airlines have taken a momentous decision to ensure that flying is sustainable. The post-COVID-19 re-connect will be on a clear path towards net zero. That will ensure the freedom of future generations to sustainably explore, learn, trade, build markets, appreciate cultures and connect with people the world over. With the collective efforts of the entire value chain and supportive government policies, aviation will achieve net zero emissions by 2050," said Willie Walsh, IATA's Director General.

Achieving net zero emissions will be a huge challenge. The aviation industry must progressively reduce its emissions while accommodating the growing demand of a world that is eager to fly. To be able to serve the needs of the ten billion people expected to fly in 2050, at least 1.8 gigatons of carbon must be abated in that year. Moreover, the net zero commitment implies that a cumulative total of 21.2 gigatons of carbon will be abated between now and 2050.

A key immediate enabler is the International Civil Aviation Organization's (ICAO) Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). This will stabilize international emissions at 2019 levels in the short-to-medium term. Support for this was reaffirmed in today's resolution.

Industry-wide Collective Efforts:

The path from stabilizing emissions to emissions reductions will require a collective effort. All industry stakeholders, including governments must each individually take responsibility to address the environmental impact of their policies, products, and activities. And they must work together to deliver sustainable connectivity and ultimately break aviation's dependance on fossil fuels.

"Achieving sustainable global connectivity cannot be accomplished on the backs of airlines alone. All parts of the aviation industry must work together within a supportive government policy framework to deliver the massive changes that are needed, including an energy transition. That is no different than what we are seeing in other industries. Road transport sustainability efforts, for example, are not being advanced by drivers building electric vehicles. Governments are providing policies and financial incentives for infrastructure providers, manufacturers and car owners to be able to collectively make the changes needed for a sustainable future. The same should apply to aviation," said Walsh.

The Plan

The strategy is to abate as much CO2 as possible from in-sector solutions such as sustainable aviation fuels, new aircraft technology, more efficient operations and infrastructure, and the development of new zero-emissions energy sources such as electric and hydrogen power. Any emissions that cannot be eliminated at source will be eliminated through out-of-sector options such as carbon capture and storage and credible offsetting schemes.

"We have a plan. The scale of the industry in 2050 will require the mitigation of 1.8 gigatons of carbon. A potential scenario is that 65% of this will be abated through sustainable aviation fuels. We would expect new propulsion technology, such as hydrogen, to take care of another 13%. And efficiency improvements will account for a further 3%. The remainder could be dealt with through carbon capture and storage (11%) and offsets (8%). The actual split, and the trajectory to get there, will depend on what solutions are the most cost-effective at any particular time. Whatever the ultimate path to net zero will be, it is absolutely true that the only way to get there will be with the value chain and governments playing their role," said Walsh.

The resolution demands that all industry stakeholders commit to addressing the environmental impact of their policies, products, and activities with concrete actions and clear timelines, including:

- Fuel-producing companies bringing large scale, cost-competitive sustainable aviation fuels (SAF) to the market.
- Governments and air navigation service providers (ANSPs) eliminating inefficiencies in air traffic management and airspace infrastructure.
- Aircraft and engine manufacturers producing radically more efficient airframe and propulsion technologies; and
- Airport operators providing the needed infrastructure to supply SAF, at cost, and in a cost-effective manner.

The Role of Governments

The energy transition needed to achieve net zero must be supported by a holistic government policy framework focused on realizing cost-effective solutions. This is particularly true in the area of SAF. Technology exists, but production incentives are needed to increase supply and lower costs.

The resolution calls on governments through ICAO to agree a long-term goal equivalent to the industry's net zero by 2050 commitment. In line with the longstanding approach to managing aviation's climate change impact, the resolution also called for governments to support CORSIA, coordinate policy measures and avoid a patchwork of regional, national, or local measures.

"Governments must be active partners in achieving net zero by 2050. As with all other successful energy transitions, government policies have set the course and blazed a trail towards success. The costs and investment risks are too high otherwise. The focus must be on reducing carbon. Limiting flying with retrograde and punitive taxes would stifle investment and could limit flying to the wealthy. And we have never seen an environment tax actually fund carbon-reducing activities. Incentives are the proven way forward. They solve the problem, create jobs and grow prosperity," said Walsh.

Milestones

The combination of measures needed to achieve net zero emissions for aviation by 2050 will evolve over the course of the commitment based on the most cost-efficient technology available at any particular point in time. A base case scenario as follows is the current focus:

- **2025:** With appropriate government policy support, SAF production is expected to reach 7.9 billion liters (2% of total fuel requirement)

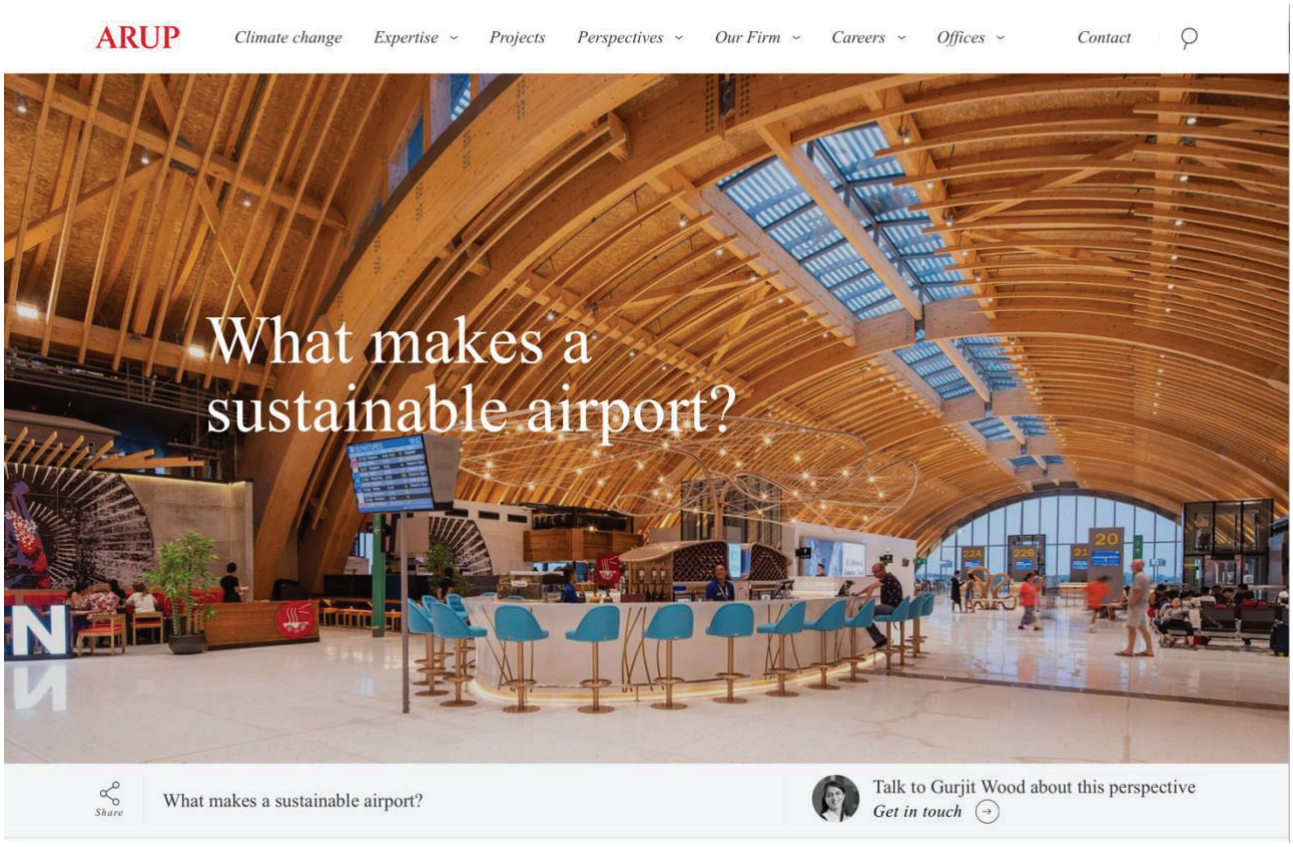
- **2030:** SAF production is 23 billion liters (5.2% of total fuel requirement). ANSPs have fully implemented the ICAO Aviation System Block Upgrades and regional programs such as the Single European Sky
- **2035:** SAF production is 91 billion liters (17% of total fuel requirement). Electric and/or hydrogen aircraft for the regional market (50-100 seats, 30-90 min flights) become available
- **2040:** SAF production is 229 billion liters (39% of total fuel requirement). Hydrogen aircraft for the short-haul market (100-150 seats, 45-120 min flights) become available.
- **2045:** SAF production is 346 billion liters (54% of total fuel requirement).
- **2050:** SAF production hits 449 billion liters (65% of total fuel requirement).

"SAF will fuel the majority of aviation's global emissions mitigation in 2050. The recently announced US Grand challenge to increase the supply of SAF to 11 billion liters (3 billion gallons) by 2030 is a great example of the kinds of policies that will drive aviation sustainability. Similarly, the announcements from several big energy suppliers that they intend to produce billions of extra liters of SAF in the near term are welcome. But we cannot tolerate announcements with no follow-up. To be meaningful, fuel suppliers must be accountable for delivering SAF at cost competitive prices.

"The way forward for all means of carbon mitigation will be scrutinized. We will match commitments to achievements in reporting that makes it clear how we are progressing. Engaging with travelers, environmental NGOs and governments based on transparent reporting will ensure that our flightpath to net zero is fully understood," said Walsh.

Ambition

"There will be those who say that we face impossible numbers and technical challenges. Aviation has a history of realizing what was thought to be impossible—and doing so quickly. From the first commercial flight to the first commercial jet was about 35 years. And twenty years on we had the first jumbo jet. Sustainability is the challenge of our generation. And today we are launching a transition that is challenging. But in 30 years it is also within reach of human ingenuity, provided governments and the whole industry work together and hold each other accountable for delivery," said Walsh.



The push for action on climate change challenges different sectors of our economy in different ways. For ***aviation***, there are two clear priorities – the shift to sustainable aviation fuels, a transition that's a work in progress, and second, the need to develop sustainable airports. From wealth to employment to cultural exchange, airports have always made a considerable contribution to both national economy and surrounding communities, but that role is likely to come under renewed scrutiny as sustainable development continues to reframe the opinions of governments, regulators, investors and the travelling public. So, what would make an airport 'sustainable' in this emerging economic landscape?

The sustainable airport isn't simply one that is protected from physical climate risks like extreme weather and rising sea levels. At a minimum, we believe that airports will have to tackle these five questions if they're to become truly sustainable.

1. How can an airport achieve net zero emissions?

In terms of overall aviation CO2 emissions, while the majority is produced from flying aircraft, it doesn't mean airports' ground operations can't become more sustainable. Airports will need to comprehensively switch to renewable

energy and invest in energy efficiency and energy storage to reduce carbon emissions, a process we have recently scoped out in detail for ***San Francisco Airport***. Mapping and modelling energy use across airports' complex estates, including optimising airfield layout, is a vital first step.

Given airports' typical physical footprint, and with renewable infrastructure continuing to fall in cost, there are also possibilities to develop on-site energy generation from solar, wind, biomass and hydrogen sources. India's Cochin International Airport claims to produce 100% of its energy through renewables, by siting a large solar array on airport buildings and surrounding land, an idea that other airports can emulate.

Surface access is a major emissions factor at airports. Prioritising public transport can reduce surface access related emissions. In 2018, surface access caused 33% of Heathrow Airport's emissions and we developed a first of its kind ***report*** which drew on airport data to identify ways to improve the speed, reliability and sustainability of travelling to and from the airport.

To shape rapid change, ACI's Airport Carbon Accreditation scheme and new government regulation (like both the UK government's new decarbonisation plan and the European Union's recent Green Deal proposals), are beginning to set stringent targets for reductions in waste and embodied carbon, and levels of renewable energy procurement. Governments can also establish a lifecycle cost assessment for airport projects, so operators understand how to achieve net zero on existing as well as new buildings. Net zero is possible, but must be approached in an integrated way, from multiple operational angles.

2. Can we design airports to become more physically sustainable?

As in other resource heavy infrastructure, airports could shift to a 360-degree lifecycle approach to the design, construction and operation of new and existing physical assets. This would enable them to embody a circular economy approach to their built assets, adopting materials passports and other measures to enable the reuse of materials when facilities reach their end of life, lowering lifetime emissions and retaining the value of building products and assemblies as a result. In our work with one leading airport, our assessments were able to identify 8,500m2 of existing concrete pavement that could be retained and reused from upgrade works. It's a matter of adopting a different mindset and anticipating re-use wherever practical.

In effect, an airport is a complex ecosystem of environments, services, vehicles and supporting systems, which all consume a mix of energy and resources. Optimisation requires taking a system-wide approach, by reducing waste, improving recycling, using on-site waste-to-energy and anaerobic digestion systems to improve performance, and committing to zero-waste-to-landfill commitments.

3. How do airports grow without damaging nature and biodiversity?

There is likely to be growing expectation that airports commit to ‘green managed growth’ – the concept of setting limits to environmental impacts while continuing to grow economically. It would mean agreeing mutually acceptable methods of monitoring and enforcement regarding issues like noise, carbon emissions, surface access impacts, air quality and so on – but would also represent a spur to innovation.

To address biodiversity impacts, there are many great examples of airports already adopting practices like green roofs and expanded planting within their estates in ways that are compatible with aviation safety. These are effective but controlled ways of encouraging surrounding nature in their immediate environs. Local environmental off-setting could achieve other national goals too. Instead of simply off-setting by planting forests in other areas or regions, airports could invest in the domestic boiler replacement with heat pumps in the local community, helping to accelerate the decarbonisation of home heating and bolstering their status as socially responsible businesses.

4. How can airports become healthier for employees, communities and users?

From the quality of the passenger experience to local air quality and noise levels, airports can do more to improve the health and wellbeing impacts they produce. Policies to encourage the use of electric vehicles within their estates and ground power to aircraft can bring down air pollution, supporting local air quality goals. Reductions in light pollution and adoption of indoor air quality monitoring, limiting the use of toxic substances, introduction of biophilic design, as well as measures to reduce the risks of creating heat islands, would also all strengthen an airport’s sustainability credentials.

Becoming more sustainable in terms of health and wellbeing means taking a fundamentally human-centred design approach to aviation infrastructure, operations and environments. We are collaborating with the EU Aviation Wellbeing Committee to challenge the industry to design for the needs of all those who interact with it.

5. How can airports play a bigger role in the local community?

Airports are major employers, but the sustainable airport can play a larger role in the community than merely providing jobs. As focus points for a range of technical, engineering and service skills, they have an opportunity to become a hub for local skills, offering apprenticeships, and reaching out to communities that lack educational advantages.

This, more active, posture would be a chance to demonstrate leadership on a series of interconnected urban issues. Airports are typically located in the outer reaches of urban areas, providing a potentially powerful set of connections in areas of often less-wealthy populations. Luton Airport, north of London, is focusing on green aviation technology research and development, becoming a connector between universities and engineering businesses in the area. For other airports, there's clear potential to develop low-emission agriculture on their surrounding land, helping the food industry to reduce 'food miles' and advance its own sustainability agenda. The possibilities are considerable, varied and local.

Sustainability: a license to operate?

The development of sustainable aviation fuels, including biofuels, hydrogen, and electric-powered aircraft is well underway, but will take time. The sustainable airport is something we can achieve right now. Airports have a fantastic opportunity to lead the sustainability agenda, pioneer progressive economic measures and practices, and ensure that the industry is seen as an active participant in the shift to a net zero economy. Ultimately, once the world's airports are more vocal about their sustainability commitments, and making progress on a path to net zero, they will strengthen their social license to operate. This won't just be to the benefit of the industry, but will strengthen the cities and communities it serves.

Air Cargo Market Analysis

August 2021

Air cargo still strong, but pressures on capacity are rising

- August was the fourth consecutive month of relative stability in air cargo. Industry-wide cargo tonne-kilometres (CTKs) rose by 7.7% vs. August 2019, compared with an 8.8% expansion in July. After removing seasonality from the data, CTKs continued to trend sideways, well above the pre-pandemic levels.
- Developments in key demand drivers such as manufacturing production and export orders remain supportive to the near-term cargo demand, but pandemic-related supply chain disruptions have been impacting cargo capacity and putting an upward pressure on cargo rates.
- Industry-wide cargo load factor (CLF) reached a record high outcome for any month of August, at 54.2%. CLFs remained elevated across all regions and were the highest in Asia Pacific.

Growth in air cargo remained robust in August

Air cargo demand has stabilized over the past four months at levels well above the pre-pandemic period. Industry-wide cargo tonne-kilometres (CTKs) rose by 7.7% in August 2021 vs. August 2019, which is only modestly slower than in July (8.8%) and well above the long-term monthly average of 4.7%. After removing seasonality from the data, global cargo volumes continued to trend sideways (red line in **Chart 1**). Growth and CTK levels were stable also across most regions, although at different rates. African carriers reported the fastest CTK expansion for another month, at 32.4% vs. pre-crisis August 2019, followed by North American airlines (19.3%). In contrast, Latin American CTKs continued to decline sharply (-13.2%).

Chart 1: CTK levels, actual and seasonally adjusted

Sources: IATA Economics, IATA Monthly Statistics

Outlook still upbeat but there are challenges ahead

For now, the outlook for air cargo business remains positive, but growth in some of the key demand drivers has slowed recently and pandemic-related constraints have increased pressure on available cargo capacity.

One of the key indicators that continues to bode well for the near-term cargo demand is the low level of stock for businesses as shown by inventory-to-sales ratio in **Chart 2**. Historically, this pattern has been associated with rising air cargo volumes since businesses and shippers tend to favor air cargo over the other modes of transport to meet the strong customer demand as quickly as possible.

Chart 2: US inventory-to-sales ratio, global CTKs

Sources: IATA, Refinitiv Datastream

Another supportive factor for air cargo growth is that the manufacturing production continues rising

Air cargo market overview - August 2021

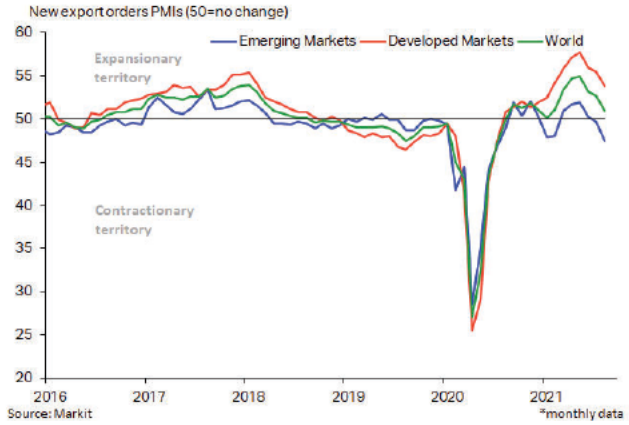
To aid understanding, the table includes both % comparisons with pre-crisis 2019 months and 2020 months.

	World share [1]	August 2021 (% ch vs the same month in 2019) CTK	ACTK	CLF (%-pt)[2]	CLF (level)[3]	August 2021 (% year-on-year) CTK	ACTK	CLF (%-pt)[2]	CLF (level)[3]
TOTAL MARKET	*100.0%*	**7.7%**	**-12.2%**	**10.0%**	**54.2%**	**19.0%**	**19.5%**	**-0.2%**	**54.2%**
International	*85 5%*	8.6%	-13.2%	12.3%	61.1%	22.0%	21.1%	0.5%	61.1%

[1]% of industry CTKs in 2020 [2]Change in load factor vs same month in 2019 [3]Load factor level

globally – a sign that global demand for goods remains strong and should benefit air cargo shipments. That said, the growth in this metric is not as fast as in the previous months (global output PMI at 51.9 in August vs. 54.4 in July) due to weaker outcomes in the US, Eurozone, and Asia. A similar trend has also been observed in new export orders – another important air cargo demand driver – where expansion slowed at the global level and turned into contraction in emerging economies (**Chart 3**). All told, although the latest developments in the two indicators mentioned above are consistent with growing air cargo demand, they are less supportive than in the previous months and show that global manufacturing growth has peaked.

Chart 3: New export orders component of the manufacturing PMI



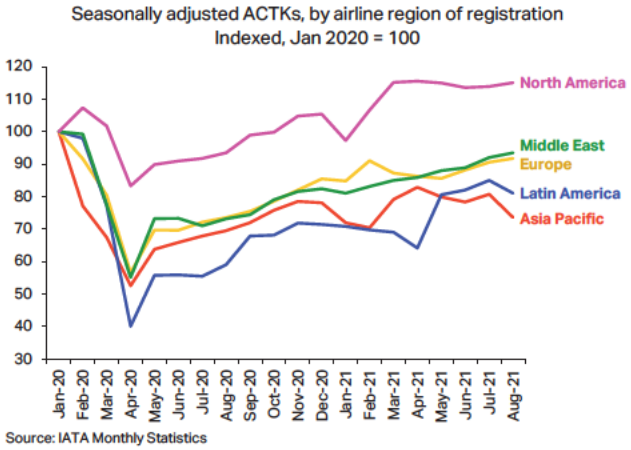
One of the main challenges to further economic growth is a severe global supply chain congestion resulting from pandemic restrictions. Factory closures and staff quarantines have led to transport delays and input shortages, which have been adversely impacting businesses through higher cost of materials. For airlines, the longer delivery times mean higher air cargo demand since shippers use air transport to speed up their shipping process. However, delays and flight cancellations in airports and uncertainty about schedules have also increased pressure on already constrained cargo capacity. The combination of robust consumer demand and capacity pressures has been pushing up already elevated shipping rates, making air cargo less affordable for many businesses.

Looking forward, it is likely that cargo demand will remain strong amidst the upcoming large e-commerce events (Single's Day, Black Friday, Christmas…) and launch of new tech products. However, if the available capacity falls further, there might be some setbacks on the way for volumes actually carried.

Global cargo capacity falls amidst ASPAC disruptions

The pressure on global air cargo capacity has increased in August. The industry-wide available cargo tonne-kilometres (ACTKs) fell by 12.2% in August 2021 compared with pre-crisis August 2019 – a 1.7 percentage points (ppts) faster decline than in July. In month-on-month terms, ACTKs fell by 1.6% – the fastest fall since January 2021. The deterioration in global capacity was largely driven by developments in domestic Asia Pacific market. The spread of Delta variant in mainland China led closure of the Nanjing airport and strict airport and airline crew quarantines in Shanghai, Beijing and other key airport hubs. Pandemic lockdowns also weighed on available cargo space in Vietnam. Amongst the other regions, capacity also fell in the highly volatile Latin America market (-4.6% m-o-m). In the other parts of the world ACTKs continue to recover, albeit at a slow rate (**Chart 4**).

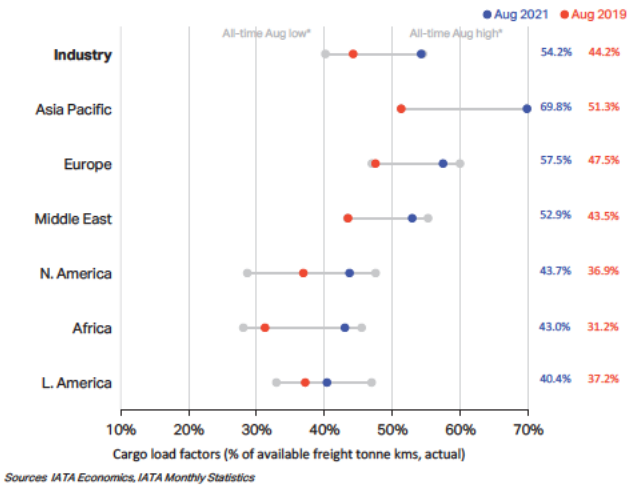
Chart 4: SA ACTKs by region of airline origin



Load factors remain well above the pre-crisis levels

The rising cargo demand against falling cargo supply meant that the industry-wide cargo load factor (CLF) reached a record high outcome for any month of August, at 54.2% (**Chart 5**). Cargo load factors remained elevated across all regions and were the highest in Asia Pacific.

Chart 5: Cargo load factors by region of airline origin

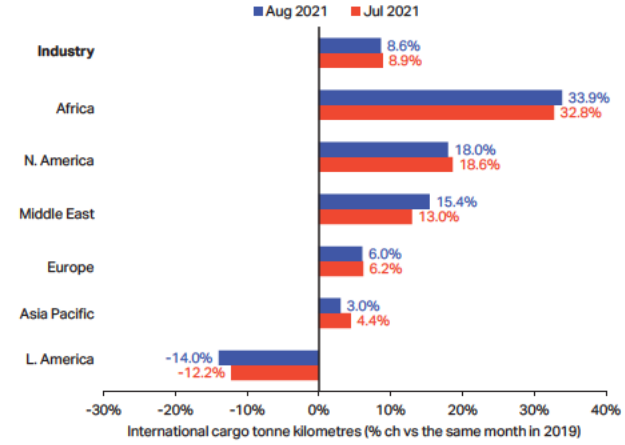


International air cargo remained stable

As for the industry as a whole, international air cargo continued to trend sideways but remained well above the pre-crisis levels. CTKs rose by 8.6% in August 2021 vs August 2019 – broadly unchanged from July (**Chart 6**). Growth results were similar to July across all regions.

The recovery in international capacity remained slow due to still subdued international passenger market. Indeed, international belly cargo ACTKs were down 37.7% in August 2021 vs. August 2019 – a little improvement on the 39.1% fall in July. At the same time, growth in international dedicated ACTKs accelerated, to 28.3% compared to August 2019 (27.3% in July). Aggregating the two, international ACTKs fell 13.2% vs. the pre-pandemic levels.

Chart 6: Int'l CTK growth versus the same month in 2019 (airline region of registration)



Sources: IATA Economics, IATA Monthly Statistics

African airlines outperformed again

African airlines continued to lead the international CTK growth chart in August, reporting a 33.9% expansion vs. August 2019 – a 1.1ppts improvement on the growth in the same metric in July. Amongst the key regional routes, Africa-Asia has been showing the fastest expansion, at 26.4% vs. two years ago.

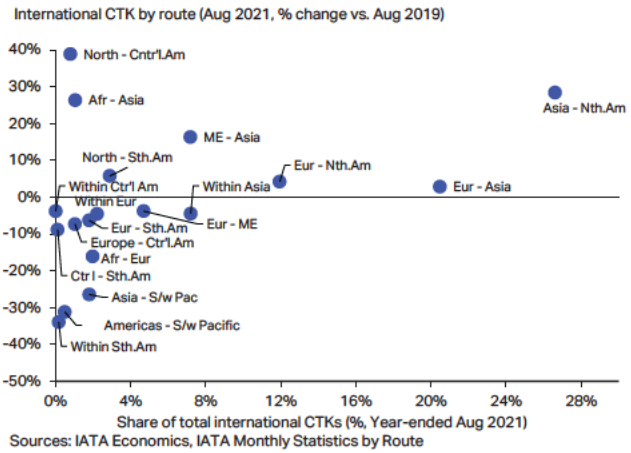
Demand drivers remain supportive in Nth. America

In August, airlines based in North America flew 18.0% more CTKs compared with pre-crisis levels. Manufacturing PMI indices signal that production and new export orders continue to rise robustly in the US. This bodes well for the region's near-term cargo demand outlook. That said, international cargo capacity remains restricted with many of the important cargo hubs reporting severe congestions (e.g. Los Angeles, Chicago). Amongst the region's key int'l markets, the smaller North-Central America performed the strongest, expanding by nearly 39% compared with pre-pandemic August 2019 (**Chart 7**).

CTK growth accelerated slightly in the Middle East

Middle Eastern carriers reported the largest improvement in August amongst all regions. Their international CTKs rose by 15.4% compared with pre-crisis August 2019 – a 2.4ppts uptick on the CTK expansion in July. The region's growth was boosted by cargo traffic on Middle East-Asia segment-based routes (+16.4% in August vs. August 2019).

Chart 7: International CTKs by route (segment-based)



Sources: IATA Economics, IATA Monthly Statistics by Route

Int'l cargo developments unchanged in Europe

International CTKs of European airlines grew by 6.0% vs. pre-pandemic levels for another month. The drivers of near-term air cargo demand including manufacturing production and export demand continue to perform well in the region.

Capacity recovery stalling in Asia Pacific

Asia Pacific airlines reported a moderate international air cargo growth in August, at 3.0% (vs. 2019), which is a slower expansion than in July (+4.4%). However, in month-on-month terms int'l CTKs picked up by 0.7%. Looking ahead, the slowing growth momentum in the Chinese economy indicates that operating backdrop will be less supportive to the region's near-term cargo demand. Moreover, although the latest pandemic disruptions in China impacted to a greater extent domestic flights, international Asia Pacific capacity also remains severely restricted, especially on Within Asia and Europe-Asia routes.

Latin American airlines lag the industry

Latin American airlines remained at the bottom of the CTK growth chart for another month, reporting a 14.0% international CTK decline vs. August 2019. The shortage of international cargo capacity remains the largest amongst all regions, at -27.1% vs. August 2019).

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Air cargo market detail - August 2021

To aid understanding, the table includes both % comparisons with pre-crisis 2019 months and 2020 months.

	World share [1]	August 2021 (% ch vs the same month in 2019) CTK	ACTK	CLF (%-pt)[2]	CLF (level)[3]	August 2021 (% year-on-year) CTK	ACTK	CLF (%-pt)[2]	CLF (level)[3]
TOTAL MARKET	*100.0%*	**7.7%**	**-12.2%**	**10.0%**	**54.2%**	**19.0%**	**19.5%**	**-0.2%**	**54.2%**
Africa	*2.0%*	32.4%	-3.8%	11.8%	43.0%	27.4%	34.7%	-2.5%	43.0%
Asia Pacific	*32.6%*	-2.1%	-28.1%	18.5%	69.8%	17.9%	5.1%	7.6%	69.8%
Europe	*22.3%*	6.3%	-12.1%	9.9%	57.5%	25.7%	24.1%	0.7%	57.5%
Latin America	*2.4%*	-13.2%	-20.0%	3.2%	40.4%	17.7%	36.4%	-6.4%	40.4%
Middle East	*13.0%*	15.5%	-5.2%	9.4%	52.9%	22.4%	27.8%	-2.3%	52.9%
North America	*27.8%*	19.3%	0.7%	6.8%	43.7%	13.2%	23.1%	-3.8%	43.7%
International	*85.5%*	**8.6%**	**-13.2%**	**12.3%**	**61.1%**	**22.0%**	**21.1%**	**0.5%**	**61.1%**
Africa	*2.0%*	33.9%	-2.1%	11.7%	43.4%	27.4%	34.2%	-2.3%	43.4%
Asia Pacific	*29.1%*	3.0%	-21.7%	18.2%	75.7%	21.8%	16.5%	3.3%	75.7%
Europe	*21.9%*	6.0%	-13.6%	11.2%	60.4%	25.9%	24.1%	0.8%	60.4%
Latin America	*2.0%*	-14.0%	-27.1%	7.9%	51.9%	14.4%	18.6%	-1.9%	51.9%
Middle East	*13.0%*	15.4%	-5.1%	9.5%	53.3%	22.4%	27.7%	-2.3%	53.3%
North America	*17.5%*	18.0%	-6.6%	11.4%	54.5%	17.5%	16.9%	0.3%	54.5%

[1]% of industry CTKs in 2020 [2]Change in load factor vs same month in 2019 [3]Load factor level

Note the total industry and regional growth rates are based on a constant sample of airlines combining reported data and estimates for missing observations. Airline traffic is allocated according to the region in which the carrier is registered; it should not be considered as regional traffic. Historical statistics are subject to revision.

Air cargo year-to-date developments (Jan-August 2021)

	Year-to-date (% ch vs the same period in 2019) CTK	ACTK	CLF (%-pt)[2]	CLF (level)[3]
TOTAL MARKET	**7.9%**	**-12.3%**	**10.7%**	**57.0%**
Africa	31.8%	-3.9%	13.2%	48.8%
Asia Pacific	-0.1%	-22.3%	14.7%	66.3%
Europe	5.6%	-15.2%	12.4%	63.2%
Latin America	-18.2%	-30.4%	6.1%	41.1%
Middle East	12.7%	-10.8%	12.1%	58.2%
North America	20.2%	1.6%	7.2%	46.8%

[1]% of industry CTKs in 2020 [2]Change in load factor vs same period in 2019 [3]Load factor level

	Year-to-date (% ch vs the same period in 2019) CTK	ACTK	CLF (%-pt)[2]	CLF (level)[3]
International	**8.3%**	**-14.1%**	**13.3%**	**64.5%**
Africa	33.3%	-1.6%	12.9%	49.3%
Asia Pacific	3.6%	-21.5%	18.6%	76.6%
Europe	5.4%	-15.6%	13.1%	65.7%
Latin America	-19.8%	-36.1%	10.9%	53.2%
Middle East	12.7%	-10.6%	12.1%	58.6%
North America	19.0%	-2.2%	10.0%	56.1%

[1]% of industry CTKs in 2020 [2]Change in load factor vs same period in 2019 [3]Load factor level